

Eze EMS

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# Eze EMS xAPI Technical Reference Document

This document contains technical details about Eze EMS xAPI.



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## Table of Contents

|                               |           |
|-------------------------------|-----------|
| <b>Revision History</b>       | <b>6</b>  |
| <b>Introduction</b>           | <b>11</b> |
| Eze EMS xAPI Basics           | 11        |
| Eze EMS xAPI Use Restrictions | 11        |
| Pre-Requisites                | 11        |
| Version                       | 12        |
| Endpoint                      | 12        |
| <b>Resources</b>              | <b>13</b> |
| <b>Order</b>                  | <b>16</b> |
| Custom Data Type              | 17        |
| AllocationDetails             | 17        |
| AllocationType                | 17        |
| OrderDetailsResponse          | 17        |
| OrderInfoFilters              | 18        |
| OrderRow                      | 19        |
| OrderType                     | 24        |
| TradeType                     | 24        |
| CancelPairOrder               | 24        |

|                                 |           |
|---------------------------------|-----------|
| CancelSingleOrder .....         | 25        |
| ChangePairOrder .....           | 26        |
| ChangeSingleOrder .....         | 27        |
| GetOrderDetailByDateRange ..... | 28        |
| GetOrderDetailByOrderId .....   | 29        |
| GetUserAccounts .....           | 30        |
| SubmitAllocationOrder .....     | 30        |
| SubmitBasketOrder .....         | 32        |
| SubmitBookTrade .....           | 33        |
| SubmitPairOrder .....           | 33        |
| SubmitSeedData .....            | 35        |
| SubmitSingleOrder .....         | 36        |
| SubmitTradeReport .....         | 39        |
| SubscribeOrderInfo .....        | 40        |
| SubscribeOrderInfoJson .....    | 47        |
| <b>Utilities .....</b>          | <b>48</b> |
| Secured Remote Password .....   | 48        |
| StartLoginSrp .....             | 48        |
| CompleteLoginSrp .....          | 49        |
| ChangePasswordSRP .....         | 50        |
| Custom Data Type .....          | 51        |
| AggregatePositionRecord .....   | 51        |
| BookOrder .....                 | 52        |
| DepositRow .....                | 53        |
| ExpirationType .....            | 55        |
| OrderInfo .....                 | 56        |
| OrderResponse .....             | 58        |
| Position .....                  | 63        |

|                                     |           |
|-------------------------------------|-----------|
| Price .....                         | 65        |
| PriceTypeEnum .....                 | 65        |
| ServerAcknowledgement .....         | 66        |
| StrategyListRow .....               | 66        |
| Connect .....                       | 66        |
| Disconnect .....                    | 67        |
| GetStrategyList .....               | 68        |
| GetTodaysActivity .....             | 68        |
| GetTodaysActivityJson .....         | 70        |
| GetTodaysBalances .....             | 71        |
| GetTodaysBrokenDownPositions .....  | 72        |
| GetTodaysNetPositions .....         | 73        |
| SubscribeHeartBeat .....            | 73        |
| SubscribeTodaysNetPositions .....   | 74        |
| UnSubscribeTodaysNetPositions ..... | 74        |
| <b>MarketData .....</b>             | <b>76</b> |
| Custom Data Type .....              | 77        |
| AlternateSymbology .....            | 77        |
| CommonBarsFields .....              | 77        |
| Interval .....                      | 77        |
| Level1MarketDataRecord .....        | 78        |
| OptionCalculationResponse .....     | 79        |
| OptionTypes .....                   | 80        |
| QuoteChainResponse .....            | 80        |
| SecurityData .....                  | 81        |
| SymbolData .....                    | 84        |
| SymInfoResponse .....               | 85        |
| TicksResponse .....                 | 86        |

|  |            |
|--|------------|
| TickTypes .....                            | 86         |
| AddSymbols .....                           | 86         |
| GetDailyWeeklyMonthlyBars .....            | 87         |
| GetDescriptionFromOptionSymbol .....       | 88         |
| GetIntradayBars .....                      | 89         |
| GetLevel1MarketData .....                  | 90         |
| GetOptionChainForUnderlier .....           | 90         |
| GetOptionsAndGreekData .....               | 91         |
| GetOptionSymbolFromDescription .....       | 92         |
| GetSecurityData .....                      | 92         |
| GetSymbolFromAlternateSymbology .....      | 93         |
| GetSymbolReferenceData .....               | 93         |
| GetSymbolsFromCompanyName .....            | 94         |
| GetTickData .....                          | 94         |
| RemoveSymbols .....                        | 95         |
| SubscribeLevel1Ticks .....                 | 96         |
| SubscribeLevel2Ticks .....                 | 98         |
| SubscribeTickData .....                    | 99         |
| UnSubscribeLevel1Data .....                | 101        |
| UnSubscribeLevel2Data .....                | 101        |
| UnSubscribeTickData .....                  | 102        |
| <b>Exceptions and Error Handling .....</b> | <b>103</b> |
| <b>Appendix A: Order Event Types .....</b> | <b>104</b> |

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## Revision History

The table below provides a snap-shot of the updates in each revision of this document. A bar is displayed on the right side of the page to help you identify updates in the current release.

| Version No.                                   | Date         | Summary of Update  |
|---|--------------|--|
| v2025.2.0.1873                                | Mar 26, 2025 | Renamed the GetOrderDetailByDateRangeJson to <a href="#">GetOrderDetailByDateRange</a> API.  |
| v2025.1.0.1822                                | Mar 07, 2025 | Renamed the GetOrderDetailByOrderIdJson to <a href="#">GetOrderDetailByOrderId</a> API.<br>Deleted GetTodaysActivityBook API.<br>Added new fields in <a href="#">SubscribeOrderInfoRequest</a> . |
| v2024.7.1.1651                                | Nov 29, 2024 | There are no documentation updates in this EMS xAPI release.   |
| v2024.7.0.1636                                | Nov 12, 2024 | Added the <a href="#">SubscribeTodaysNetPositions</a> and <a href="#">UnSubscribeTodaysNetPositions</a> API.   |
| v2024.6.1.1634, v2024.6.0.1615                | NA           | There are no documentation updates in this EMS xAPI release.   |
| v2024.5.0.1576                                | Aug 19, 2024 | Re-arranged the order of Order, Utility, and MarketData APIs alphabetically.   |
| v2024.4.0.1473                                | Jun 20, 2024 | Added the <a href="#">SubscribeTickData</a> and <a href="#">UnSubscribeTickData</a> API.<br>Added new fields in <a href="#">SubmitSingleOrderRequest</a> .                                       |
| v2024.2.0.1355                                | Mar 20, 2024 | There are no documentation updates in this EMS xAPI release.   |
| v2024.1.0.1209                                | Feb 14, 2024 | Added new fields in <a href="#">IntradayBarsRequest</a> , <a href="#">SecurityData</a> , and <a href="#">SubscribeOrderInfoResponse</a> .  |
| v2023.8.1.1167, v2023.8.0.1146, v2023.7.0.887 | NA           | There are no documentation updates in these EMS xAPI releases.   |
| v2023.6.0.723                                 | Sep 27, 2023 | Added new fields in <a href="#">OrderDetailsResponse</a> .   |

| Version No.   | Date         | Summary of Update  |
|---------------|--------------|--|
| v2023.5.0.947 | Aug 18, 2023 | <p>Added new field in <a href="#">UnSubscribeLevel1DataResponse</a>, <a href="#">AddSymbolsResponse</a>, <a href="#">RemoveSymbolsResponse</a>, <a href="#">UnSubscribeLevel2DataResponse</a>, <a href="#">SubmitBookTradeResponse</a>, <a href="#">SubmitSingleOrderResponse</a>, <a href="#">ChangeSingleOrderResponse</a>, <a href="#">CancelSingleOrderResponse</a>, <a href="#">SubmitPairOrderResponse</a>, <a href="#">ChangePairOrderResponse</a>, <a href="#">CancelPairOrderResponse</a>, <a href="#">SubmitSeedDataResponse</a>, <a href="#">SubscribeOrderInfoResponse</a>, <a href="#">BasketOrderResponse</a>, <a href="#">SubmitAllocationOrderResponse</a>, <a href="#">SubmitTradeReportResponse</a>, <a href="#">ServerAcknowledgement</a>, <a href="#">StartLoginSrpResponse</a>, <a href="#">CompleteLoginSrpResponse</a>, <a href="#">ConnectResponse</a>, <a href="#">DisconnectResponse</a>, and <a href="#">ChangePasswordSRPResponse</a>.</p> |
| v2023.4.0.809 | Jul 12, 2023 | <p>Added new fields in <a href="#">OrderInfoFilters</a>.</p> <p>Deleted fields in <a href="#">DailyWeeklyMonthlyBarsRequest</a>, <a href="#">IntradayBarsRequest</a>, <a href="#">TickDataRequest</a>, and <a href="#">OptionsAndGreekDataRequest</a>.</p> <p>Added <a href="#">Level1MarketDataRecordRequest</a> object.</p>  |
| v2023.3.0.638 | May 12, 2023 | <p>There are no documentation updates in this EMS xAPI release.</p>  |
| v2023.2.0.478 | Apr 14, 2023 | <p>Added the following API and Custom Data Type:</p> <ul style="list-style-type: none"> <li><a href="#">AllocationDetails</a></li> <li><a href="#">SubmitBookTrade</a></li> </ul> <p>Updated <a href="#">Level2MarketDataRequest</a> to support more than one symbol.</p> <p>Deleted Request and Advise fields from <a href="#">OptionChainRequest</a> and <a href="#">SymbolReferenceDataRequest</a>.</p>   |

| Version No.  | Date         | Summary of Update  |
|--|--------------|--|
| v2023.1.0.2  | Feb 16, 2023 | <p>Added <a href="#">OrderDetailsResponse</a> Custom Data Type.</p> <p>Added new field in <a href="#">SubmitSingleOrderRequest</a>, <a href="#">SubmitSingleOrderResponse</a>, and <a href="#">TodaysActivityRequest</a>.</p> <p>Updated the key values in <a href="#">SubscribeOrderInfoResponse</a> and <a href="#">OrderResponse</a>.</p> |
| v2022.8.0.4  | Dec 21, 2022 | <p>Added new fields in <a href="#">SubscribeOrderInfoRequest</a>, <a href="#">TodaysActivityRequest</a> and <a href="#">TodaysActivityJsonRequest</a>.</p>   |
| v2022.5.0.0  | Sep 09, 2022 | <p>Added new fields in <a href="#">OrderResponse</a> and <a href="#">Level1MarketDataResponse</a>.</p>   |
| v2022.3.0.0  | Jun 10, 2022 | <p>Added new fields in <a href="#">TodaysBrokenDownPositionsRequest</a>. Added additional event types in <a href="#">Appendix A: Order Event Types</a>.</p>  |
| v2022.2.3.0  | Apr 07, 2022 | <p>Added the <a href="#">GetLevel1MarketData</a> API and extended fields in <a href="#">SubscribeOrderInfoResponse</a>.</p>  |
| v2022.2.2.0, v2022.2.1.0, v2022.2.0.0, v2021.9.0.0, v2021.8.1.0, v2021.7.0.0 | NA           | <p>There are no documentation updates in these EMS xAPI releases.</p>  |



| Version No. | Date         | Summary of Update  |
|-------------|--------------|--|
| v2021.5.0.0 | Jul 16, 2021 | <p>Added the following APIs and Custom Data Type:</p> <ul style="list-style-type: none"> <li><a href="#">SubscribeOrderInfoJson</a></li> <li><a href="#">GetOrderDetailByOrderIdJson</a></li> <li><a href="#">GetOrderDetailByDateRangeJson</a></li> <li><a href="#">ExpirationType</a></li> <li><a href="#">PriceTypeEnum</a></li> </ul> <p>Added <b>Required?</b> field information for the Order and Utilities request APIs.</p> <p>Updated API descriptions for the Order and Utilities APIs.</p> <p>Added, Modified, and Deleted Fields in <a href="#">OrderResponse</a>, <a href="#">SubmitSingleOrderRequest</a>, <a href="#">ChangeSingleOrderRequest</a>, <a href="#">SubscribeOrderInfoResponse</a>, <a href="#">OrderInfo</a>, and <a href="#">OrderInfoFilters</a>.</p> <p>Added information related to Extended Fields in <a href="#">OrderResponse</a> and <a href="#">SubscribeOrderInfoResponse</a>.</p> <p>Added new section <a href="#">Appendix A: Order Event Types</a>.</p> |
| v2021.2.0.0 | Mar 31, 2021 | <p>Added the <a href="#">GetTodaysActivityJson</a> API. Applied order filters to TodaysActivity APIs and added user defined timeout intervals for Utility APIs.</p>  |
| v2021.1.0.0 | Feb 02, 2021 | <p>Added the following API and Custom Data Type:</p> <ul style="list-style-type: none"> <li><a href="#">GetStrategyList</a></li> <li><a href="#">StrategyListRow</a></li> </ul>  |
| v2020.9.0.0 | Dec 18, 2020 | <p>Added the <a href="#">SubscribeHeartBeat</a> API.</p>   |
| v2020.8.0.0 | Nov 25, 2020 | <p>Added the following APIs and Custom Data Type:</p> <ul style="list-style-type: none"> <li><a href="#">ChangePasswordSRP</a></li> <li><a href="#">SubmitAllocationOrder</a></li> <li><a href="#">SubmitTradeReport</a></li> <li><a href="#">AllocationType</a></li> <li><a href="#">OrderType</a></li> <li><a href="#">TradeType</a></li> </ul>  |

| Version No. | Date         | Summary of Update                               |
|-------------|--------------|---|
| v2020.7.3.0 | Nov 10, 2020 | Updated the stable version details of EMS xAPI. |
| v2020.7.2.0 | Oct 30, 2020 | Initial release.                                |

## Introduction

The new Eze EMS xAPI platform is powered by Google's high performance gRPC framework which allows engineers to quickly build efficient and connected systems.

Clients can now seamlessly connect their proprietary applications, custom models and workflows, built in any gRPC supported language - C/C++, Python, Java, Go, or Ruby, to name a few - with Eze EMS to leverage best-in-class global execution capabilities providing comprehensive trading, data, and risk solutions. Eze EMS xAPI is supported on both Windows and Linux.

While language-agnostic, SS&C Eze expects many clients will want to connect their systems to Eze EMS via Python using the gRPC framework. Python has gained immense traction in the quant trading community, in particular, as it makes it easy to build intricate models due to the availability of scientific libraries. Moreover, it is easier to write and evaluate algo trading structures in Python and the code can be extended to dynamic algorithms for trading.

## Eze EMS xAPI Basics

The Eze EMS xAPI operates in conjunction with your existing Eze EMS account permissioning and entitlements. **The Eze EMS xAPI is not a standalone data feed application that is provided to you independent of the Eze EMS.** Please contact Eze Client Service if you need to request or make changes to appropriate permissions for your account.

## Eze EMS xAPI Use Restrictions

As an Eze EMS xAPI user, you are prohibited from retransmitting any Eze Market Data using the Eze EMS xAPI, without the express prior written consent of Eze EMS and the exchanges or other third-party data providers (referred to as **"Sources"** in your end user agreement). Any unauthorized retransmission of Eze Market Data is a breach of your end user agreement and will cause immediate termination of your use of the Eze EMS, Eze Market Data, and the Eze EMS xAPI.

Any non-display usage of Eze Market Data, such as use of real-time data in algorithmic trading or program trading, is subject to the rules, regulations, and policies of the applicable exchanges and additional exchange fees may apply. In addition, you may have a non-display usage of Eze Market Data even if a display of real-time data occurs. Please review your Eze EMS end user agreement, and the exchanges' and third-party data providers' rules, regulations, and policies that apply to your use of the Eze EMS API (which apply to Eze EMS xAPI) and/or Eze Market Data. It is the sole responsibility of the Eze EMS xAPI user and each user receiving, directly or indirectly accessing or otherwise using Eze Market Data to determine whether your receipt, access or use is reportable and/or fee liable.

## Pre-Requisites

- The language of choice that the client wants to use. Example: Python version 3.x
- gRPC tools that contains modules such as protobuf and protoc (proto compiler) that are necessary for generating client/ stub files

- gRPC 2.27.0 and above
- Visit this link to learn about language specific pre-requisites:  
<https://grpc.io/docs/languages/>

## Version

The current stable version of Eze EMS xAPI is 2025.2.0.1873.

## Endpoint

Contact your SS&C Eze client service representative for more information on Eze EMS xAPI server address with port number.

## Resources

The following APIs are provided as part of Eze EMS xAPI:

| Order APIs                |                               |  |
|---------------------------|-------------------------------|--|
| API Name                  | Input                         | Output                                     |
| Order (Single Order APIs) |                               |  |
| CancelSingleOrder         | CancelSingleOrderRequest      | CancelSingleOrderResponse                  |
| ChangeSingleOrder         | ChangeSingleOrderRequest      | ChangeSingleOrderResponse                  |
| SubmitAllocationOrder     | SubmitAllocationOrderRequest  | SubmitAllocationOrderResponse              |
| SubmitBookTrade           | SubmitBookTradeRequest        | SubmitBookTradeResponse                    |
| SubmitSingleOrder         | SubmitSingleOrderRequest      | SubmitSingleOrderResponse                  |
| SubmitTradeReport         | SubmitTradeReportRequest      | SubmitTradeReportResponse                  |
| Order (Pair Order APIs)   |                               |  |
| CancelPairOrder           | CancelPairOrderRequest        | CancelPairOrderResponse                    |
| ChangePairOrder           | ChangePairOrderRequest        | ChangePairOrderResponse                    |
| SubmitPairOrder           | SubmitPairOrderRequest        | SubmitPairOrderResponse                    |
| Order (Basket Order APIs) |                               |  |
| SubmitBasketOrder         | BasketOrderRequest            | BasketOrderResponse                        |
| Order (Miscellaneous)     |                               |  |
| GetOrderDetailByDateRange | OrderDetailByDateRangeRequest | stream<br>OrderDetailByDateRangeResponse   |
| GetOrderDetailById        | OrderDetailByIdRequest        | OrderDetailByIdResponse                    |
| GetUserAccounts           | UserAccountsRequest           | UserAccountsResponse                       |
| SubmitSeedData            | SubmitSeedDataRequest         | SubmitSeedDataResponse                     |
| SubscribeOrderInfoJson    | SubscribeOrderInfoJsonRequest | stream Sub-<br>scribeOrderInfoJsonResponse |

| MarketData                           |   |  |
|--------------------------------------|---|--|
| API Name                             | Input   | Output   |
| AddSymbols                           | AddSymbolsRequest                             | AddSymbolsResponse                             |
| GetDailyWeeklyMonthlyBars            | DailyWeeklyMonthlyBarsRequest                 | DailyWeeklyMonthlyBarsResponse                 |
| GetDe-<br>scriptionFromOptionSymbol  | Descrip-<br>tionFromOptionSymbolRequest       | Descrip-<br>tionFromOptionSymbolResponse       |
| GetIntradayBars                      | IntradayBarsRequest                           | IntradayBarsResponse                           |
| GetLevel1MarketData                  | Level1MarketDataRecordRequest                 | Level1MarketDataRecordResponse                 |
| GetOptionChainForUnderlier           | OptionChainRequest                            | OptionChainResponse                            |
| GetOptionsAndGreekData               | OptionsAndGreekDataRequest                    | OptionsAndGreekDataResponse                    |
| GetOp-<br>tionSymbolFromDescription  | OptionSym-<br>bolFromDescriptionRequest       | OptionSym-<br>bolFromDescriptionResponse       |
| GetSecurityData                      | SecurityDataRequest                           | SecurityDataResponse                           |
| GetSym-<br>bolFromAlternateSymbology | Sym-<br>bolFromAl-<br>ternateSymbologyRequest | Sym-<br>bolFromAl-<br>ternateSymbologyResponse |
| GetSymbolReferenceData               | SymbolReferenceDataRequest                    | SymbolReferenceDataResponse                    |
| GetSymbolsFromCompanyName            | Sym-<br>bolsFromCompanyNameRequest            | Sym-<br>bolsFromCompanyNameResponse            |
| GetTickData                          | TickDataRequest                               | TickDataResponse                               |
| RemoveSymbols                        | RemoveSymbolsRequest                          | RemoveSymbolsResponse                          |
| SubscribeLevel1Ticks                 | Level1MarketDataRequest                       | stream Level1MarketDataResponse                |
| SubscribeLevel2Ticks                 | Level2MarketDataRequest                       | stream Level2MarketDataResponse                |
| SubscribeTickData                    | SubscribeTickDataRequest                      | stream SubscribeTickDataResponse               |
| UnSubscribeLevel1Data                | UnSubscribeLevel1DataRequest                  | UnSubscribeLevel1DataResponse                  |
| UnSubscribeLevel2Data                | UnSubscribeLevel2DataRequest                  | UnSubscribeLevel2DataResponse                  |
| UnSubscribeTickData                  | UnSubscribeTickDataRequest                    | UnSubscribeTickDataResponse                    |

| Utilities                         |                                       |   |
|-----------------------------------|---------------------------------------|---|
| API Name                          | Input                                 | Output                                    |
| Connect                           | ConnectRequest                        | ConnectResponse                           |
| Disconnect                        | DisconnectRequest                     | DisconnectResponse                        |
| GetStrategyList                   | StrategyListRequest                   | StrategyListResponse                      |
| GetTodaysActivity                 | TodaysActivityRequest                 | TodaysActivityResponse                    |
| GetTodaysActivityJson             | TodaysActivityJsonRequest             | TodaysActivityJsonResponse                |
| GetTodaysBalances                 | TodaysBalancesRequest                 | TodaysBalancesResponse                    |
| GetTodaysBrokenDownPos-<br>itions | TodaysBrokenDownPos-<br>itionsRequest | TodaysBrokenDownPos-<br>itionsResponse    |
| GetTodaysNetPositions             | TodaysNetPositionsRequest             | TodaysNetPositionsResponse                |
| SubscribeHeartBeat                | SubscribeHeartBeatRequest             | SubscribeHeartBeatResponse                |
| SubscribeTodaysNetPositions       | SubscribeNetPositionsRequest          | stream Sub-<br>scribeNetPositionsResponse |
| UnSubscribeTodaysNetPositions     | UnSubscribeNetPositionsRequest        | UnSubscribeNetPositionsResponse           |
| Secured Remote Password           |                                       |   |
| ChangePasswordSRP                 | ChangePasswordSRPRequest              | ChangePasswordSRPResponse                 |
| CompleteLoginSrp                  | CompleteLoginSrpRequest               | CompleteLoginSrpResponse                  |
| StartLoginSrp                     | StartLoginSrpRequest                  | StartLoginSrpResponse                     |



**Note:** Only the mandatory API fields are provided in this document. Contact your SS&C Eze client service representative for a complete list of extended fields.

## Order

The following APIs are provided as part of Order:

| API Name                  | Input                         | Output                                     |
|---------------------------|-------------------------------|--|
| <b>Single Order APIs</b>  |                               |  |
| CancelSingleOrder         | CancelSingleOrderRequest      | CancelSingleOrderResponse                  |
| ChangeSingleOrder         | ChangeSingleOrderRequest      | ChangeSingleOrderResponse                  |
| SubmitAllocationOrder     | SubmitAllocationOrderRequest  | SubmitAllocationOrderResponse              |
| SubmitBookTrade           | SubmitBookTradeRequest        | SubmitBookTradeResponse                    |
| SubmitSingleOrder         | SubmitSingleOrderRequest      | SubmitSingleOrderResponse                  |
| SubmitTradeReport         | SubmitTradeReportRequest      | SubmitTradeReportResponse                  |
| <b>Pair Order APIs</b>    |                               |  |
| CancelPairOrder           | CancelPairOrderRequest        | CancelPairOrderResponse                    |
| ChangePairOrder           | ChangePairOrderRequest        | ChangePairOrderResponse                    |
| SubmitPairOrder           | SubmitPairOrderRequest        | SubmitPairOrderResponse                    |
| <b>Basket Order APIs</b>  |                               |  |
| SubmitBasketOrder         | BasketOrderRequest            | BasketOrderResponse                        |
| <b>Miscellaneous</b>      |                               |  |
| GetOrderDetailByDateRange | OrderDetailByDateRangeRequest | stream<br>OrderDetailByDateRangeResponse   |
| GetOrderDetailByOrderId   | OrderDetailByOrderIdRequest   | OrderDetailByOrderIdResponse               |
| GetOrderDetailByOrderTag  | OrderDetailByOrderTagRequest  | OrderDetailByOrderTagResponse              |
| SubmitSeedData            | SubmitSeedDataRequest         | SubmitSeedDataResponse                     |
| SubscribeOrderInfo        | SubscribeOrderInfoRequest     | stream Sub-<br>scribeOrderInfoResponse     |
| SubscribeOrderInfoJson    | SubscribeOrderInfoJsonRequest | stream Sub-<br>scribeOrderInfoJsonResponse |



## Custom Data Type

### AllocationDetails

| Field Name                 | Data Type                   | Accepted Values/Examples  |
|----------------------------|-----------------------------|---|
| AllocationDestinationRoute | string                      | Destination route for the allocated order   |
| CommissionRate             | google.protobuf.DoubleValue | Commission rate   |
| CommissionRateType         | google.protobuf.Int32Value  | Commission rate type  |
| GeneralMessage             | string                      | User provided general text  |
| NetPrice                   | google.protobuf.DoubleValue | Net price   |
| TargetAccount              | string                      | Destination account for the allocated order   |
| TargetPrice                | google.protobuf.DoubleValue | Limit price of allocated order  |
| TargetQuantity             | int32                       | Volume of the ticket if the ticket is live, or the Traded Amount if the order has been canceled before completion |

### AllocationType

| Field Name | Data Type | Accepted Values/Examples                                |
|------------|-----------|---|
| Allocation | enum      | UserSubmitAllocation = 0;<br>UserSubmitAllocationEx = 1 |

### OrderDetailsResponse

| Field Name    | Data Type | Accepted Values/Examples   |
|---------------|-----------|--|
| Buyorsell     | string    | BUY, SELL, or SELLSHORT. This field will soon be deprecated. Alternatively, you can use the field Side |
| CurrentStatus | string    | Current status of order (PENDING, LIVE, COMPLETED, or DELETED)   |

| Field Name      | Data Type                   | Accepted Values/Examples   |
|-----------------|-----------------------------|--|
| OrderId         | string                      | A unique id associated to every order. This is the identifier to lookup the specific order to modify                         |
| OrderTag        | string                      | Order tag  |
| OriginalOrderId | string                      | Original order identification code   |
| Price           | google.protobuf.DoubleValue | Limit price submitted in order   |
| PriceType       | PriceTypeEnum               | By default the price type is set to Market, in case no value is provided. Refer to the section <a href="#">PriceTypeEnum</a> |
| RefersTold      | string                      | Refers to the identification code  |
| Symbol          | string                      | Valid ticker symbol (e.g., AAPL, IBM, VOD.LSE)   |
| Type            | string                      | Order Event Type. Refer to the section <a href="#">Appendix A</a>  |
| Volume          | int32                       | Order quantity   |
| VolumeTraded    | int32                       | Volume traded so far by the order  |

## OrderInfoFilters

| Field Name               | Data Type | Accepted Values/Examples  |
|--------------------------|-----------|---|
| IncludeClerkReject       | bool      | Boolean flag to filter the order responses based on order type ClerkReject  |
| IncludeExchangeKillOrder | bool      | Boolean flag to filter the order responses based on order type ExchangeKillOrder  |
| IncludeExecutions        | bool      | If set to <b>True</b> you get ExchangeAcceptOrder, ExchangeTradeOrder, ExchangeBustOrder events in a DataFrame with row by row format as response<br>If you wish to learn more about these order event types refer to the section <a href="#">Appendix A: Order Event Types</a> |

| Field Name    | Data Type | Accepted Values/Examples  |
|---------------|-----------|---|
| IncludeOrders | bool      | If set to <b>True</b> you get UserSubmitOrder, UserSubmitStagedOrder, UserSubmitCompoundOrder, UserSubmitChange, UserSubmitCancel, UserSubmitAllocation, UserSubmitAllocationEx, ForeignExecution order events in a DataFrame with row by row format as response If you wish to learn more about these order event types refer to the section <a href="#">Appendix A: Order Event Types</a> |

## OrderRow

| Field Name     | Data Type                   | Accepted Values/Examples                           |
|----------------|-----------------------------|--|
| AcctType       | google.protobuf.Int32Value  | Type of account for a position                     |
| AllocatedValue | google.protobuf.DoubleValue | Allocated value                                    |
| Ask            | string                      | Last ask price for symbol                          |
| AvgPrice       | google.protobuf.DoubleValue | Average execution price for order so far           |
| Bank           | string                      | Bank of trading account for selected position      |
| Basisvalue     | google.protobuf.DoubleValue | Currency value of a unit move                      |
| Bid            | string                      | Last bid price for symbol                          |
| BookId         | google.protobuf.Int32Value  | Book ID  |
| Branch         | string                      | Branch of trading account for selected position    |
| Buyorsell      | string                      | BUY, SELL, or SELLSHORT                            |
| ClaimedByClerk | string                      | Claimed by clerk                                   |
| ClientOrderId  | string                      | Client order ID                                    |
| Commission     | google.protobuf.DoubleValue | Net of commissions for today's trades for a symbol |
| CommissionCode | string                      | Broker code  |
| CommissionRate | google.protobuf.DoubleValue | Commission rate                                    |

| Field Name             | Data Type                   | Accepted Values/Examples   |
|------------------------|-----------------------------|--|
| CommissionRateType     | google.protobuf.Int32Value  | Commission rate type   |
| CrossFlag              | google.protobuf.Int32Value  | Cross flag   |
| Currency               | string                      | Currency of symbol being traded or<br>Currency of position   |
| CurrentStatus          | string                      | Current status of order (PENDING,<br>LIVE, COMPLETED, or DELETED)  |
| Customer               | string                      | Customer name of trading account<br>for selected position  |
| DateIndex              | google.protobuf.Int32Value  | Date index   |
| Deposit                | string                      | Deposit or account name for selec-<br>ted position   |
| DispName               | string                      | 'IBM' (Symbol formats are datafeed-<br>specific. Check your feed handler<br>help file for the correct format.) |
| EcnFee                 | google.protobuf.DoubleValue | ECN fee  |
| Exchange               | string                      | Three-letter acronym for listing<br>exchange   |
| ExecutionState         | google.protobuf.Int32Value  | Execution state  |
| ExpirDate              | google.protobuf.Timestamp   | Date of expiration for an option   |
| ExtendedStateFlags     | google.protobuf.Int32Value  | Extended state information for<br>internal use   |
| ExtendedStateFlags2    | google.protobuf.Int32Value  | Extended state flags 2   |
| ExternalAcceptanceFlag | google.protobuf.Int32Value  | External acceptance flag   |
| FixTraderId            | string                      | FIX trader ID  |
| FornexSourceFlags      | google.protobuf.Int32Value  | Forex source   |
| GoodFrom               | string                      | Time at which order is first valid for<br>execution  |

| Field Name              | Data Type                   | Accepted Values/Examples   |
|-------------------------|-----------------------------|--|
| GoodUntil               | string                      | Time at which order is no longer valid (DAY, DAYPLUS, or custom value supported by destination)      |
| GwBookSeqNo             | google.protobuf.Int32Value  | Gateway book sequence number   |
| Latency3                | google.protobuf.DoubleValue | Latency  |
| Latency6                | google.protobuf.DoubleValue | Latency  |
| LinkedOrderCancellation | google.protobuf.Int32Value  | Linked order cancellation  |
| LinkedOrderId           | string                      | ID of linked order   |
| LinkedOrderRelationship | google.protobuf.Int32Value  | Linked order relationship  |
| Minmove                 | google.protobuf.Int32Value  | Minimum movement   |
| NewRemoteld             | string                      | New remote identification code   |
| NewsDate                | google.protobuf.Timestamp   | Date of most recent news story   |
| NewsTime                | google.protobuf.Duration    | Time of most recent news story   |
| OmsClientType           | google.protobuf.Int32Value  | OMS client type  |
| OppositeParty           | string                      | Contra (used by ARCAEX to signify liquidity added or removed)  |
| OrderFlags              | google.protobuf.Int32Value  | Order flags  |
| OrderFlags2             | google.protobuf.Int32Value  | Order flag 2   |
| OrderId                 | string                      | A unique id associated to every order. This is the identifier to lookup the specific order to cancel |
| OrderResidual           | google.protobuf.Int32Value  | Residual volume  |
| OrderTag                | string                      | Order tag  |
| OriginalOrderId         | string                      | Original order identification code   |
| OriginalPrice           | string                      | Original price   |
| OriginalTraderId        | string                      | USERNAME@DOMAIN of the trader who placed the trade originally  |

| Field Name             | Data Type                   | Accepted Values/Examples   |
|------------------------|-----------------------------|--|
| OriginalVolume         | google.protobuf.Int32Value  | Original volume of trade   |
| PairCash               | google.protobuf.DoubleValue | Pair cash component  |
| PairImbalanceLimit     | google.protobuf.DoubleValue | Pair imbalance limit   |
| PairImbalanceLimitType | google.protobuf.Int32Value  | Pair imbalance limit type  |
| PairLeg1Benchmark      | google.protobuf.DoubleValue | Pair Leg 1 benchmark   |
| PairLeg1BenchmarkType  | google.protobuf.Int32Value  | Pair Leg 1 benchmark   |
| PairLeg2Benchmark      | google.protobuf.DoubleValue | Pair Leg 2 benchmark   |
| PairLeg2BenchmarkType  | google.protobuf.Int32Value  | Pair Leg 2 benchmark   |
| PairRatio              | google.protobuf.DoubleValue | Pair ratio   |
| PairSpread             | google.protobuf.DoubleValue | Pair spread  |
| PairSpreadType         | google.protobuf.Int32Value  | Pair spread type   |
| PairTarget             | google.protobuf.DoubleValue | Pair target  |
| Price                  | string                      | Limit price submitted in order   |
| PriceType              | string                      | By default the price type is set to <b>Market</b> , in case no value is provided. Refer to the section <a href="#">PriceTypeEnum</a> |
| Putcallind             | string                      | Option type (P = put, C = call, U = underlier) for symbol  |
| Rank                   | google.protobuf.Int32Value  | Rank   |
| Reason                 | string                      | Reason given by user or destination for changing, cancelling, or deleting the order  |
| RefersTold             | string                      | Refers to the identification code  |
| RemainingVolume        | google.protobuf.Int32Value  | Remaining volume   |
| Remoteld               | string                      | Remote ID  |
| Route                  | string                      | Route name as shown in Eze EMS.<br>Note: This field is also referred to as <b>Exit Vehicle</b>                                       |

| Field Name            | Data Type                   | Accepted Values/Examples  |
|-----------------------|-----------------------------|---|
| SharesAllocated       | google.protobuf.Int32Value  | Shares allocated  |
| ShortLocateId         | string                      | ID assigned to short sell orders as required by regulation SHO    |
| SpreadClip            | google.protobuf.DoubleValue | Spread clip   |
| SpreadClipType        | google.protobuf.Int32Value  | Spread clip type  |
| SpreadLegCount        | google.protobuf.Int32Value  | Number of legs this spread contains                               |
| SpreadLegLeanPriority | google.protobuf.Int32Value  | Spread leg lean priority  |
| SpreadLegNumber       | google.protobuf.Int32Value  | Number of legs this spread contains                               |
| SpreadLegPriceType    | google.protobuf.Int32Value  | Spread leg price type   |
| SpreadNumLegs         | google.protobuf.Int32Value  | Spread number of legs   |
| StopPrice             | string                      | Stop price  |
| StrikePrc             | string                      | Price at which option can be exercised                            |
| Styp                  | google.protobuf.Int32Value  | Security type   |
| Table                 | string                      | Table   |
| TboAccountId          | google.protobuf.Int32Value  | Account ID  |
| TicketId              | string                      | Ticket ID   |
| TimeStamp             | string                      | Timestamp applied to order by trading system                      |
| TraderCapacity        | string                      | Trader capacity   |
| TraderId              | string                      | USERNAME@DOMAIN of the message recipient                          |
| TrdTime               | google.protobuf.Duration    | Time of last trade  |
| Type                  | string                      | Order Event Type. Refer to the section <a href="#">Appendix A</a> |
| Undersym              | string                      | Underlier symbol  |
| UserMessage           | string                      | User message/notes  |

| Field Name   | Data Type                  | Accepted Values/Examples                               |
|--------------|----------------------------|--|
| UtcOffset    | google.protobuf.Int32Value | UTC offset   |
| Volume       | google.protobuf.Int32Value | Order quantity   |
| VolumeTraded | google.protobuf.Int32Value | Volume traded so far by the order                      |
| VolumeType   | string                     | Indicates the fill type of the position for the symbol |
| WorkingQty   | google.protobuf.Int32Value | Quantity out in the market                             |

## OrderType

| Field Name | Data Type | Accepted Values/Examples                     |
|------------|-----------|--|
| Type       | enum      | UserSubmitOrder = 0;<br>ForeignExecution = 1 |

## TradeType

| Field Name  | Data Type | Accepted Values/Examples                           |
|-------------|-----------|--|
| TypeofOrder | enum      | UserSubmitTradeReport = 0;<br>ForeignExecution = 1 |

## CancelPairOrder

The **CancelPairOrderRequest** object is used as an input in **CancelPairOrder** API. This API is used to cancel a pair order using its order ID.

## CancelPairOrderRequest

| Field Name | Required? | Data Type | Accepted Values/Examples   |
|------------|-----------|-----------|--|
| OrderId    | Yes       | string    | A unique id associated to every order. This is the identifier to lookup the specific order to cancel. Note: In case of <b>CancelPairOrder</b> the value of OrderId will be that of the <b>Pair</b> and not that of the individual orders |
| UserToken  | Yes       | string    | A server generated GUID that is given as response to the client during the first login   |



## CancelPairOrderResponse

| Field Name      | Data Type             | Retrieves   |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a>   |
| OptionalFields  | map<string, string>   | This is additional information given to the client in cases of failure. The field OptionalFields ["ErrorMessage"] would contain the reason for error or exception |
| ServerResponse  | string                | Success: In case the invoked API executes successfully on the server side<br>Failed: In case the invoked API throws an error or lands in an exception             |

## CancelSingleOrder

The **CancelSingleOrderRequest** object is used as an input in **CancelSingleOrder** API. This API is used to cancel a single order using its order ID.

## CancelSingleOrderRequest

| Field Name | Required? | Data Type | Accepted Values/Examples   |
|------------|-----------|-----------|--|
| OrderId    | Yes       | string    | A unique id associated to every order. This is the identifier to lookup the specific order to cancel |
| UserToken  | Yes       | string    | A server generated GUID that is given as response to the client during the first login               |

## CancelSingleOrderResponse

| Field Name      | Data Type             | Retrieves   |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a>   |
| OptionalFields  | map<string, string>   | This is additional information given to the client in cases of failure. The field OptionalFields ["ErrorMessage"] would contain the reason for error or exception |

| Field Name     | Data Type | Retrieves   |
|----------------|-----------|---|
| ServerResponse | string    | Success: In case the invoked API executes successfully on the server side<br>Failed: In case the invoked API throws an error or lands in an exception |

## ChangePairOrder

The **ChangePairOrderRequest** object is used as an input in **ChangePairOrder** API. This API can be used to modify a broker specific pair algo order using its order ID.

### ChangePairOrderRequest

| Field Name    | Required? | Data Type | Accepted Values/Examples  |
|---------------|-----------|-----------|---|
| Leg1_Quantity | No        | int32     | Value > 0   |
| Leg1OrderId   | Yes       | string    | A unique id associated to every order. This is the identifier to lookup the specific Leg1 order to modify |
| Leg2_Quantity | No        | int32     | Value > 0   |
| Leg2OrderId   | Yes       | string    | A unique id associated to every order. This is the identifier to lookup the specific Leg2 order to modify |
| PairOrderId   | Yes       | string    | A unique id associated to every order. This is the identifier to lookup the specific pair order to modify |
| UserToken     | Yes       | string    | A server generated GUID that is given as response to the client during the first login                    |

### ChangePairOrderResponse

| Field Name      | Data Type             | Retrieves   |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a>   |
| OptionalFields  | map<string, string>   | This is additional information given to the client in cases of failure. The field OptionalFields ["ErrorMessage"] would contain the reason for error or exception |

| Field Name     | Data Type | Retrieves   |
|----------------|-----------|---|
| ServerResponse | string    | Success: In case the invoked API executes successfully on the server side<br>Failed: In case the invoked API throws an error or lands in an exception |

## ChangeSingleOrder

The **ChangeSingleOrderRequest** object is used as an input in **ChangeSingleOrder** API. This API can be used to modify the parameters (volume, price type, expiration type etc.) of a single order using its order ID.

### ChangeSingleOrderRequest

| Field Name     | Required? | Data Type                   | Accepted Values/Examples  |
|----------------|-----------|-----------------------------|---|
| ExpirationDate | No        | google.protobuf.Timestamp   | Date at which order is no longer valid  |
| GoodFrom       | No        | google.protobuf.Timestamp   | Time at which order is first valid for execution  |
| OrderId        | Yes       | string                      | A unique id associated to every order. This is the identifier to lookup the specific order to modify  |
| OrderTag       | No        | string                      | Order tag   |
| Price          | No        | google.protobuf.DoubleValue | Limit price submitted in order  |
| PriceType      | No        | PriceTypeEnum               | By default the price type is set to <b>Market</b> , in case no value is provided. Refer to the section <a href="#">PriceTypeEnum</a>  |
| Quantity       | No        | int32                       | Value > 0   |
| StopPrice      | No        | google.protobuf.DoubleValue | Stop price  |
| TimeInForce    | No        | ExpirationType              | Time or date at which order is no longer valid. In case no value is provided, <b>DAY</b> expiration type is set by default. Refer to the section <a href="#">ExpirationType</a> |
| UserMessage    | No        | string                      | User message/notes  |

| Field Name | Required? | Data Type | Accepted Values/Examples   |
|------------|-----------|-----------|--|
| UserToken  | Yes       | string    | A server generated GUID that is given as response to the client during the first login |

## ChangeSingleOrderResponse

| Field Name      | Data Type             | Retrieves   |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a>   |
| OptionalFields  | map<string, string>   | This is additional information given to the client in cases of failure. The field OptionalFields ["ErrorMessage"] would contain the reason for error or exception |
| ServerResponse  | string                | Success: In case the invoked API executes successfully on the server side<br>Failed: In case the invoked API throws an error or lands in an exception             |

## GetOrderDetailByDateRange

The **OrderDetailByDateRangeRequest** object is used as an input in **GetOrderDetailByDateRange** API. This API is used to fetch list of orders placed between the given date range. The maximum date range that can be provided in a single request is three months. Order detail history is maintained up to three years.

## OrderDetailByDateRangeRequest

| Field Name | Required? | Data Type                            | Accepted Values/Examples   |
|------------|-----------|--------------------------------------|--|
| EndDate    | Yes       | google.protobuf.Timestamp<br>EndDate | Indicate the end date for your order search query. Response to this query contains orders till the EndDate         |
| EndTime    | No        | google.protobuf.Duration<br>EndTime  | Provide the end time for your order search query. In case none is given, by default EndTime is taken as "23:59:59" |

| Field Name       | Required? | Data Type                              | Accepted Values/Examples   |
|------------------|-----------|--|--|
| StartDate        | Yes       | google.protobuf.Timestamp<br>StartDate | Indicate the start date for your order search query. Response to this query contains orders originating from StartDate |
| StartTime        | No        | google.protobuf.Duration<br>StartTime  | Provide the start time for your order search query. In case none is given, by default StartTime is taken as "00:00:00" |
| TimeoutInSeconds | No        | int32                                  | Time out interval for the API request  |
| UserToken        | Yes       | string                                 | A server generated GUID that is given as response to the client during the first login                                 |

## OrderDetailByDateRangeResponse

| Field Name      | Data Type             | Retrieves   |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure)<br>Refer to the section <a href="#">ServerAcknowledgement</a> |
| OrderDetail     | string                | <a href="#">OrderInfo</a> object is retrieved in JSON format  |

## GetOrderDetailByOrderId

The **OrderDetailByOrderIdRequest** object is used as an input in **GetOrderDetailByOrderId** API. This API is used to fetch order details by providing order ID. You can fetch the order details ranging back up to three years.

## OrderDetailByOrderIdRequest

| Field Name | Required? | Data Type | Accepted Values/Examples   |
|------------|-----------|-----------|--|
| OrderId    | Yes       | string    | A unique id associated to every order  |
| UserToken  | Yes       | string    | A server generated GUID that is given as response to the client during the first login |

## OrderDetailByOrderIdResponse

| Field Name      | Data Type                      | Retrieves  |
|-----------------|--------------------------------|--|
| OrderDetails    | repeated Order-DetailsResponse | Refer to the section <a href="#">OrderDetailsResponse</a>  |
| Acknowledgement | ServerAcknowledgement          | Response from the server (success or failure)<br>Refer to the section <a href="#">Server-Acknowledgement</a> |

## GetUserAccounts

The **UserAccountsRequest** object is used as an input in **GetUserAccounts** API. This API is used to fetch all the user accounts linked to your account in Eze EMS.

### UserAccountsRequest

| Field Name | Required? | Data Type | Accepted Values/Examples   |
|------------|-----------|-----------|--|
| UserToken  | Yes       | string    | A server generated GUID that is given as response to the client during the first login |

### UserAccountsResponse

| Field Name      | Data Type             | Retrieves  |
|-----------------|-----------------------|--|
| Accounts        | map<string, string>   | This provides a list of all existing user accounts for the requested client. Example: <Account0, "TAL;TEST;USER1;TRADE"><Account1, "TAL;TEST;USER2;NEUTRAL"> |
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a>  |

## SubmitAllocationOrder

The **SubmitAllocationOrderRequest** object is used as an input in **SubmitAllocationOrder** API. This API is used to allocate partial or full order volume from your account to multiple sub-accounts by sending allocation instructions over Allocations API.

## SubmitAllocationOrderRequest

| Field Name       | Required? | Data Type                   | Accepted Values/Examples  |
|------------------|-----------|-----------------------------|---|
| Exchange         | Yes       | string                      | Three-letter acronym for listing exchange   |
| OrderId          | Yes       | string                      | A unique id associated to every order. This is the identifier to lookup the specific order to allocate            |
| OrderTypes       | Yes       | OrderType                   | Refer to the section <a href="#">Order-Type</a>   |
| SourceAccount    | Yes       | string                      | Source account for the allocated order  |
| Symbol           | Yes       | string                      | Valid ticker symbol (e.g., AAPL, IBM, VOD.LSE)  |
| TargetAccount    | Yes       | string                      | Destination account for the allocated order   |
| TargetPrice      | No        | google.protobuf.DoubleValue | Limit price of allocated order  |
| TargetQuantity   | Yes       | int32                       | Volume of the ticket if the ticket is live, or the Traded Amount if the order has been canceled before completion |
| TypeOfAllocation | Yes       | AllocationType              | Refer to the section <a href="#">AllocationType</a>   |
| UserToken        | Yes       | string                      | A server generated GUID that is given as response to the client during the first login                            |

## SubmitAllocationOrderResponse

| Field Name      | Data Type             | Retrieves   |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a> |

| Field Name     | Data Type           | Retrieves   |
|----------------|---------------------|---|
| OptionalFields | map<string, string> | This is additional information given to the client in cases of failure. The field OptionalFields ["ErrorMessage"] would contain the reason for error or exception |
| ServerResponse | string              | Success: In case the invoked API executes successfully on the server side<br>Failed: In case the invoked API throws an error or lands in an exception             |

## SubmitBasketOrder

The **BasketOrderRequest** object is used as an input in **SubmitBasketOrder** API. Using this API you can stage and execute a basket of orders in EMS xAPI.

### BasketOrderRequest

| Field Name | Required? | Data Type          | Accepted Values/Examples   |
|------------|-----------|--------------------|--|
| Orders     | Yes       | repeated Order-Row | Refer to the section <a href="#">OrderRow</a>  |
| UserToken  | Yes       | string             | A server generated GUID that is given as response to the client during the first login |

### BasketOrderResponse

| Field Name      | Data Type             | Retrieves   |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a>   |
| OptionalFields  | map<string, string>   | This is additional information given to the client in cases of failure. The field OptionalFields ["ErrorMessage"] would contain the reason for error or exception |
| ServerResponse  | string                | Success: In case the invoked API executes successfully on the server side<br>Failed: In case the invoked API throws an error or lands in an exception             |



## SubmitBookTrade

The **SubmitBookTradeRequest** object is used as an input in **SubmitBookTrade** API. This API can be used to fetch post trade details (e.g., commission, commission type, allocations, allocated quantity etc.) using the order ID.

### SubmitBookTradeRequest

| Field Name    | Required? | Data Type                  | Accepted Values/Examples  |
|---------------|-----------|----------------------------|---|
| AllocDetails  | Yes       | repeated AllocationDetails | Refer to the section <a href="#">AllocationDetails</a>  |
| OrderId       | Yes       | string                     | A unique ID associated with each order. This is the identifier to lookup the specific order to modify |
| OrderTag      | Yes       | string                     | Order tag   |
| SourceAccount | Yes       | string                     | Source account for the allocated order  |
| UserToken     | Yes       | string                     | A server generated GUID that is given as response to the client during the first login                |

### SubmitBookTradeResponse

| Field Name      | Data Type             | Retrieves   |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a>   |
| OptionalFields  | map<string, string>   | This is additional information given to the client in cases of failure. The field OptionalFields ["ErrorMessage"] would contain the reason for error or exception |
| ServerResponse  | string                | Success: In case the invoked API executes successfully on the server side<br>Failed: In case the invoked API throws an error or lands in an exception             |

## SubmitPairOrder

The **SubmitPairOrderRequest** object is used as an input in **SubmitPairOrder** API. This API is used to place a broker specific pair algo order. A Pair order is a multi-leg (two) order, these legs are sent out to the exchange or broker as one unit.

## SubmitPairOrderRequest

| Field Name    | Required? | Data Type | Accepted Values/Examples  |
|---------------|-----------|-----------|---|
| Account       | Yes       | string    | Semi-colon separated values that represent either Trade or Neutral accounts the user has permission to e.g., TAL;TEST;USER1;TRADE or TAL;TEST;USER2;NEUTRAL |
| ClaimRequire  | No        | bool      | TRUE or FALSE (Note: setting TRUE value envisages a user running Eze EMS who then claims the Order so it can switch from Pending to Live State)             |
| Leg1_Quantity | Yes       | int32     | Value > 0   |
| Leg1_Side     | Yes       | string    | BUY, SELL, SELLSHORT  |
| Leg1_Symbol   | Yes       | string    | Valid ticker symbol (e.g., AAPL, IBM, VOD.LSE)  |
| Leg2_Quantity | Yes       | int32     | Value > 0   |
| Leg2_Side     | Yes       | string    | BUY, SELL, SELLSHORT  |
| Leg2_Symbol   | Yes       | string    | Valid ticker symbol (e.g., AAPL, IBM, VOD.LSE)  |
| OrderTag      | No        | string    | Order tag   |
| Route         | Yes       | string    | Route name as shown in Eze EMS. Note: This field is also referred to as <b>Exit Vehicle</b>   |
| Staged        | No        | bool      | TRUE or FALSE (Note: in order to send a staged order, this field becomes mandatory and has to be set as TRUE only)  |
| TicketId      | No        | string    | Ticket ID   |
| UserToken     | Yes       | string    | A server generated GUID that is given as response to the client during the first login  |

## SubmitPairOrderResponse

| Field Name      | Data Type             | Retrieves   |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a> |

| Field Name     | Data Type           | Retrieves   |
|----------------|---------------------|---|
| OptionalFields | map<string, string> | This is additional information given to the client in cases of failure. The field OptionalFields ["ErrorMessage"] would contain the reason for error or exception |
| ServerResponse | string              | Success: In case the invoked API executes successfully on the server side<br>Failed: In case the invoked API throws an error or lands in an exception             |

## SubmitSeedData

The **SubmitSeedDataRequest** object is used as an input in **SubmitSeedData** API. This API is used to validate and synchronize the symbol with exchange and seed the symbol with your account initially, when you are trying to use a symbol for the first time on your account.

### SubmitSeedDataRequest

| Field Name | Required? | Data Type | Accepted Values/Examples  |
|------------|-----------|-----------|---|
| Account    | Yes       | string    | Semi-colon separated values that represent either Trade or Neutral accounts the user has permission to e.g., TAL;TEST;USER1;TRADE or TAL;TEST;USER2;NEUTRAL |
| Symbol     | Yes       | string    | Valid ticker symbol (e.g., AAPL, IBM, VOD.LSE)  |
| UserToken  | Yes       | string    | A server generated GUID that is given as response to the client during the first login  |

### SubmitSeedDataResponse

| Field Name      | Data Type             | Retrieves   |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a>   |
| OptionalFields  | map<string, string>   | This is additional information given to the client in cases of failure. The field OptionalFields ["ErrorMessage"] would contain the reason for error or exception |

| Field Name     | Data Type | Retrieves   |
|----------------|-----------|---|
| ServerResponse | string    | Success: In case the invoked API executes successfully on the server side<br>Failed: In case the invoked API throws an error or lands in an exception |

## SubmitSingleOrder

The **SubmitSingleOrderRequest** object is used as an input in **SubmitSingleOrder** API. This API is used to place a single leg buy/sell order (either staged or live).

### SubmitSingleOrderRequest

| Field Name     | Required? | Data Type                   | Accepted Values/Examples  |
|----------------|-----------|-----------------------------|---|
| Account        | Yes       | string                      | Semi-colon separated values that represent either Trade or Neutral accounts the user has permission to e.g.,<br>TAL;TEST;USER1;TRADE or<br>TAL;TEST;USER2;NEUTRAL |
| ClaimRequire   | No        | bool                        | TRUE or FALSE (Note: setting TRUE value envisages a user running Eze EMS who then claims the Order so it can switch from Pending to Live State)                   |
| ExpirationDate | No        | google.protobuf.Timestamp   | Date at which order is no longer valid  |
| GoodFrom       | No        | google.protobuf.Timestamp   | Time at which order is first valid for execution  |
| OrderTag       | No        | string                      | Order tag   |
| Price          | No        | google.protobuf.DoubleValue | Limit price submitted in order  |

| Field Name              | Required? | Data Type     | Accepted Values/Examples  |
|-------------------------|-----------|---------------|---|
| PriceType               | No        | PriceTypeEnum | By default the price type is set to <b>Market</b> , in case no value is provided. Refer to the section <a href="#">PriceTypeEnum</a>  |
| Quantity                | Yes       | int32         | Value > 0   |
| ReturnResult            | No        | bool          | If set to <b>True</b> , a current snapshot of all the order event fields is retrieved   |
| ReturnResultTimeOutInMs | No        | int32         | If set to <b>True</b> , fetches the results at the defined time out interval in milli seconds.<br>If set to <b>True</b> , but no specific value is defined, the default server value (e.g., "RequestTimeOutLimit": 10000) is used.  |
| Route                   | Yes       | string        | Route name as shown in Eze EMS. Note: This field is also referred to as <b>Exit Vehicle</b>   |
| Side                    | Yes       | string        | BUY, SELL, SELLSHORT<br>Note: To send an order with side SELLSHORT, the extended field <b>SHORT_LOCATE_ID</b> must be assigned. The <b>SHORT_LOCATE_ID</b> is an ID assigned to short sell orders. Similarly, to send a <b>Buy To Cover</b> order, set the side to <b>BUY</b> and assign the extended field <b>TO_OPEN_POS</b> to the required volume |

| Field Name  | Required? | Data Type                   | Accepted Values/Examples   |
|-------------|-----------|-----------------------------|--|
| Staged      | No        | bool                        | TRUE or FALSE (Note: in order to send a staged order, this field becomes mandatory and has to be set as TRUE only)   |
| StopPrice   | No        | google.protobuf.DoubleValue | Stop price   |
| Symbol      | Yes       | string                      | Valid ticker symbol (e.g., AAPL, IBM, VOD.LSE)   |
| TicketId    | No        | string                      | Ticket ID  |
| TimeInForce | No        | ExpirationType              | Time or date at which order is no longer valid. In case no value is provided, DAY expiration type is set by default. Refer to the section <a href="#">ExpirationType</a> |
| UserMessage | No        | string                      | User message/notes   |
| UserToken   | Yes       | string                      | A server generated GUID that is given as response to the client during the first login   |

## SubmitSingleOrderResponse

| Field Name      | Data Type             | Retrieves  |
|-----------------|-----------------------|--|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a>  |
| OptionalFields  | map<string, string>   | This is additional information given to the client in cases of fail-ure. The field OptionalFields ["ErrorMessage"] would contain the reason for error or exception |
| OrderDetails    | OrderDetailsResponse  | Refer to the section <a href="#">OrderDetailsResponse</a>  |

| Field Name     | Data Type | Retrieves   |
|----------------|-----------|---|
| ServerResponse | string    | Success: In case the invoked API executes successfully on the server side<br>Failed: In case the invoked API throws an error or lands in an exception |

## SubmitTradeReport

The **SubmitTradeReportRequest** object is used as an input in **SubmitTradeReport** API. This API allows you to update execution and fills info of an orders manually. Only the orders with **Foreign Execution** flag are reported to exchange/clearing firm.

### SubmitTradeReportRequest

| Field Name | Required? | Data Type | Accepted Values/Examples   |
|------------|-----------|-----------|--|
| Account    | Yes       | string    | Semi-colon separated values that represent either Trade or Neutral accounts the user has permission to e.g., TAL;TEST;USER1;TRADE or TAL;TEST;USER2;NEUTRAL  |
| OrderType  | Yes       | TradeType | Refer to the section <a href="#">TradeType</a>   |
| Quantity   | Yes       | int32     | Value > 0  |
| Route      | Yes       | string    | Route name as shown in Eze EMS. Note: This field is also referred to as <b>Exit Vehicle</b>  |
| Side       | Yes       | string    | BUY, SELL, SELLSHORT Note: To send an order with side SELLSHORT, the extended field <b>SHORT_LOCATE_ID</b> must be assigned. The <b>SHORT_LOCATE_ID</b> is an ID assigned to short sell orders. Similarly, to send a <b>Buy To Cover</b> order, set the side to <b>BUY</b> and assign the extended field <b>TO_OPEN_POS</b> to the required volume |
| Symbol     | Yes       | string    | Valid ticker symbol (e.g., AAPL, IBM, VOD.LSE)   |
| UserToken  | Yes       | string    | A server generated GUID that is given as response to the client during the first login   |

## SubmitTradeReportResponse

| Field Name      | Data Type             | Retrieves   |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a>   |
| OptionalFields  | map<string, string>   | This is additional information given to the client in cases of failure. The field OptionalFields ["ErrorMessage"] would contain the reason for error or exception |
| ServerResponse  | string                | Success: In case the invoked API executes successfully on the server side<br>Failed: In case the invoked API throws an error or lands in an exception             |

## SubscribeOrderInfo

The **SubscribeOrderInfoRequest** object is used as an input in **SubscribeOrderInfo** API. This API is used to fetch the order activity (submit, change, cancel etc.) during the day.

## SubscribeOrderInfoRequest

| Field Name                 | Required? | Data Type | Accepted Values/Examples   |
|----------------------------|-----------|-----------|--|
| ExcludeHistory             | No        | bool      | Boolean flag to exclude the historic order responses and return only the latest events |
| IncludeClerkReject         | No        | bool      | Boolean flag to filter the order responses based on order type ClerkReject             |
| IncludeExchangeAcceptOrder | No        | bool      | Boolean flag to filter the order responses based on order type ExchangeAcceptOrder     |
| IncludeExchangeTradeOrder  | No        | bool      | Boolean flag to filter the order responses based on order type ExchangeTradeOrder      |
| IncludeForeignExecution    | No        | bool      | Boolean Flag to filter the order responses based on order type ForeignExecution        |



| Field Name                     | Required? | Data Type | Accepted Values/Examples  |
|--------------------------------|-----------|-----------|---|
| IncludeUserSubmitAllocation    | No        | bool      | Boolean flag to filter the order responses based on order type<br>UserSubmitAllocation    |
| IncludeUserSubmitAllocationEx  | No        | bool      | Boolean flag to filter the order responses based on order type<br>UserSubmitAllocationEx  |
| IncludeUserSubmitCancel        | No        | bool      | Boolean flag to filter the order responses based on order type<br>UserSubmitCancel        |
| IncludeUserSubmitChange        | No        | bool      | Boolean flag to filter the order responses based on order type<br>UserSubmitChange        |
| IncludeUserSubmitCompoundOrder | No        | bool      | Boolean flag to filter the order responses based on order type<br>UserSubmitCompoundOrder |
| IncludeUserSubmitOrder         | No        | bool      | Boolean flag to filter the order responses based on order type<br>UserSubmitOrder         |
| IncludeUserSubmitStagedOrder   | No        | bool      | Boolean flag to filter the order responses based on order type<br>UserSubmitStagedOrder   |
| IncludeUserSubmitTradeReport   | No        | bool      | Boolean flag to filter the order responses based on order type<br>UserSubmitTradeReport   |
| SubscriptionLevel              | No        | enum      | FILL = 0;<br>STATUS = 1 (This Field is deprecated)  |
| UserToken                      | Yes       | string    | A server generated GUID that is given as response to the client during the first login    |

## SubscribeOrderInfoResponse

| Field Name      | Data Type                   | Retrieves   |
|-----------------|-----------------------------|---|
| Account         | string                      | Semi-colon separated values that represent either Trade or Neutral accounts the user has permission to e.g., TAL;TEST;USER1;TRADE or TAL;TEST;USER2;NEUTRAL |
| Acknowledgement | ServerAcknowledgement       | Response from the server (success or failure). Refer to the section <a href="#">Server-Acknowledgement</a>  |
| Buyorsell       | string                      | BUY, SELL, or SELLSHORT. This field will soon be deprecated. Alternatively, you can use the field <b>Side</b>   |
| ClaimedByClerk  | string                      | Claimed by clerk  |
| CurrentStatus   | string                      | Current status of order (PENDING, LIVE, COMPLETED, or DELETED)  |
| ExpirationDate  | google.protobuf.Timestamp   | Date at which order is no longer valid  |
| GoodFrom        | google.protobuf.Timestamp   | Time at which order is first valid for execution  |
| LinkedOrderId   | string                      | ID of linked order  |
| OrderId         | string                      | A unique id associated to every order. This is the identifier to lookup the specific order to cancel  |
| OrderTag        | string                      | Order tag   |
| OriginalOrderId | string                      | Original order identification code  |
| PairSpreadType  | string                      | Pair spread type  |
| Price           | google.protobuf.DoubleValue | Limit price submitted in order  |
| PriceType       | PriceTypeEnum               | By default the price type is set to <b>Market</b> , in case no value is provided. Refer to the section <a href="#">PriceTypeEnum</a>                        |
| Reason          | string                      | Reason given by user or destination for changing, cancelling, or deleting the order   |

| Field Name   | Data Type                   | Retrieves   |
|--------------|-----------------------------|---|
| RefersTold   | string                      | Refers to the identification code   |
| Route        | string                      | Route name as shown in Eze EMS. Note: This field is also referred to as <b>Exit Vehicle</b>   |
| Side         | string                      | BUY, SELL, SELLSHORT<br><br>Note: To send an order with side SELLSHORT, the extended field <b>SHORT_LOCATE_ID</b> must be assigned. The <b>SHORT_LOCATE_ID</b> is an ID assigned to short sell orders. Similarly, to send a <b>Buy To Cover</b> order, set the side to <b>BUY</b> and assign the extended field <b>TO_OPEN_POS</b> to the required volume |
| StopPrice    | google.protobuf.DoubleValue | Stop price  |
| submitTime   | google.protobuf.Timestamp   | The time when the trade was submitted   |
| Symbol       | string                      | Valid ticker symbol (e.g., AAPL, IBM, VOD.LSE)  |
| TicketId     | string                      | Ticket ID   |
| TimeInForce  | ExpirationType              | Time or date at which order is no longer valid. Refer to the section <a href="#">ExpirationType</a>   |
| TimeStamp    | string                      | Timestamp applied to order by trading system  |
| TraderId     | string                      | USERNAME@DOMAIN of the message recipient  |
| Type         | string                      | Order Event Type. Refer to the section <a href="#">Appendix A</a>   |
| UserMessage  | string                      | User message/notes  |
| Volume       | int32                       | Order quantity  |
| VolumeTraded | int32                       | Volume traded so far by the order   |

The following table provides you the Extended Fields details for Data Type **map<string, string>** used in **SubscribeOrderInfoResponse**.

| Key                 | Expected Values   |
|---------------------|---|
| AcctType            | Type of account for a position                          |
| AllocatedValue      | Allocated value   |
| Ask                 | Last ask price for symbol                               |
| AvgPrice            | Average execution price for order so far                |
| Basisvalue          | Currency value of a unit move                           |
| Bid                 | Last bid price for symbol                               |
| BLOOMBERG_CODE      | Bloomberg symbol code associated with the order         |
| BLOOMBERG_CODE_FULL | Full bloomberg symbol code                              |
| BookId              | Book ID   |
| BOOKING_TYPE        | Booking type  |
| ClientOrderId       | Client order ID   |
| Commission          | Net of commissions for today's trades for a symbol      |
| CommissionCode      | Broker code   |
| CommissionRate      | Commission rate   |
| CommissionRateType  | Commission rate type                                    |
| CrossFlag           | Cross flag  |
| Currency            | Currency of symbol being traded or Currency of position |
| DateIndex           | Date index  |
| EcnFee              | ECN fee   |
| Exchange            | Three-letter acronym for listing exchange               |
| ExecutionState      | Execution state   |
| ExtendedStateFlags  | Extended state information for internal use             |
| ExtendedStateFlags2 | Extended state flags 2                                  |
| EXTERNAL_CUSTOMER   | External customer                                       |
| EXTERNAL_TRADER     | External trader   |

| Key                     | Expected Values  |
|-------------------------|--|
| ExternalAcceptanceFlag  | External acceptance flag   |
| FixTraderId             | FIX trader ID  |
| FornexSourceFlags       | Forex source   |
| FREE_QTY                | Target quantity - Committed quantity (the amount of the ticket that has not filled and is not in the market) |
| GwBookSeqNo             | Gateway book sequence number   |
| Latency3                | Latency  |
| Latency6                | Latency  |
| LinkedOrderCancellation | Linked order cancellation  |
| LinkedOrderRelationship | Linked order relationship  |
| Minmove                 | Minimum movement   |
| NewRemoteld             | New remote identification code   |
| NewsDate                | Date of most recent news story   |
| NewsTime                | Time of most recent news story   |
| OmsClientType           | OMS client type  |
| OppositeParty           | Contra (used by ARCAEX to signify liquidity added or removed)  |
| OrderFlags              | Order flags  |
| OrderFlags2             | Order flag 2   |
| OrderResidual           | Residual volume  |
| OriginalPrice           | Original price   |
| OriginalTraderId        | USERNAME@DOMAIN of the trader who placed the trade originally  |
| OriginalVolume          | Original volume of trade   |
| PairCash                | Pair cash component  |
| PairImbalanceLimit      | Pair imbalance limit   |

| Key                    | Expected Values   |
|------------------------|---|
| PairImbalanceLimitType | Pair imbalance limit type   |
| PairLeg1Benchmark      | Pair Leg 1 benchmark  |
| PairLeg1BenchmarkType  | Pair Leg 1 benchmark  |
| PairLeg2Benchmark      | Pair Leg 2 benchmark  |
| PairLeg2BenchmarkType  | Pair Leg 2 benchmark  |
| PairRatio              | Pair ratio  |
| PairSpread             | Pair spread   |
| PairTarget             | Pair target   |
| Putcallind             | Option type (P = put, C = call, U = underlier) for symbol                                   |
| Rank                   | Rank  |
| REGION                 | Region associated with the listed exchanges for a symbol                                    |
| RemainingVolume        | Remaining volume  |
| RemoteId               | Remote ID   |
| RIC_CODE               | Reuters Instrument Code   |
| SERVER_ARRIVAL_PRICE   | Arrival price as stamped by server. Will be 0 when order arrives outside core trading hours |
| SharesAllocated        | Shares allocated  |
| ShortLocateId          | ID assigned to short sell orders as required by regulation SHO                              |
| SpreadClip             | Spread clip   |
| SpreadClipType         | Spread clip type  |
| SpreadLegCount         | Number of legs this spread contains   |
| SpreadLegLeanPriority  | Spread leg lean priority  |
| SpreadLegNumber        | Number of legs this spread contains   |
| SpreadLegPriceType     | Spread leg price type   |
| SpreadNumLegs          | Spread number of legs   |

| Key            | Expected Values  |
|----------------|--|
| StrikePrc      | Price at which option can be exercised                 |
| Styp           | Security type  |
| Table          | Table  |
| TboAccountId   | Account ID   |
| TraderCapacity | Trader capacity  |
| TRD_TIME       | Time of trade  |
| TrdTime        | Time of last trade                                     |
| Undersym       | Underlier symbol                                       |
| UtcOffset      | UTC offset   |
| VolumeType     | Indicates the fill type of the position for the symbol |
| WorkingQty     | Quantity out in the market                             |

## SubscribeOrderInfoJson

The **SubscribeOrderInfoJsonRequest** object is used as an input in **SubscribeOrderInfoJson** API. This API can stream order updates in JSON format and helps in building the DataFrame row by row.

### SubscribeOrderInfoJsonRequest

| Field Name | Required? | Data Type        | Accepted Values/Examples   |
|------------|-----------|------------------|--|
| Filters    | Yes       | OrderInfoFilters | Refer to the section <a href="#">OrderInfoFilters</a>                                  |
| UserToken  | Yes       | string           | A server generated GUID that is given as response to the client during the first login |

### SubscribeOrderInfoJsonResponse

| Field Name      | Data Type             | Retrieves   |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure)<br>Refer to the section <a href="#">ServerAcknowledgement</a> |
| OrderInfoJson   | string                | <a href="#">OrderInfo</a> object is retrieved in JSON format  |

## Utilities

The following APIs are provided as part of Utilities:

| API Name                      | Input                            | Output                               |
|-------------------------------|----------------------------------|--------------------------------------|
| ChangePasswordSRP             | ChangePasswordSRPRequest         | ChangePasswordSRPResponse            |
| CompleteLoginSrp              | CompleteLoginSrpRequest          | CompleteLoginSrpResponse             |
| Connect                       | ConnectRequest                   | ConnectResponse                      |
| Disconnect                    | DisconnectRequest                | DisconnectResponse                   |
| GetStrategyList               | StrategyListRequest              | StrategyListResponse                 |
| GetTodaysActivity             | TodaysActivityRequest            | TodaysActivityResponse               |
| GetTodaysActivityJson         | TodaysActivityJsonRequest        | TodaysActivityJsonResponse           |
| GetTodaysBalances             | TodaysBalancesRequest            | TodaysBalancesResponse               |
| GetTodaysBrokenDownPositions  | TodaysBrokenDownPositionsRequest | TodaysBrokenDownPositionsResponse    |
| GetTodaysNetPositions         | TodaysNetPositionsRequest        | TodaysNetPositionsResponse           |
| StartLoginSrp                 | StartLoginSrpRequest             | StartLoginSrpResponse                |
| SubscribeHeartBeat            | SubscribeHeartBeatRequest        | SubscribeHeartBeatResponse           |
| SubscribeTodaysNetPositions   | SubscribeNetPositionsRequest     | stream SubscribeNetPositionsResponse |
| UnSubscribeTodaysNetPositions | UnSubscribeNetPositionsRequest   | UnSubscribeNetPositionsResponse      |

## Secured Remote Password

Secured Remote Password (SRP) is a mechanism using which a client can encrypt sensitive information such as password by making use of public and private keys. By implementing the SRP support in EMS xAPI server, the clients can be equipped to send hash coded password during login.

### StartLoginSrp

The **StartLoginSrpRequest** object is used as an input in **StartLoginSrp** API. This API is used to login to EMS xAPI using the SRP method which utilizes hash coded strings to exchange the password.



## StartLoginSrpRequest

| Field Name | Required? | Data Type | Accepted Values/Examples |
|------------|-----------|-----------|--------------------------|
| Domain     | Yes       | string    | A valid domain name      |
| UserName   | Yes       | string    | A valid user name        |

## StartLoginSrpResponse

| Field Name      | Data Type             | Retrieves   |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a>   |
| Response        | string                | Success: In case the invoked API executes successfully on the server side<br>Failed: In case the invoked API throws an error or lands in an exception |
| srpb            | string                | This field is specific to SRP6 Protocol   |
| srpg            | string                | This field is specific to SRP6 Protocol   |
| srpN            | string                | This field is specific to SRP6 Protocol   |
| srpSalt         | string                | This field is specific to SRP6 Protocol   |
| srpTransactId   | string                | Unique transaction ID per user  |
| Status          | string                | Success or Failure of API call  |



**Note:** **StartLoginSrp** has to be followed by a call to **CompleteLoginSrp**. The output from **StartLoginSrp** is used as a direct/indirect input to **CompleteLoginSrp**.

## CompleteLoginSrp

The **CompleteLoginSrpRequest** object is used as an input in **CompleteLoginSrp** API. This API is used to complete login to SRP using your identity, transactionId, strEphA and strMc parameters.

## CompleteLoginSrpRequest

| Field Name | Required? | Data Type | Accepted Values/Examples                                |
|------------|-----------|-----------|---|
| Domain     | Yes       | string    | A valid domain name                                     |
| Identity   | Yes       | string    | A valid user identity (combination of user-name@domain) |

| Field Name    | Required? | Data Type | Accepted Values/Examples                                    |
|---------------|-----------|-----------|---|
| Locale        | Yes       | string    | The region the user wants to connect (e.g., AMERICAS, ASIA) |
| srpTransactId | Yes       | string    | Unique transaction ID per user                              |
| strEphA       | Yes       | string    | This field is specific to SRP6 Protocol                     |
| strMc         | Yes       | string    | This field is specific to SRP6 Protocol                     |
| UserName      | Yes       | string    | A valid user name   |

### CompleteLoginSrpResponse

| Field Name      | Data Type             | Retrieves   |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a>   |
| Response        | string                | Success: In case the invoked API executes successfully on the server side<br>Failed: In case the invoked API throws an error or lands in an exception |
| UserToken       | string                | A server generated GUID that is given as response to the client during the first login  |

### ChangePasswordSRP

The **ChangePasswordSRPRequest** object is used as an input in **ChangePasswordSRP** API. You can use this API to change your password. The updated password is applicable to both EMS xAPI and EMS.

### ChangePasswordSRPRequest

| Field Name  | Required? | Data Type | Accepted Values/Examples   |
|-------------|-----------|-----------|--|
| Domain      | Yes       | string    | A valid domain name  |
| NewPassword | Yes       | string    | Enter new password   |
| OldPassword | Yes       | string    | Enter current password   |
| TransactId  | Yes       | string    | A server generated GUID that is given as response to the client during the first login |
| UserName    | Yes       | string    | A valid user name  |

## ChangePasswordSRPResponse

| Field Name      | Data Type             | Retrieves   |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a> |
| message         | string                | Server response to change password SRP API  |
| status          | string                | A server generated GUID that is given as response to the client during the first login                    |

## Custom Data Type

### AggregatePositionRecord

| Field Name          | Data Type | Accepted Values/Examples  |
|---------------------|-----------|---|
| SoldShortQty        | double    | Total number of short shares sold for the symbol  |
| Bank                | string    | Bank of trading account for selected position   |
| BoughtAvgPrc        | double    | Average price shares bought   |
| BoughtQty           | double    | Bought order quantity   |
| Branch              | string    | Branch of trading account for selected position   |
| Customer            | string    | Customer name of trading account for selected position  |
| Deposit             | string    | Deposit or account name for selected position   |
| DispName            | string    | 'IBM' (Symbol formats are datafeed-specific. Check your feed handler help file for the correct format.) |
| IntradayAvgPrc      | double    | Intraday average price  |
| IntradayLongAvgPrc  | double    | Intraday average price long   |
| IntradayLongPos     | double    | Intraday long position  |
| IntradayPos         | double    | Intraday position   |
| IntradayShortAvgPrc | double    | Average intraday execution price for short order  |
| IntradayShortPos    | double    | Intraday short position   |
| LongAvgPrc          | double    | Average price long  |

| Field Name      | Data Type | Accepted Values/Examples                       |
|-----------------|-----------|--|
| LongPos         | double    | Long position                                  |
| ShortAvgPrc     | double    | Short average price                            |
| ShortPos        | double    | Short position                                 |
| SoldAvgPrc      | double    | Sold average price                             |
| SoldQty         | double    | Sold order quantity                            |
| SoldShortAvgPrc | double    | Sold short average price                       |
| TotalAvgPrc     | double    | Total average execution price for order so far |
| TotalPos        | double    | Total position                                 |

## BookOrder

Following is the structure of "BookOrder".

| Field Name              | Data Type              | Accepted Values/Examples                                    |
|-------------------------|------------------------|---|
| Allocations             | TodaysActivityResponse | Refer to the section <a href="#">TodaysActivityResponse</a> |
| AveragePrice            | double                 | Average execution price for order so far                    |
| CancelOrders            | TodaysActivityResponse | Refer to the section <a href="#">TodaysActivityResponse</a> |
| ChangeOrders            | TodaysActivityResponse | Refer to the section <a href="#">TodaysActivityResponse</a> |
| ExecutedVolume          | int64                  | Executed volume   |
| Executions              | TodaysActivityResponse | Refer to the section <a href="#">TodaysActivityResponse</a> |
| IsChangeOrCancelPending | bool                   | Is change or cancel pending                                 |
| Order                   | OrderResponse          | Refer to the section <a href="#">OrderResponse</a>          |
| OrderHistory            | TodaysActivityResponse | Refer to the section <a href="#">TodaysActivityResponse</a> |
| RemainingVolume         | int64                  | Remaining volume  |

## DepositRow

| Field Name        | Data Type | Accepted Values/Examples                                |
|-------------------|-----------|---|
| Bank              | string    | Bank of trading account for selected position           |
| Branch            | string    | Branch of trading account for selected position         |
| CashBalance       | double    | Cash balance  |
| CashBalanceAdj    | double    | Cash balance adjustment                                 |
| CbpRemaining      | double    | Available funds (Funds - Margin requirements)           |
| Commission        | double    | Net of commissions for today's trades for a symbol      |
| Cost              | double    | Cost  |
| Currency          | string    | Currency of symbol being traded or Currency of position |
| Customer          | string    | Customer name of trading account for selected position  |
| DaysBack          | int32     | The number of days worth of bars to retrieve            |
| Deposit           | string    | Deposit or account name for selected position           |
| EquityBalance     | double    | Equity balance  |
| ExcessEq          | double    | Excess equity   |
| ExcessEq0         | double    | Start of day excess equity                              |
| ExtraCbp          | double    | Cash credit for the account                             |
| HistScalpedProfit | double    | Historical realized P&L                                 |
| HouseExcess0      | double    | Overnight house excess                                  |
| Marketvalue0      | double    | Start of day market value                               |
| MaxOrderSize      | double    | Maximum order size allowed in an account                |
| MinBalance        | double    | Minimum amount of excess equity to trade                |
| Mmr               | double    | Maintenance margin required for a position              |
| Mmr0              | double    | Margin requirement for a overnight position             |
| Mmr0Adj           | double    | Overnight maintenance margin release amount             |

| Field Name         | Data Type | Accepted Values/Examples   |
|--------------------|-----------|--|
| Mmr0NonDaytradeAdj | double    | Adjustment to overnight maintenance margin requirement   |
| NetFees            | double    | Sum of all trading fees for a position from today's trades   |
| Orq0               | double    | Morning Orq  |
| PendingMargin      | double    | Pending margin for this order  |
| Rank               | int32     | Rank   |
| ScalpedProfit      | double    | Realized profit/loss for a position  |
| Sma0               | double    | Uploaded information for special memorandum account requirement  |
| Sma0Adj            | double    | Adjustment to overnight SMA requirement  |
| SrvPendingMargin   | double    | Margin for outstanding trades as calculated by tradeserver. Only available for accounts that are configured for this feature |
| Table              | string    | Table  |
| TboAccountId       | int32     | Account ID   |

## ExpirationType

| Field Name      | Data Type | Accepted Values/Examples   |
|-----------------|-----------|--|
| ExpirationTypes | enum      | <p>DAY = 0; GTC = 1; GTX = 2; CLO = 3; OPG = 4; IOC = 5; GTD = 6; OTHER = 7</p> <p><b>Day:</b> Expiration is set for 24 hours after order submission</p> <p><b>GTC:</b> Good Till Cancel Order. As the name suggests, this type of order will theoretically stay live forever until canceled or filled</p> <p><b>GTX:</b> An order to buy or sell that is canceled prior to the market entering into an auction, or crossing phase. Typically, markets that support continuous trading will have an auction phase at the beginning and sometimes also at the end of trading to match up orders that have been entered into the exchange's order book during the pre- or post-trading phase (i.e. where no continuous trading was available). A GTX order automatically expires immediately prior to the commencement of a crossing session, i.e. the party originating the order wants to make sure it gets filled during the current continuous auction, and any remaining open quantity should be discarded at the end of the current continuous auction period</p> <p><b>CLO:</b> Closing order. Commonly known as MOC i.e., a non-limit market order, which is executed as near to the closing price as possible- either exactly at, or slightly after the market close</p> <p><b>OPG:</b> Opening order. Commonly known as MOO i.e., an order that will be executed at the day's opening price.</p> <p><b>IOC:</b> A market or limit-price order that is to be executed in whole or in part as soon as it is placed. Any portion not executed immediately will be cancelled</p> <p><b>GTD:</b> Good Till Date order. User must specify the expiration date in the field <b>ExpirationDate</b> in order to place a GTD order</p> <p><b>OTHER:</b> Any expiry type that is not mentioned above, but is present on EMS</p> |

## OrderInfo

| Field Name      | Data Type     | Retrieves   |
|-----------------|---------------|---|
| Account         | string        | Semi colon separated values that represent either Trade or Neutral accounts the user has permission to e.g., TAL;TEST;USER1;TRADE or TAL;TEST;USER2;NEUTRAL |
| AccountType     | int           | Type of account used in trade (cash, long, or short)  |
| AveragePrice    | double        | Average execution price for order so far  |
| ClaimedByClerk  | string        | Claimed by clerk  |
| Currency        | string        | Currency of symbol being traded or Currency of position   |
| CurrentStatus   | string        | Current status of order (PENDING, LIVE, COMPLETED, or DELETED)  |
| Exchange        | string        | Three-letter acronym for listing exchange   |
| ExpirationDate  | DateTime?     | Date at which order is no longer valid  |
| GoodFrom        | string        | Time at which order is first valid for execution  |
| LinkedOrderId   | string        | ID of linked order  |
| OptionType      | string        | Option type (Put/Call) for symbol   |
| OrderEventType  | string        | Order event type (e.g., UserSubmitOrder, UserSubmitStagedOrder, UserSubmitCompoundOrder)  |
| OrderId         | string        | A unique id associated to every order. This is the identifier to lookup the specific order to cancel  |
| OrderTag        | string        | Order tag   |
| OriginalOrderId | string        | Original order identification code  |
| Price           | decimal       | Limit price submitted in order  |
| PriceType       | PriceTypeEnum | By default the price type is set to <b>Market</b> , in case no value is provided. Refer to the section <a href="#">PriceTypeEnum</a>                        |
| Reason          | string        | Reason given by user or destination for changing, cancelling, or deleting the order   |
| RefersTold      | string        | Refers to the identification code   |



| Field Name      | Data Type      | Retrieves   |
|-----------------|----------------|---|
| Route           | string         | Route name as shown in Eze EMS. Note: This field is also referred to as <b>Exit Vehicle</b>   |
| SecurityType    | int            | Security type for the symbol being traded   |
| ShortLocateId   | string         | ID assigned to short sell orders as required by regulation SHO  |
| Side            | string         | BUY, SELL, SELLSHORT<br><br>Note: To send an order with side SELLSHORT, the extended field <b>SHORT_LOCATE_ID</b> must be assigned. The <b>SHORT_LOCATE_ID</b> is an ID assigned to short sell orders. Similarly, to send a <b>Buy To Cover</b> order, set the side to <b>BUY</b> and assign the extended field <b>TO_OPEN_POS</b> to the required volume |
| StopPrice       | decimal        | Stop price  |
| StrikePrc       | decimal        | Price at which option can be exercised  |
| Symbol          | string         | Valid ticker symbol (e.g., AAPL, IBM, VOD.LSE)  |
| TicketId        | string         | Ticket ID   |
| TimeInForce     | ExpirationType | Time at which order is no longer valid. Refer to the section <a href="#">ExpirationType</a>   |
| TimeStamp       | string         | Timestamp applied to order by trading system  |
| TraderId        | string         | USERNAME@DOMAIN of the message recipient  |
| TradeTime       | TimeSpan       | Time of trade   |
| UnderlierSymbol | string         | Underlier symbol  |
| UserMessage     | string         | User message/notes  |
| Volume          | int            | Order quantity  |
| VolumeTraded    | int            | Volume traded so far by the order   |
| VolumeType      | string         | Indicates the fill type of the position for the symbol  |

## OrderResponse

| Field Name      | Data Type                   | Retrieves   |
|-----------------|-----------------------------|---|
| Account         | string                      | Semi colon separated values that represent either Trade or Neutral accounts the user has permission to e.g., TAL;TEST;USER1;TRADE or TAL;TEST;USER2;NEUTRAL |
| Buyorsell       | string                      | BUY, SELL, or SELLSHORT. This field will soon be deprecated. Alternatively, you can use the field <b>Side</b>   |
| ClaimedByClerk  | string                      | Claimed by clerk  |
| CurrentStatus   | string                      | Current status of order (e.g., PENDING, LIVE, COMPLETED, DELETED)   |
| ExpirationDate  | google.protobuf.Timestamp   | Date at which order is no longer valid  |
| GoodFrom        | google.protobuf.Timestamp   | Time at which order is first valid for execution  |
| LinkedOrderId   | string                      | ID of linked order  |
| OrderId         | string                      | A unique id associated to every order. This is the identifier to lookup the specific order to cancel  |
| OrderTag        | string                      | Order tag   |
| OriginalOrderId | string                      | Original order identification code  |
| PairSpreadType  | string                      | Pair spread type  |
| Price           | google.protobuf.DoubleValue | Limit price submitted in order  |
| PriceType       | PriceTypeEnum               | By default the price type is set to <b>Market</b> , in case no value is provided. Refer to the section <a href="#">PriceTypeEnum</a>                        |
| Reason          | string                      | Reason given by user or destination for changing, cancelling, or deleting the order   |
| RefersTold      | string                      | Refers to identification code   |
| Route           | string                      | Route name as shown in Eze EMS. Note: This field is also referred to as <b>Exit Vehicle</b>   |

| Field Name   | Data Type                   | Retrieves   |
|--------------|-----------------------------|---|
| Side         | string                      | BUY, SELL, SELLSHORT<br>Note: To send an order with side SELLSHORT, the extended field <b>SHORT_LOCATE_ID</b> must be assigned. The <b>SHORT_LOCATE_ID</b> is an ID assigned to short sell orders. Similarly, to send a <b>Buy To Cover</b> order, set the side to <b>BUY</b> and assign the extended field <b>TO_OPEN_POS</b> to the required volume |
| StopPrice    | google.protobuf.DoubleValue | Stop price  |
| submitTime   | google.protobuf.Timestamp   | The time when the trade was submitted   |
| Symbol       | string                      | Valid ticker symbol (e.g., AAPL, IBM, VOD.LSE)  |
| TicketId     | string                      | Ticket ID   |
| TimeInForce  | ExpirationType              | Time or date at which order is no longer valid. Refer to the section <a href="#">ExpirationType</a>   |
| TimeStamp    | string                      | Timestamp applied to order by trading system  |
| TraderId     | string                      | USERNAME@DOMAIN of the message recipient  |
| Type         | string                      | Order Event Type. Refer to the section <a href="#">Appendix A</a>   |
| UserMessage  | string                      | User message/notes  |
| Volume       | int32                       | Order quantity  |
| VolumeTraded | int32                       | Volume traded so far by the order   |

The following table provides you the Extended Fields details for Data Type **map<string, string>** used in OrderResponse.

| Key            | Expected Values                          |
|----------------|--|
| AcctType       | Type of account for a position           |
| AllocatedValue | Allocated value                          |
| Ask            | Last ask price for symbol                |
| AvgPrice       | Average execution price for order so far |

| Key                    | Expected Values  |
|------------------------|--|
| Basisvalue             | Currency value of a unit move  |
| Bid                    | Last bid price for symbol  |
| BLOOMBERG_CODE_FULL    | Full bloomberg symbol code   |
| BookId                 | Book ID  |
| BOOKING_TYPE           | Booking type   |
| ClientOrderId          | Client order ID  |
| Commission             | Net of commissions for today's trades for a symbol   |
| CommissionCode         | Broker code  |
| CommissionRate         | Commission rate  |
| CommissionRateType     | Commission rate type   |
| CrossFlag              | Cross flag   |
| Currency               | Currency of symbol being traded or Currency of position  |
| DateIndex              | Date index   |
| EcnFee                 | ECN fee  |
| Exchange               | Three-letter acronym for listing exchange  |
| ExecutionState         | Execution state  |
| ExtendedStateFlags     | Extended state information for internal use  |
| ExtendedStateFlags2    | Extended state flags 2   |
| EXTERNAL_CUSTOMER      | External customer  |
| EXTERNAL_TRADER        | External trader  |
| ExternalAcceptanceFlag | External acceptance flag   |
| FixTraderId            | FIX trader ID  |
| FornexSourceFlags      | Forex source   |
| FREE_QTY               | Target quantity - Committed quantity (the amount of the ticket that has not filled and is not in the market) |

| Key                     | Expected Values   |
|-------------------------|---|
| GwBookSeqNo             | Gateway book sequence number                                  |
| Latency3                | Latency   |
| Latency6                | Latency   |
| LinkedOrderCancellation | Linked order cancellation                                     |
| LinkedOrderRelationship | Linked order relationship                                     |
| Minmove                 | Minimum movement  |
| NewRemoteld             | New remote identification code                                |
| NewsDate                | Date of most recent news story                                |
| NewsTime                | Time of most recent news story                                |
| OmsClientType           | OMS client type   |
| OppositeParty           | Contra (used by ARCAEX to signify liquidity added or removed) |
| OrderFlags              | Order flags   |
| OrderFlags2             | Order flag 2  |
| OrderResidual           | Residual volume   |
| OriginalPrice           | Original price  |
| OriginalTraderId        | USERNAME@DOMAIN of the trader who placed the trade originally |
| OriginalVolume          | Original volume of trade                                      |
| PairCash                | Pair cash component   |
| PairImbalanceLimit      | Pair imbalance limit  |
| PairImbalanceLimitType  | Pair imbalance limit type                                     |
| PairLeg1Benchmark       | Pair Leg 1 benchmark  |
| PairLeg1BenchmarkType   | Pair Leg 1 benchmark  |
| PairLeg2Benchmark       | Pair Leg 2 benchmark  |
| PairLeg2BenchmarkType   | Pair Leg 2 benchmark  |

| Key                   | Expected Values  |
|-----------------------|--|
| PairRatio             | Pair ratio   |
| PairSpread            | Pair spread  |
| PairTarget            | Pair target  |
| Putcallind            | Option type (P = put, C = call, U = underlier) for symbol  |
| Rank                  | Rank   |
| REGION                | Region associated with the listed exchanges for a symbol   |
| RemainingVolume       | Remaining volume   |
| Remoteld              | Remote ID  |
| RootOrderID           | A unique ID associated with each USO child order event, helping you to trace the staged order (USSO) |
| SERVER_ARRIVAL_PRICE  | Arrival price as stamped by server. Will be 0 when order arrives outside core trading hours          |
| SharesAllocated       | Shares allocated   |
| ShortLocateld         | ID assigned to short sell orders as required by regulation SHO                                       |
| SpreadClip            | Spread clip  |
| SpreadClipType        | Spread clip type   |
| SpreadLegCount        | Number of legs this spread contains  |
| SpreadLegLeanPriority | Spread leg lean priority   |
| SpreadLegNumber       | Number of legs this spread contains  |
| SpreadLegPriceType    | Spread leg price type  |
| SpreadNumLegs         | Spread number of legs  |
| StrikePrc             | Price at which option can be exercised   |
| Styp                  | Security type  |
| Table                 | Table  |
| TboAccountld          | Account ID   |

| Key            | Expected Values  |
|----------------|--|
| TraderCapacity | Trader capacity  |
| TRD_TIME       | Time of trade  |
| TrdTime        | Time of last trade                                     |
| Undersym       | Underlier symbol                                       |
| UtcOffset      | UTC offset   |
| VolumeType     | Indicates the fill type of the position for the symbol |
| WorkingQty     | Quantity out in the market                             |
| WorkingQty     | Quantity out in the market                             |

## Position

| Field Name    | Data Type | Accepted Values/Examples   |
|---------------|-----------|--|
| AcctType      | int32     | Type of account for a position                                   |
| AverageLong   | double    | Average price long   |
| AverageLong0  | double    | The average prize of the overnight long position for the symbol  |
| AverageShort  | double    | Average price short  |
| AverageShort0 | double    | The average price of the overnight short position for the symbol |
| Bank          | string    | Bank of trading account for selected position                    |
| BoughtAvgPrc  | double    | Average price for order so far                                   |
| BoughtQty     | double    | Bought order quantity  |
| Branch        | string    | Branch of trading account for selected position                  |
| Commission    | double    | Net of commissions for today's trades for a symbol               |
| Currency      | string    | Currency of symbol being traded or Currency of position          |
| Customer      | string    | Customer name of trading account for selected position           |
| Deposit       | string    | Deposit or account name for selected position                    |

| Field Name        | Data Type | Accepted Values/Examples  |
|-------------------|-----------|---|
| DispName          | string    | 'IBM' (Symbol formats are datafeed-specific. Check your feed handler help file for the correct format.) |
| HistLongPrc0      | double    | Historic basis price of overnight long position   |
| HistScalpedProfit | double    | The sum of hist scalped profit and hist net P&L, plus any commissions and fees for the position         |
| HistShortPrc0     | double    | Historic basis price of overnight short position  |
| Longpos           | double    | Long Pposition  |
| Longpos0          | double    | Remianing overnight long position   |
| Mmr               | double    | Maintenance margin required for a position  |
| NetFees           | double    | Sum of all trading fees for a position from today's trades  |
| OrigLongpos0      | double    | Start of day long position  |
| OrigShortpos0     | double    | Start of day short position   |
| Rank              | int32     | Rank  |
| ScalpedProfit     | double    | Realized profit/loss for a position   |
| Shortpos          | double    | Short position  |
| Shortpos0         | double    | Remaining overnight short position  |
| SoldAvgPrc        | double    | Sold average price  |
| SoldQty           | double    | Total number of shares sold   |
| SoldShortAvgPrc   | double    | Average price of Short shares sold for the symbol   |
| SoldShortQty      | double    | Total number of short shares sold for the symbol  |
| Styp              | int32     | Security type   |
| Table             | string    | Table   |
| TboAccountId      | int32     | Account ID  |
| Undersym          | string    | Underlier symbol  |



## Price

| Field Name   | Data Type | Accepted Values/Examples              |
|--------------|-----------|---------------------------------------|
| Base         | uint32    | Base                                  |
| BaseCode     | int32     | Base code                             |
| DecimalValue | double    | Decimal value of the price            |
| Denominator  | int32     | Denominator                           |
| Int          | int32     | Integer value of the price            |
| IntegerValue | int32     | Integer value                         |
| IsNull       | bool      | Indicates if the price is null or not |
| Numerator    | int32     | Numerator                             |

## PriceTypeEnum

| Field Name     | Data Type | Accepted Values/Examples   |
|----------------|-----------|--|
| PriceTypesEnum | enum      | <p>Market = 0; Limit = 1; StopMarket = 2; StopLimit = 3; Other = 4;</p> <p><b>Market:</b> An order to buy/sell a security at the most recent market price</p> <p><b>Limit:</b> An order to buy a security at or below a stated price, or to sell a security at or above a stated price</p> <p><b>StopMarket:</b> This order allows the trader to lock in a certain profit and loss (P&amp;L) by deciding a specific range in which a market order can be executed. The stop market order executes a market order immediately when the “stop” price set by a trader is hit by the opposite side of the market (the ask if buying, bid if selling)</p> <p><b>StopLimit:</b> This order declares a “stop” price set by the trader. Once this price is hit by the opposite side of the market, a limit order is immediately placed at a price specified by the trader</p> <p><b>Other:</b> Any price type that is not mentioned above, but is present on EMS</p> |

## ServerAcknowledgement

| Field Name     | Data Type           | Retrieves  |
|----------------|---------------------|--|
| Message        | string              | Server response to change password SRP API   |
| OptionalFields | map<string, string> | This is additional information given to the client in cases of failure. The field OptionalFields["ErrorMessage"] would contain the reason for error or exception |
| ResponseCode   | enum                | SUCCESS = 0; WARNING = 1; FAILED = 2; ERROR = 3; TIMED_OUT = 4; SESSION_NOT_FOUND = 5  |
| ServerResponse | string              | Success: In case the invoked API executes successfully on the server side<br>Failed: In case the invoked API throws an error or lands in an exception            |

## StrategyListRow

| Field Name      | Data Type | Accepted Values/Examples     |
|-----------------|-----------|------------------------------|
| AlgoName        | string    | Algo route                   |
| FirmName        | string    | Firm name                    |
| StratCreateDate | string    | Date of creation of strategy |
| StrategyName    | string    | Name of user saved strategy  |
| UserName        | string    | A valid user name            |

## Connect

The **ConnectRequest** object is used as an input in **Connect** API. This API is used to login to EMS xAPI to connect to the server.

## ConnectRequest

| Field Name | Required? | Data Type | Accepted Values/Examples                                    |
|------------|-----------|-----------|---|
| Domain     | Yes       | string    | A valid domain name   |
| Locale     | Yes       | string    | The region the user wants to connect (e.g., AMERICAS, ASIA) |
| Password   | Yes       | string    | A valid password  |

| Field Name | Required? | Data Type | Accepted Values/Examples |
|------------|-----------|-----------|--------------------------|
| UserName   | Yes       | string    | A valid user name        |

## ConnectResponse

| Field Name      | Data Type             | Retrieves   |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a> |
| Response        | string                | A valid user token  |
| UserToken       | string                | A server generated GUID that is given as response to the client during the first login                    |

## Disconnect

The **DisconnectRequest** object is used as an input in **Disconnect** API. This API is used to disconnect EMS xAPI server and end the session.

## DisconnectRequest

| Field Name | Required? | Data Type | Accepted Values/Examples   |
|------------|-----------|-----------|--|
| UserToken  | Yes       | string    | A server generated GUID that is given as response to the client during the first login |

## DisconnectResponse

| Field Name      | Data Type             | Retrieves   |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a>   |
| OptionalFields  | map<string, string>   | This is additional information given to the client in cases of failure. The field OptionalFields ["ErrorMessage"] would contain the reason for error or exception |
| ServerResponse  | string                | Success: In case the invoked API executes successfully on the server side<br>Failed: In case the invoked API throws an error or lands in an exception             |

## GetStrategyList

The **StrategyListRequest** object is used as an input in **GetStrategyList** API. This API is used to fetch the saved strategies (on Eze EMS) mapped to a broker algo.

### StrategyListRequest

| Field Name | Required? | Data Type | Accepted Values/Examples   |
|------------|-----------|-----------|--|
| FirmName   | Yes       | string    | Firm name  |
| UserToken  | Yes       | string    | A server generated GUID that is given as response to the client during the first login |

### StrategyListResponse

| Field Name      | Data Type                | Retrieves   |
|-----------------|--------------------------|---|
| Acknowledgement | ServerAcknowledgement    | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a> |
| StrategyList    | repeated StrategyListRow | Refer to the section <a href="#">StrategyListRow</a>  |

## GetTodaysActivity

The **TodaysActivityRequest** object is used as an input in **GetTodaysActivity** API. This API is used to fetch your order related details (submit, change, cancel etc.) for the current day.

### TodaysActivityRequest

| Field Name                 | Required? | Data Type | Accepted Values/Examples   |
|----------------------------|-----------|-----------|--|
| IncludeClerkReject         | No        | bool      | Boolean flag to filter the order responses based on order type ClerkReject         |
| IncludeExchangeAcceptOrder | No        | bool      | Boolean flag to filter the order responses based on order type ExchangeAcceptOrder |
| IncludeExchangeTradeOrder  | No        | bool      | Boolean flag to filter the order responses based on order type ExchangeTradeOrder  |
| IncludeForeignExecution    | No        | bool      | Boolean flag to filter the order responses based on order type ForeignExecution    |

| Field Name                     | Required? | Data Type | Accepted Values/Examples   |
|--------------------------------|-----------|-----------|--|
| IncludeOnlyCompleted           | No        | bool      | Boolean flag to filter the order responses based on order event type Completed         |
| IncludeUserSubmitAllocation    | No        | bool      | Boolean flag to filter the order responses based on order type UserSubmitAllocation    |
| IncludeUserSubmitAllocationEx  | No        | bool      | Boolean flag to filter the order responses based on order type UserSubmitAllocationEx  |
| IncludeUserSubmitCancel        | No        | bool      | Boolean flag to filter the order responses based on order type UserSubmitCancel        |
| IncludeUserSubmitChange        | No        | bool      | Boolean flag to filter the order responses based on order type UserSubmitChange        |
| IncludeUserSubmitCompoundOrder | No        | bool      | Boolean flag to filter the order responses based on order type UserSubmitCompoundOrder |
| IncludeUserSubmitOrder         | No        | bool      | Boolean flag to filter the order responses based on order type UserSubmitOrder         |
| IncludeUserSubmitStagedOrder   | No        | bool      | Boolean flag to filter the order responses based on order type UserSubmitStagedOrder   |
| IncludeUserSubmitTradeReport   | No        | bool      | Boolean flag to filter the order responses based on order type UserSubmitTradeReport   |
| TimeoutInSeconds               | No        | int32     | Time out interval for the API request  |
| UserSubmitStagedOrderFullInfo  | No        | bool      | Boolean flag to filter all the child events associated with the parent order           |
| UserToken                      | Yes       | string    | A server generated GUID that is given as response to the client during the first login |

## TodaysActivityResponse

| Field Name      | Data Type              | Retrieves   |
|-----------------|------------------------|---|
| Acknowledgement | ServerAcknowledgement  | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a> |
| OrderRecordList | repeated OrderResponse | Refer to the section <a href="#">OrderResponse</a>  |

## GetTodaysActivityJson

The **TodaysActivityJsonRequest** object is used as an input in **GetTodaysActivityJson** API. This API provides your today's order activity details in the JSON format.

## TodaysActivityJsonRequest

| Field Name                    | Required? | Data Type | Accepted Values/Examples  |
|-------------------------------|-----------|-----------|---|
| IncludeClerkReject            | No        | bool      | Boolean flag to filter the order responses based on order type ClerkReject            |
| IncludeExchangeAcceptOrder    | No        | bool      | Boolean Flag to filter the order responses based on order type ExchangeAcceptOrder    |
| IncludeExchangeTradeOrder     | No        | bool      | Boolean flag to filter the order responses based on order type ExchangeTradeOrder     |
| IncludeForeignExecution       | No        | bool      | Boolean flag to filter the order responses based on order type ForeignExecution       |
| IncludeOnlyCompleted          | No        | bool      | Boolean flag to filter the order responses based on order event type Completed        |
| IncludeUserSubmitAllocation   | No        | bool      | Boolean flag to filter the order responses based on order type UserSubmitAllocation   |
| IncludeUserSubmitAllocationEx | No        | bool      | Boolean flag to filter the order responses based on order type UserSubmitAllocationEx |

| Field Name                     | Required? | Data Type | Accepted Values/Examples   |
|--------------------------------|-----------|-----------|--|
| IncludeUserSubmitCancel        | No        | bool      | Boolean flag to filter the order responses based on order type UserSubmitCancel        |
| IncludeUserSubmitChange        | No        | bool      | Boolean flag to filter the order responses based on order type UserSubmitChange        |
| IncludeUserSubmitCompoundOrder | No        | bool      | Boolean flag to filter the order responses based on order type UserSubmitCompoundOrder |
| IncludeUserSubmitOrder         | No        | bool      | Boolean flag to filter the order responses based on order type UserSubmitOrder         |
| IncludeUserSubmitStagedOrder   | No        | bool      | Boolean flag to filter the order responses based on order type UserSubmitStagedOrder   |
| IncludeUserSubmitTradeReport   | No        | bool      | Boolean flag to filter the order responses based on order type UserSubmitTradeReport   |
| TimeoutInSeconds               | No        | int32     | Time out interval for the API request  |
| UserToken                      | Yes       | string    | A server generated GUID that is given as response to the client during the first login |

## TodaysActivityJsonResponse

| Field Name         | Data Type             | Retrieves   |
|--------------------|-----------------------|---|
| Acknowledgement    | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a> |
| TodaysActivityJson | string                | <a href="#">OrderInfo</a> object is retrieved in JSON format  |

## GetTodaysBalances

The **TodaysBalancesRequest** object is used as an input in **GetTodaysBalances** API. This API is used to fetch your account balance details (CashBalance, EquityBalance, Margin etc.) for the current day.

## TodaysBalancesRequest

| Field Name       | Required? | Data Type | Accepted Values/Examples   |
|------------------|-----------|-----------|--|
| TimeoutInSeconds | No        | int32     | Time out interval for the API request  |
| UserToken        | Yes       | string    | A server generated GUID that is given as response to the client during the first login |

## TodaysBalancesResponse

| Field Name      | Data Type             | Retrieves   |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a> |
| DepositList     | repeated DepositRow   | Refer to the section <a href="#">DepositRow</a>   |

## GetTodaysBrokenDownPositions

The **TodaysBrokenDownPositionsRequest** object is used as an input in **GetTodaysBrokenDownPositions** API. This API is used to fetch the broken-down position details for the current day.

## TodaysBrokenDownPositionsRequest

| Field Name       | Required? | Data Type | Accepted Values/Examples  |
|------------------|-----------|-----------|---|
| BBCDFilter       | No        | string    | To filter based on a single BBCD level, BBCDFilter parameter must be added to the request before API call. Use semi-colon to separate the BBCD (e.g.; BANK;BRANCH;CUSTOMER;DEPOSIT). Example: To filter for a particular Deposit add BANK;BRANCH;CUSTOMER;DEPOSIT. Similarly, to filter for a particular Customer add BANK;BRANCH;CUSTOMER and BANK;BRANCH or BANK accordingly for Branch or Bank level filter. |
| TickerFilter     | No        | string    | To filter based on a single or multiple Symbol, TickerFilter parameter must be added to the request before API call. Use semi-colon to add more symbols (e.g.; AAPL;IBM;VOD.LSE).   |
| TimeoutInSeconds | No        | int32     | Time out interval for the API request   |



| Field Name | Required? | Data Type | Accepted Values/Examples   |
|------------|-----------|-----------|--|
| UserToken  | Yes       | string    | A server generated GUID that is given as response to the client during the first login |

## Today's Broken Down Positions Response

| Field Name      | Data Type             | Retrieves   |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a> |
| PositionRecords | repeated Position     | Refer to the section <a href="#">Position</a>   |

## GetToday's Net Positions

The **Today's Net Positions Request** object is used as an input in **GetToday's Net Positions** API. This API is used to fetch the net position details for the current day.

## Today's Net Positions Request

| Field Name       | Required? | Data Type | Accepted Values/Examples   |
|------------------|-----------|-----------|--|
| TimeoutInSeconds | No        | int32     | Time out interval for the API request  |
| UserToken        | Yes       | string    | A server generated GUID that is given as response to the client during the first login |

## Today's Net Positions Response

| Field Name             | Data Type                        | Retrieves   |
|------------------------|----------------------------------|---|
| Acknowledgement        | ServerAcknowledgement            | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a> |
| AggregatePositionsList | repeated AggregatePositionRecord | Refer to the section <a href="#">AggregatePositionRecord</a>  |

## Subscribe Heart Beat

The **Subscribe Heart Beat Request** object is used as an input in **Subscribe Heart Beat** API. On subscribing to this API, you will be intimated and requested to reconnect if an active connection with the server is terminated.

## SubscribeHeartBeatRequest

| Field Name       | Required? | Data Type | Accepted Values/Examples   |
|------------------|-----------|-----------|--|
| TimeoutInSeconds | No        | int32     | Time out interval for the API request  |
| UserToken        | Yes       | string    | A server generated GUID that is given as response to the client during the first login |

## SubscribeHeartBeatResponse

| Field Name      | Data Type             | Retrieves   |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a> |
| HeartBeatStatus | enum                  | LIVE = 0; DEAD = 1; UNKNOWN = 2   |

## SubscribeTodaysNetPositions

The **SubscribeNetPositionsRequest** object is used as an input in **SubscribeTodaysNetPositions** API. By subscribing to this API, you can retrieve real-time position updates through streaming, eliminating the need for repeated API call requests.

## SubscribeNetPositionsRequest

| Field Name       | Required? | Data Type | Accepted Values/Examples   |
|------------------|-----------|-----------|--|
| TimeoutInSeconds | No        | int32     | Time out interval for the API request  |
| UserToken        | Yes       | string    | A server generated GUID that is given as response to the client during the first login |

## SubscribeNetPositionsResponse

| Field Name         | Data Type               | Retrieves   |
|--------------------|-------------------------|---|
| Acknowledgement    | ServerAcknowledgement   | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a> |
| AggregatePositions | AggregatePositionRecord | Refer to the section <a href="#">AggregatePositionRecord</a>  |

## UnSubscribeTodaysNetPositions

The **UnSubscribeNetPositionsRequest** object is used as an input in **UnSubscribeTodaysNetPositions** API. This API is used to unsubscribe the streaming net positions data.

## UnSubscribeNetPositionsRequest

| Field Name | Required? | Data Type | Accepted Values/Examples   |
|------------|-----------|-----------|--|
| UserToken  | Yes       | string    | A server generated GUID that is given as response to the client during the first login |

## UnSubscribeNetPositionsResponse

| Field Name      | Data Type             | Retrieves   |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a> |

## MarketData

The following APIs are provided as part of MarketData:

| API Name                        | Input                               | Output                               |
|---------------------------------|-------------------------------------|--------------------------------------|
| AddSymbols                      | AddSymbolsRequest                   | AddSymbolsResponse                   |
| GetDailyWeeklyMonthlyBars       | DailyWeeklyMonthlyBarsRequest       | DailyWeeklyMonthlyBarsResponse       |
| GetDescriptionFromOptionSymbol  | DescriptionFromOptionSymbolRequest  | DescriptionFromOptionSymbolResponse  |
| GetIntradayBars                 | IntradayBarsRequest                 | IntradayBarsResponse                 |
| GetLevel1MarketData             | Level1MarketDataRecordRequest       | Level1MarketDataRecordResponse       |
| GetOptionChainForUnderlier      | OptionChainRequest                  | OptionChainResponse                  |
| GetOptionsAndGreekData          | OptionsAndGreekDataRequest          | OptionsAndGreekDataResponse          |
| GetOptionSymbolFromDescription  | OptionSymbolFromDescriptionRequest  | OptionSymbolFromDescriptionResponse  |
| GetSecurityData                 | SecurityDataRequest                 | SecurityDataResponse                 |
| GetSymbolFromAlternateSymbology | SymbolFromAlternateSymbologyRequest | SymbolFromAlternateSymbologyResponse |
| GetSymbolReferenceData          | SymbolReferenceDataRequest          | SymbolReferenceDataResponse          |
| GetSymbolsFromCompanyName       | SymbolsFromCompanyNameRequest       | SymbolsFromCompanyNameResponse       |
| GetTickData                     | TickDataRequest                     | TickDataResponse                     |
| RemoveSymbols                   | RemoveSymbolsRequest                | RemoveSymbolsResponse                |
| SubscribeLevel1Ticks            | Level1MarketDataRequest             | stream Level1MarketDataResponse      |
| SubscribeLevel2Ticks            | Level2MarketDataRequest             | stream Level2MarketDataResponse      |

| API Name              | Input                        | Output                                |
|-----------------------|------------------------------|---------------------------------------|
| SubscribeTickData     | SubscribeTickDataRequest     | stream Sub-<br>scribeTickDataResponse |
| UnSubscribeLevel1Data | UnSubscribeLevel1DataRequest | UnSubscribeLevel1DataResponse         |
| UnSubscribeLevel2Data | UnSubscribeLevel2DataRequest | UnSubscribeLevel2DataResponse         |
| UnSubscribeTickData   | UnSubscribeTickDataRequest   | UnSubscribeTickDataResponse           |

## Custom Data Type

### AlternateSymbology

| Field Name   | Data Type | Accepted Values/Examples                          |
|--------------|-----------|---|
| Symbology    | enum      | ISIN = 0; SEDOL = 1; RIC = 2; CUSIP = 3; BBG = 4; |
| SymbolOption | Symbology | Option series symbol 1                            |

### CommonBarsFields

| Field Name | Data Type         | Accepted Values/Examples   |
|------------|-------------------|--|
| AcVol1     | repeated<br>int32 | Total volume   |
| High1      | repeated<br>Price | Value of highest transaction for current session. Refer to the section <a href="#">Price</a> |
| Low1       | repeated<br>Price | Value of lowest transaction for current session. Refer to the section <a href="#">Price</a>  |
| OpenPrc    | repeated<br>Price | Open price of current session. Refer to the section <a href="#">Price</a>                    |
| Settle     | repeated<br>Price | Last settlement price. Refer to the section <a href="#">Price</a>                            |

### Interval

| Field Name | Data Type | Accepted Values/Examples           |
|------------|-----------|------------------------------------|
| Options    | enum      | DAILY = 0; WEEKLY = 1; MONTHLY = 2 |

The **Level1MarketDataRequest** object is used as an input in **GetLevel1MarketData** API. This is an unary API used to fetch level 1 market data snapshot (e.g., Bid, Ask, Last traded price). You can request one or more symbols data at a time.

## Level1MarketDataRecord

| Field Name           | Data Type                  | Accepted Values/Examples  |
|----------------------|----------------------------|---|
| ArcalImbalanceVolume | google.protobuf.Int32Value | Pre-Open Imbalance Volume (positive is Bid, negative is Offer)  |
| ArcaMatchVolume      | google.protobuf.Int32Value | Total number of shares to be executed   |
| Ask                  | Price                      | Last ask price for symbol   |
| Bid                  | Price                      | Last bid price for symbol   |
| BidTick2             | string                     | "Bid tick" for NASDAQ Short Sale Rule   |
| ChangeLast           | Price                      | Change from last price  |
| CompanyName          | string                     | Company name represented by symbol  |
| DispName             | string                     | 'IBM' (Symbol formats are datafeed-specific. Check your Feed Handler help file for the correct format.) |
| High1                | Price                      | Value of highest transaction for current session  |
| High52               | Price                      | Highest traded price for a share in the last 52 weeks   |
| IntradayHighCount    | google.protobuf.Int32Value | Number of intraday highs  |
| Low1                 | Price                      | Value of lowest transaction for current session   |
| Low52                | Price                      | Lowest traded price for a share in the last 52 weeks  |
| LrpAsk               | Price                      | NYSE liquidity replenishment point for Asks   |
| LrpBid               | Price                      | NYSE liquidity replenishment point for bids   |
| SaleConditionVolume  | google.protobuf.Int32Value | Volume of the most recent pre-market, post-market, or irregular trade                                   |

| Field Name | Data Type                   | Accepted Values/Examples          |
|------------|-----------------------------|-----------------------------------|
| SymbolDesc | string                      | Symbol description                |
| Trdprc1    | Price                       | Last traded price                 |
| Trdtim1    | google.protobuf.Duration    | Trade time                        |
| Vwap       | google.protobuf.DoubleValue | VWAP from the trade server        |
| VwapVol    | google.protobuf.Int32Value  | VWAP Volume from the trade server |

## OptionCalculationResponse

| Field Name     | Data Type                   | Retrieves  |
|----------------|-----------------------------|--|
| Delta          | google.protobuf.DoubleValue | The ratio which compares the change in price of an underlying asset to the corresponding change in the price of a derivative |
| DispName       | string                      | 'IBM' (Symbol formats are datafeed-specific. Check your feed handler help file for the correct format.)                      |
| DividendAmout1 | google.protobuf.DoubleValue | 1st dividend amount  |
| DividendAmout2 | google.protobuf.DoubleValue | 2nd dividend amount  |
| DividendAmout3 | google.protobuf.DoubleValue | 3rd dividend amount  |
| DividendAmout4 | google.protobuf.DoubleValue | 4th dividend amount  |
| DividendAmout5 | google.protobuf.DoubleValue | 5th dividend amount  |
| DividendAmout6 | google.protobuf.DoubleValue | 6th dividend amount  |
| DividendDate1  | google.protobuf.Timestamp   | 1st dividend date  |
| DividendDate2  | google.protobuf.Timestamp   | 2nd dividend date  |
| DividendDate3  | google.protobuf.Timestamp   | 3rd dividend date  |
| DividendDate4  | google.protobuf.Timestamp   | 4th dividend date  |
| DividendDate5  | google.protobuf.Timestamp   | 5th dividend date  |
| DividendDate6  | google.protobuf.Timestamp   | 6th dividend date  |

| Field Name     | Data Type                   | Retrieves  |
|----------------|-----------------------------|--|
| Gamma          | google.protobuf.DoubleValue | Rate of change for delta with respect to the underlying asset's price                |
| ImpliedVol     | google.protobuf.DoubleValue | The estimated volatility of a security's price                                       |
| Model          | google.protobuf.Int32Value  | Option model used in the calculation   |
| OptionRoot     | string                      | Option root for all exiration months and instrument types                            |
| OriginalPrice  | Price                       | Original price   |
| Premium        | google.protobuf.DoubleValue | Displays a calculated theoretical value for an option or warrant                     |
| PutCallId      | string                      | Put/Call ID  |
| Rate           | google.protobuf.DoubleValue | Interest rate used in the calculation  |
| StrikePrice    | Price                       | Price at which option can be exercised   |
| Theta          | google.protobuf.DoubleValue | A measure of a rate of decline in the value of an option due to the passage of time  |
| TimeToExpire   | google.protobuf.DoubleValue | Time to expiration   |
| UnderlierPrice | Price                       | Underlier price at time of order placement   |
| UnderSym       | string                      | Underlier symbol   |
| Vega           | google.protobuf.DoubleValue | The amount that the price of an option changes compared to a 1% change in volatility |

## OptionTypes

| Field Name | Data Type | Accepted Values/Examples |
|------------|-----------|--------------------------|
| Options    | enum      | CALL = 0; PUT = 1        |

## QuoteChainResponse

| Field Name | Data Type                   | Retrieves                     |
|------------|-----------------------------|-------------------------------|
| Basisvalue | google.protobuf.DoubleValue | Currency value of a unit move |



| Field Name    | Data Type                  | Retrieves   |
|---------------|----------------------------|---|
| CommodityName | string                     | Name of the contract for a commodity  |
| DispName      | string                     | 'IBM' (Symbol formats are datafeed-specific. Check your feed handler help file for the correct format.) |
| ExchName      | string                     | Three-letter acronym for listing exchange   |
| Minmove       | google.protobuf.Int32Value | Minimum movement  |
| Session       | google.protobuf.Int32Value | Session indicator (specified by data feed)  |
| Styp          | google.protobuf.Int32Value | Security type   |
| SymbolDesc    | string                     | Symbol description  |
| TrdUnits      | string                     | Units for expressing prices for this symbol   |

## SecurityData

| Field Name             | Data Type                   | Accepted Values/Examples  |
|------------------------|-----------------------------|---|
| Adx14d1d               | google.protobuf.DoubleValue | ADX 14d   |
| Beta                   | Price                       | Calculated using data from the S&P 500 portfolio for 12 months prior to the current month |
| BloombergCode          | string                      | Bloomberg symbol code associated with order   |
| BloombergCodeComposite | string                      | Bloomberg code composite  |
| BollingerLower21d1d    | google.protobuf.DoubleValue | Bollinger lower 21d   |
| BollingerUpper21d1d    | google.protobuf.DoubleValue | 21-day upper envelope   |
| Close5davg1d           | google.protobuf.DoubleValue | 5-day average price   |
| Close10davg1d          | google.protobuf.DoubleValue | 10-day average price  |
| Close20davg1d          | google.protobuf.DoubleValue | 20-day average price  |
| Close50davg1d          | google.protobuf.DoubleValue | 50-day average price  |
| Close200davg1d         | google.protobuf.DoubleValue | 200-day average price   |

| Field Name      | Data Type                   | Accepted Values/Examples  |
|-----------------|-----------------------------|---|
| CompanyName     | string                      | Company name represented by symbol  |
| Country         | string                      | Country of exchange where stock is listed   |
| Cusip           | string                      | ID assigned to all North American stocks and registered bonds   |
| DispName        | string                      | 'IBM' (Symbol formats are datafeed-specific. Check your feed handler help file for the correct format.) |
| Dividend        | Price                       | Last reported dividend to be paid to shareholders (per share)   |
| DividendFreqN   | google.protobuf.Int32Value  | Dividend frequency (per year)   |
| DividendRate    | Price                       | Indicated annual dividend rate based on latest payment  |
| DividendYield   | Price                       | Dividend paid per share vs. share price   |
| Divpaydate      | google.protobuf.Timestamp   | Date on which dividend is paid  |
| Earnings        | Price                       | Net income for the company represented by the selected symbol   |
| Exdivdate       | google.protobuf.Timestamp   | Ex-div date   |
| GicsIndustry    | string                      | Industry code as specified by Global Industry Classification Standard (GICS)                            |
| GicsSector      | string                      | Sector code as specified by Global Industry Classification Standard (GICS)                              |
| GicsSubindustry | string                      | Sub-industry code as specified by Global Industry Classification Standard (GICS)                        |
| High15dmax1d    | google.protobuf.DoubleValue | 15-day high   |

| Field Name        | Data Type                   | Accepted Values/Examples   |
|-------------------|-----------------------------|--|
| High52            | Price                       | Highest traded price for a share in the last 52 weeks                          |
| High52Date        | google.protobuf.Timestamp   | Date on which 52-week high was reached   |
| Hlvolatility10d1d | google.protobuf.DoubleValue | 10-day high/low volatility   |
| IsinNo            | string                      | International ID assigned to all securities foreign or domestic                |
| IssuersSectorStr  | string                      | Indicates the market sector to which the security belongs, in relation to type |
| Low15dmin1d       | google.protobuf.DoubleValue | 15-day low   |
| Low52             | Price                       | Lowest traded price for a share in the last 52 weeks                           |
| Low52Date         | google.protobuf.Timestamp   | Date on which 52-week low was reached  |
| MgSicm            | Price                       | Short interest for current month   |
| MIC               | string                      | Segmented market identification code   |
| Minusdi14d1d      | google.protobuf.DoubleValue | 14-day minus directional indicator   |
| MktCap            | Price                       | Market capitalization  |
| Peratio           | Price                       | A ratio which calculates current share price vs. per-share earnings            |
| Plusdi14d1d       | google.protobuf.DoubleValue | 14-day plus directional indicator  |
| PrimaryExchange   | string                      | Primary exchange   |
| ProcDate          | google.protobuf.Timestamp   | Process date   |
| RicCode           | string                      | Reuters instrument code  |
| Rsi9d1d           | google.protobuf.DoubleValue | Value of 9-day relative strength index   |

| Field Name       | Data Type                   | Accepted Values/Examples  |
|------------------|-----------------------------|---|
| Rsi14d1d         | google.protobuf.DoubleValue | Value of 14-day relative strength index   |
| Rsi25d1d         | google.protobuf.DoubleValue | Value of 25-day relative strength index   |
| SecurityCategory | google.protobuf.Int32Value  | SIC code  |
| Sedol            | string                      | (Stock Exchange Daily Official List)<br>7-digit ID assigned to all securities trading on LSE and other smaller UK exchanges |
| SharesOut        | google.protobuf.Int32Value  | Shares outstanding  |
| SplitDate1       | google.protobuf.Timestamp   | Date of first split   |
| SplitFactor1     | google.protobuf.DoubleValue | Factor of most recent split for symbol  |
| Volume5davg1d    | google.protobuf.DoubleValue | 5-day average volume  |
| Volume10davg1d   | google.protobuf.DoubleValue | 10-day average volume   |
| Volume20davg1d   | google.protobuf.DoubleValue | 20-day average volume   |
| Volume50davg1d   | google.protobuf.DoubleValue | 50-day average volume   |
| Volume200davg1d  | google.protobuf.DoubleValue | 200-day average volume  |

## SymbolData

| Field Name             | Data Type | Accepted Values/Examples                    |
|------------------------|-----------|---|
| BloombergCode          | string    | Bloomberg symbol code associated with order |
| BloombergCodeComposite | string    | Bloomberg code composite                    |
| BloombergCodeFull      | string    | Full bloomberg code                         |
| CommodityName          | string    | Name of the contract for a commodity        |
| Country                | string    | Country of exchange where stock is listed   |

| Field Name      | Data Type                  | Accepted Values/Examples   |
|-----------------|----------------------------|--|
| Cusip           | string                     | ID assigned to all North American stocks and registered bonds  |
| DispName        | string                     | 'IBM' (Symbol formats are datafeed-specific. Check your feed handler help file for the correct format.)                  |
| ExchName        | string                     | Three-letter acronym for listing exchange  |
| GicsIndustry    | string                     | Industry code as specified by Global Industry Classification Standard (GICS)   |
| GicsSector      | string                     | Sector code as specified by Global Industry Classification Standard (GICS)   |
| GicsSubindustry | string                     | Sub-industry code as specified by Global Industry Classification Standard (GICS)   |
| IsinNo          | string                     | International ID assigned to all securities foreign or domestic  |
| RicCode         | string                     | Reuters instrument code  |
| Sedol           | string                     | (Stock Exchange Daily Official List) 7-digit ID assigned to all securities trading on LSE and other smaller UK exchanges |
| Styp            | google.protobuf.Int32Value | Security type  |
| SymbolDesc      | string                     | Symbol description   |

## SymInfoResponse

| Field Name             | Data Type | Retrieves                                   |
|------------------------|-----------|---|
| BloombergCode          | string    | Bloomberg symbol code associated with order |
| BloombergCodeComposite | string    | Bloomberg code composite                    |
| BloombergCodeFull      | string    | Full bloomberg code                         |

| Field Name | Data Type                  | Retrieves   |
|------------|----------------------------|---|
| DispName   | string                     | 'IBM' (Symbol formats are datafeed-specific. Check your feed handler help file for the correct format.) |
| ExchName   | string                     | Three-letter acronym for listing exchange   |
| Styp       | google.protobuf.Int32Value | Security type   |
| SymbolDesc | string                     | Symbol description  |

## TicksResponse

| Field Name | Data Type                          | Retrieves   |
|------------|------------------------------------|---|
| DispName   | repeated string                    | 'IBM' (Symbol formats are datafeed-specific. Check your feed handler help file for the correct format.) |
| TickType   | repeated int32                     | Tick type   |
| TrdDate    | repeated google.protobuf.Timestamp | Date of last trade  |
| TrdPrc1    | repeated Price                     | Last traded price   |
| TrdTim1    | repeated google.protobuf.Duration  | Time of last trade  |
| TrdVol1    | repeated int32                     | Volume of last reported trade   |
| TrdXid1    | repeated string                    | Exchange ID of last trade   |

## TickTypes

| Field Name | Data Type | Accepted Values/Examples   |
|------------|-----------|--|
| Ticks      | enum      | TRADE = 0; BID = 1; ASK = 2; REGIONAL_BID = 3; REGIONAL_ASK = 4; DELETED = 11; INSERTED = 12; IRREGULAR_DELETE = 44; FORM_T_TRADE = 32 |

## AddSymbols

The **AddSymbolsRequest** object is used as an input in **AddSymbols** API. This API is used to add the symbols to your account.

## AddSymbolsRequest

| Field Name      | Data Type       | Accepted Values/Examples   |
|-----------------|-----------------|--|
| MarketDataLevel | string          | Level1 or Level2   |
| Symbols         | repeated string | Valid ticker symbols   |
| UserToken       | string          | A server generated GUID that is given as response to the client during the first login |

## AddSymbolsResponse

| Field Name      | Data Type             | Retrieves   |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a>   |
| OptionalFields  | map<string, string>   | This is additional information given to the client in cases of failure. The field OptionalFields ["ErrorMessage"] would contain the reason for error or exception |
| ServerResponse  | string                | Success: In case the invoked API executes successfully on the server side<br>Failed: In case the invoked API throws an error or lands in an exception             |

## GetDailyWeeklyMonthlyBars

The **DailyWeeklyMonthlyBarsRequest** object is used as an input in **GetDailyWeeklyMonthlyBars** API. This API is used to request for daily, weekly and monthly bars.

## DailyWeeklyMonthlyBarsRequest

| Field Name | Data Type                  | Accepted Values/Examples  |
|------------|----------------------------|---|
| DaysBack   | google.protobuf.Int32Value | The number of days worth of bars to retrieve                              |
| Interim    | Interval                   | Refer to the section <a href="#">Interval</a>                             |
| RequestId  | google.protobuf.Int32Value | A user-supplied request ID that can be used to disambiguate response data |
| StopDate   | google.protobuf.Timestamp  | Stop date (LME - used with start date only)                               |
| Symbol     | string                     | Valid ticker symbol (e.g., AAPL, IBM, VOD.LSE)                            |

| Field Name | Data Type | Accepted Values/Examples   |
|------------|-----------|--|
| UserToken  | string    | A server generated GUID that is given as response to the client during the first login |

## DailyWeeklyMonthlyBarsResponse

| Field Name      | Data Type             | Retrieves   |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a> |
| BarFields       | CommonBarsFields      | Refer to the section <a href="#">CommonBarsFields</a>   |
| DispName        | string                | 'IBM' (Symbol formats are datafeed-specific. Check your Feed Handler help file for the correct format.)   |

## GetDescriptionFromOptionSymbol

The **DescriptionFromOptionSymbolRequest** object is used as an input in **GetDescriptionFromOptionSymbol** API. This API is used to request description from option symbol.

## DescriptionFromOptionSymbolRequest

| Field Name | Data Type | Accepted Values/Examples   |
|------------|-----------|--|
| Symbol     | string    | Valid ticker symbol (e.g., AAPL, IBM, VOD.LSE)   |
| UserToken  | string    | A server generated GUID that is given as response to the client during the first login |

## DescriptionFromOptionSymbolResponse

| Field Name      | Data Type             | Retrieves   |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a> |
| Expiration      | string                | Time at which order is no longer valid (DAY, DAYPLUS, or custom value supported by destination)           |
| OptionType      | OptionTypes           | Refer to the section <a href="#">OptionTypes</a>  |
| Root            | string                | Symbol root for option  |



| Field Name  | Data Type | Retrieves                              |
|-------------|-----------|--|
| StrikePrice | double    | Price at which option can be exercised |

## GetIntradayBars

The **IntradayBarsRequest** object is used as an input in **GetIntradayBars** API. This API is used to acquire intraday bars.

### IntradayBarsRequest

| Field Name        | Data Type                  | Accepted Values/Examples  |
|-------------------|----------------------------|---|
| BarInterval       | int32                      | Bar interval in minutes   |
| Date              | google.protobuf.Timestamp  | The end date for the query, i.e. the most recent date for which bars should be retrieved. If null, defaults to the current date                                     |
| DaysBack          | int32                      | The number of days worth of bars to retrieve  |
| requestId         | google.protobuf.Int32Value | A user-supplied request ID that can be used to disambiguate response data   |
| ShowPrePostMarket | bool                       | If set to <b>True</b> , displays the pre/post trading hours market data   |
| StartAtMidnight   | bool                       | If set to <b>True</b> , the first bar of the day includes all data since midnight, otherwise the first bar of the day includes all data since the session open time |
| StartTime         | google.protobuf.Duration   | Bars earlier than this time will be excluded. If null, there is no restriction  |
| StopTime          | google.protobuf.Duration   | Bars later than this time will be excluded. If null, there is no restriction  |
| Symbol            | string                     | Valid ticker symbol (e.g., AAPL, IBM, VOD.LSE)  |
| UserToken         | string                     | A server generated GUID that is given as response to the client during the first login  |

## IntradayBarsResponse

| Field Name      | Data Type             | Retrieves   |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a> |
| Bars            | CommonBarsFields      | Refer to the section <a href="#">CommonBarsFields</a>   |
| TrdTim1         | repeated string       | Trade time  |

## GetLevel1MarketData

The **Level1MarketDataRecordRequest** object is used as an input in **GetLevel1MarketData** API. This is an unary API used to fetch level 1 market data snapshot (e.g., Bid, Ask, Last traded price). You can request one or more symbols data at a time.

### Level1MarketDataRecordRequest

| Field Name          | Data Type       | Accepted Values/Examples   |
|---------------------|-----------------|--|
| RegionalExchangelds | repeated string | Regional exchange ID   |
| Symbols             | repeated string | Valid ticker symbol (e.g., AAPL, IBM, VOD.LSE)   |
| UserToken           | string          | A server generated GUID that is given as response to the client during the first login |

### Level1MarketDataRecordResponse

| Field Name      | Data Type                       | Retrieves   |
|-----------------|---------------------------------|---|
| Acknowledgement | ServerAcknowledgement           | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a> |
| DataRecord      | repeated Level1MarketDataRecord | Refer to the section <a href="#">Level1MarketDataRecord</a>   |

## GetOptionChainForUnderlier

The **OptionChainRequest** object is used as an input in **GetOptionChainForUnderlier** API. This API is used to acquire the option chain.

## OptionChainRequest

| Field Name | Data Type                  | Accepted Values/Examples   |
|------------|----------------------------|--|
| RequestId  | google.protobuf.Int32Value | A user-supplied request ID that can be used to disambiguate response data              |
| SymbolRoot | string                     | Symbol root for options  |
| UserToken  | string                     | A server generated GUID that is given as response to the client during the first login |

## OptionChainResponse

| Field Name      | Data Type                   | Retrieves   |
|-----------------|-----------------------------|---|
| Acknowledgement | ServerAcknowledgement       | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a> |
| Derivative      | repeated QuoteChainResponse | Underlier information   |

## GetOptionsAndGreeksData

The **OptionsAndGreeksDataRequest** object is used as an input in **GetOptionsAndGreeksData** API. This API is used to request the options and greek data.

## OptionsAndGreeksDataRequest

| Field Name | Data Type       | Accepted Values/Examples   |
|------------|-----------------|--|
| Symbols    | repeated string | Valid ticker symbol (e.g., AAPL, IBM, VOD.LSE)   |
| UserToken  | string          | A server generated GUID that is given as response to the client during the first login |

## OptionsAndGreeksDataResponse

| Field Name      | Data Type                          | Retrieves   |
|-----------------|------------------------------------|---|
| Acknowledgement | ServerAcknowledgement              | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a> |
| OptionsList     | repeated OptionCalculationResponse | Refer to the section <a href="#">OptionCalculationResponse</a>  |

## GetOptionSymbolFromDescription

The **OptionSymbolFromDescriptionRequest** object is used as an input in **GetOptionSymbolFromDescription** API. This API is used to request option symbol from description.

### OptionSymbolFromDescriptionRequest

| Field Name  | Data Type   | Accepted Values/Examples  |
|-------------|-------------|---|
| Expiration  | string      | Time at which order is no longer valid (DAY, DAYPLUS, or custom value supported by destination) |
| OptionType  | OptionTypes | Refer to the section <a href="#">OptionTypes</a>  |
| Root        | string      | Symbol root for option  |
| StrikePrice | double      | Price at which option can be exercised  |
| UserToken   | string      | A server generated GUID that is given as response to the client during the first login          |

### OptionSymbolFromDescriptionResponse

| Field Name      | Data Type             | Retrieves  |
|-----------------|-----------------------|--|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">Server-Acknowledgement</a> |
| Symbol          | string                | Valid ticker symbol (e.g., AAPL, IBM, VOD.LSE)   |

## GetSecurityData

The **SecurityDataRequest** object is used as an input in **GetSecurityData** API. This API is used to request security data.

### SecurityDataRequest

| Field Name | Data Type | Accepted Values/Examples   |
|------------|-----------|--|
| Symbol     | string    | Valid ticker symbol (e.g., AAPL, IBM, VOD.LSE)   |
| UserToken  | string    | A server generated GUID that is given as response to the client during the first login |

## SecurityDataResponse

| Field Name       | Data Type             | Retrieves   |
|------------------|-----------------------|---|
| Acknowledgement  | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a> |
| SecurityInfoList | repeated SecurityData | Refer to the section <a href="#">SecurityData</a>   |

## GetSymbolFromAlternateSymbology

The **SymbolFromAlternateSymbologyRequest** object is used as an input in **GetSymbolFromAlternateSymbology** API. This API is used to fetch Symbols using SEDOL, CUSIP or ISIN code.

### SymbolFromAlternateSymbologyRequest

| Field Name | Data Type          | Accepted Values/Examples   |
|------------|--------------------|--|
| Symbol     | string             | Valid ticker symbol (e.g., AAPL, IBM, VOD.LSE)   |
| SymbolInfo | AlternateSymbology | Refer to the section <a href="#">AlternateSymbology</a>                                |
| UserToken  | string             | A server generated GUID that is given as response to the client during the first login |

### SymbolFromAlternateSymbologyResponse

| Field Name      | Data Type             | Retrieves   |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a> |
| SymbolInfoList  | repeated SymbolData   | Refer to the section <a href="#">SymbolData</a>   |

## GetSymbolReferenceData

The **SymbolReferenceDataRequest** object is used as an input in **GetSymbolReferenceData** API. This API is used to request symbol reference data.

### SymbolReferenceDataRequest

| Field Name | Data Type | Accepted Values/Examples                       |
|------------|-----------|--|
| Symbol     | string    | Valid ticker symbol (e.g., AAPL, IBM, VOD.LSE) |

| Field Name | Data Type | Accepted Values/Examples   |
|------------|-----------|--|
| UserToken  | string    | A server generated GUID that is given as response to the client during the first login |

## SymbolReferenceDataResponse

| Field Name      | Data Type                | Retrieves   |
|-----------------|--------------------------|---|
| Acknowledgement | ServerAcknowledgement    | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a> |
| SymInfoList     | repeated SymInfoResponse | Refer to the section <a href="#">SymInfoResponse</a>  |

## GetSymbolsFromCompanyName

The **SymbolsFromCompanyNameRequest** object is used as an input in **GetSymbolsFromCompanyName** API. This API is used to fetch symbols for a company you entered.

## SymbolsFromCompanyNameRequest

| Field Name  | Data Type | Accepted Values/Examples   |
|-------------|-----------|--|
| CompanyName | string    | Company name represented by symbol   |
| UserToken   | string    | A server generated GUID that is given as response to the client during the first login |

## SymbolsFromCompanyNameResponse

| Field Name      | Data Type             | Retrieves   |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a> |
| SymbolDataList  | repeated SymbolData   | Refer to the section <a href="#">SymbolData</a>   |

## GetTickData

The **TickDataRequest** object is used as an input in **GetTickData** API. This API is used to request tick data.

## TickDataRequest

| Field Name | Data Type                 | Accepted Values/Examples |
|------------|---------------------------|--------------------------|
| Date       | google.protobuf.Timestamp | Trade date               |

| Field Name | Data Type                  | Accepted Values/Examples   |
|------------|----------------------------|--|
| RequestId  | google.protobuf.Int32Value | A user-supplied request ID that can be used to disambiguate response data              |
| StartTime  | google.protobuf.Duration   | The time trading started for the current session                                       |
| StopTime   | google.protobuf.Duration   | The time trading ended   |
| Symbol     | string                     | Valid ticker symbol (e.g., AAPL, IBM, VOD.LSE)   |
| TickTypes  | repeated TickTypes         | Refer to the section <a href="#">TickTypes</a>   |
| UserToken  | string                     | A server generated GUID that is given as response to the client during the first login |

## TickDataResponse

| Field Name      | Data Type              | Retrieves   |
|-----------------|------------------------|---|
| Acknowledgement | ServerAcknowledgement  | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a> |
| TickInfo        | repeated TicksResponse | Refer to the section <a href="#">TicksResponse</a>  |

## RemoveSymbols

The **RemoveSymbolsRequest** object is used as an input in **RemoveSymbols** API. This API is used to remove symbols from your account.

## RemoveSymbolsRequest

| Field Name      | Data Type       | Accepted Values/Examples   |
|-----------------|-----------------|--|
| MarketDataLevel | string          | Level1 or Level2   |
| Symbols         | repeated string | Valid ticker symbols   |
| UserToken       | string          | A server generated GUID that is given as response to the client during the first login |

## RemoveSymbolsResponse

| Field Name      | Data Type             | Retrieves   |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a>   |
| OptionalFields  | map<string, string>   | This is additional information given to the client in cases of failure. The field OptionalFields ["ErrorMessage"] would contain the reason for error or exception |
| ServerResponse  | string                | Success: In case the invoked API executes successfully on the server side<br>Failed: In case the invoked API throws an error or lands in an exception             |

## SubscribeLevel1Ticks

The **Level1MarketDataRequest** object is used as an input in **SubscribeLevel1Ticks** API. This API is used to fetch the level 1 market data snapshot.

## Level1MarketDataRequest

| Field Name          | Data Type       | Accepted Values/Examples   |
|---------------------|-----------------|--|
| Advise              | bool            | If set to <b>True</b> , real-time updates from the server will be registered for       |
| RegionalExchangelds | repeated string | Regional exchange ID   |
| Request             | bool            | If set to <b>True</b> , a current snapshot of the data will be retrieved               |
| Symbols             | repeated string | Valid ticker symbol (e.g., AAPL, IBM, VOD.LSE)   |
| UserToken           | string          | A server generated GUID that is given as response to the client during the first login |

## Level1MarketDataResponse

| Field Name      | Data Type             | Retrieves  |
|-----------------|-----------------------|--|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">Server-Acknowledgement</a> |



| Field Name          | Data Type                  | Retrieves   |
|---------------------|----------------------------|---|
| ArcalmbalanceVolume | google.protobuf.Int32Value | Pre-Open imbalance volume (positive is bid, negative is offer)  |
| ArcaMatchVolume     | google.protobuf.Int32Value | Total number of shares to be executed   |
| Ask                 | Price                      | Last ask price for symbol   |
| Bid                 | Price                      | Last bid price for symbol   |
| BidTick2            | string                     | "Bid tick" for NASDAQ short sale rule   |
| ChangeLast          | Price                      | Change from last price  |
| CompanyName         | string                     | Company name represented by symbol  |
| DispName            | string                     | 'IBM' (Symbol formats are datafeed-specific. Check your Feed Handler help file for the correct format.) |
| High1               | Price                      | Value of highest transaction for current session  |
| High52              | Price                      | Highest traded price for a share in the last 52 weeks   |
| IntradayHighCount   | google.protobuf.Int32Value | Number of intraday highs  |
| Low1                | Price                      | Value of lowest transaction for current session   |
| Low52               | Price                      | Lowest traded price for a share in the last 52 weeks  |
| LrpAsk              | Price                      | NYSE liquidity replenishment point for Asks   |
| LrpBid              | Price                      | NYSE liquidity replenishment point for bids   |
| Open Interest       | Long                       | Open interest   |
| SaleConditionVolume | google.protobuf.Int32Value | Volume of the most recent pre-market, post-market, or irregular trade                                   |
| SymbolDesc          | string                     | Symbol description  |
| Trdprc1             | Price                      | Last traded price   |

| Field Name | Data Type                   | Retrieves                         |
|------------|-----------------------------|-----------------------------------|
| Trdtim1    | google.protobuf.Duration    | Trade time                        |
| Vwap       | google.protobuf.DoubleValue | VWAP from the trade server        |
| VwapVol    | google.protobuf.Int32Value  | VWAP Volume from the trade server |

## SubscribeLevel2Ticks

The **Level2MarketDataRequest** object is used as an input in **SubscribeLevel2Ticks** API. This API is used to acquire the level 2 market data information.

### Level2MarketDataRequest

| Field Name   | Data Type                  | Accepted Values/Examples   |
|--------------|----------------------------|--|
| Advise       | bool                       | If set to <b>True</b> , real-time updates from the server will be registered for                             |
| MarketSource | repeated string            | A list of market sources to which the returned data should be restricted. If empty, all sources are included |
| Request      | bool                       | If set to <b>True</b> , a current snapshot of the data will be retrieved                                     |
| RequestId    | google.protobuf.Int32Value | A user-supplied request ID that can be used to disambiguate response data                                    |
| Symbols      | repeated string            | Valid ticker symbol (e.g., AAPL, IBM, VOD.LSE)   |
| UserToken    | string                     | A server generated GUID that is given as response to the client during the first login                       |

### Level2MarketDataResponse

| Field Name      | Data Type             | Retrieves  |
|-----------------|-----------------------|--|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">Server-Acknowledgement</a> |
| DispName        | string                | 'IBM' (Symbol formats are datafeed-specific. Check your feed handler help file for the correct format.)    |

| Field Name          | Data Type                  | Retrieves                                   |
|---------------------|----------------------------|---|
| ExchName            | string                     | Three-letter acronym for listing exchange   |
| MktMkrAsk           | Price                      | Market maker ask price (LME)                |
| MktMkrAsksize       | google.protobuf.Int32Value | Market maker ask size (LME)                 |
| MktMkrAskTime       | google.protobuf.Duration   | Market maker ask time (LME)                 |
| MktMkrBid           | Price                      | Market maker bid price (LME)                |
| MktMkrBidsize       | google.protobuf.Int32Value | Market maker bid size (LME)                 |
| MktMkrBidTime       | google.protobuf.Duration   | Market maker bid time (LME)                 |
| MktMkrChangeLastAsk | Price                      | Ask change                                  |
| MktMkrDate          | google.protobuf.Timestamp  | Market maker date (LME)                     |
| MktMkrDisplay       | string                     | Market maker display                        |
| MktMkrId            | string                     | Market maker ID                             |
| MktMkrStatus        | string                     | Market maker status                         |
| MktSource           | string                     | Market maker quote source                   |
| QuoteUpdateType     | google.protobuf.Int32Value | Type of update (live, refresh, or recovery) |
| Styp                | google.protobuf.Int32Value | Security type                               |
| SymbolError         | google.protobuf.Int32Value | Symbol error                                |
| SymbolId            | google.protobuf.Int32Value | Symbol ID                                   |
| TableId             | google.protobuf.Int32Value | Table ID                                    |

## SubscribeTickData

The **SubscribeTickDataRequest** object is used as an input in **SubscribeTickData** API. This API is used to fetch a streaming tick data.

### SubscribeTickDataRequest

| Field Name | Data Type                 | Accepted Values/Examples |
|------------|---------------------------|--------------------------|
| Date       | google.protobuf.Timestamp | Trade date               |

| Field Name | Data Type                  | Accepted Values/Examples   |
|------------|----------------------------|--|
| Request    | bool                       | If set to <b>True</b> , a current snapshot of the data will be retrieved               |
| RequestId  | google.protobuf.Int32Value | A user-supplied request ID that can be used to disambiguate response data              |
| StartTime  | google.protobuf.Duration   | The time trading started for the current session                                       |
| StopTime   | google.protobuf.Duration   | The time trading ended   |
| Symbol     | string                     | Valid ticker symbol (e.g., AAPL, IBM, VOD.LSE)   |
| TickTypes  | repeated TickTypes         | Refer to the section <a href="#">TickTypes</a>   |
| UserToken  | string                     | A server generated GUID that is given as response to the client during the first login |

## SubscribeTickDataResponse

| Field Name      | Data Type                          | Retrieves   |
|-----------------|------------------------------------|---|
| Acknowledgement | ServerAcknowledgement              | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a> |
| Count           | int32                              | Tick count  |
| DispName        | repeated string                    | 'IBM' (Symbol formats are datafeed-specific. Check your feed handler help file for the correct format.)   |
| TickInfo        | repeated TicksResponse             | Refer to the section <a href="#">TicksResponse</a>  |
| TickType        | repeated int32                     | Tick type   |
| TrdDate         | repeated google.protobuf.Timestamp | Date of last trade  |
| TrdTim1         | repeated google.protobuf.Duration  | Time of last trade  |
| TrdVol1         | repeated int32                     | Volume of last reported trade   |
| TrdXid1         | repeated string                    | Exchange ID of last trade   |

## UnSubscribeLevel1Data

The **UnSubscribeLevel1DataRequest** object is used as an input in **UnSubscribeLevel1Data** API. This API is used to unsubscribe the level 1 data.

### UnSubscribeLevel1DataRequest

| Field Name | Data Type | Accepted Values/Examples   |
|------------|-----------|--|
| UserToken  | string    | A server generated GUID that is given as response to the client during the first login |

### UnSubscribeLevel1DataResponse

| Field Name      | Data Type             | Retrieves   |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a>   |
| OptionalFields  | map<string, string>   | This is additional information given to the client in cases of failure. The field OptionalFields ["ErrorMessage"] would contain the reason for error or exception |
| ServerResponse  | string                | Success: In case the invoked API executes successfully on the server side<br>Failed: In case the invoked API throws an error or lands in an exception             |

## UnSubscribeLevel2Data

The **UnSubscribeLevel2DataRequest** object is used as an input in **UnSubscribeLevel2Data** API. This API is used to unsubscribe the level 2 data.

### UnSubscribeLevel2DataRequest

| Field Name | Data Type | Accepted Values/Examples   |
|------------|-----------|--|
| UserToken  | string    | A server generated GUID that is given as response to the client during the first login |

## UnSubscribeLevel2DataResponse

| Field Name      | Data Type             | Retrieves   |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a>   |
| OptionalFields  | map<string, string>   | This is additional information given to the client in cases of failure. The field OptionalFields ["ErrorMessage"] would contain the reason for error or exception |
| ServerResponse  | string                | Success: In case the invoked API executes successfully on the server side<br>Failed: In case the invoked API throws an error or lands in an exception             |

## UnSubscribeTickData

The **UnSubscribeTickDataRequest** object is used as an input in **UnSubscribeTickData** API. This API is used to unsubscribe the tick data.

## UnSubscribeTickDataRequest

| Field Name | Data Type | Accepted Values/Examples   |
|------------|-----------|--|
| UserToken  | string    | A server generated GUID that is given as response to the client during the first login |

## UnSubscribeTickDataResponse

| Field Name      | Data Type             | Retrieves   |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to the section <a href="#">ServerAcknowledgement</a> |

## Exceptions and Error Handling

For every successful response from the server, the `ServerAcknowledgement` will yield a `ServerResponse` called “success”. For any exception or error, the server will respond with `ServerResponse` “failed” along with the reason for the error in the `OptionalField[“ErrorMessage”]`.

Also, all the standard errors provided by gRPC are supported by default. More info on the topic can be found [here](#).

## Appendix A: Order Event Types

| Event Types             | Description  |
|-------------------------|--|
| ClerkReject             | Eze EMS rejects a user order   |
| ExchangeAcceptOrder     | Destination accepts event submitted  |
| ExchangeBustOrder       | Order that was busted by the Exchange  |
| ExchangeKillOrder       | Trade is busted by the destination   |
| ExchangeReportStatus    | Exchange reports the status of an order  |
| ExchangeTradeOrder      | Exchange executes a fill   |
| ForeignExecution        | Doneaway trade and allocation events <ul style="list-style-type: none"> <li>Allocation: Executed in another account on the EMS</li> <li>Doneaway: Executed outside of the EMS but recorded in EMS</li> </ul> |
| UserSubmitAllocation    | User submitted allocation  |
| UserSubmitAllocationEx  | Outbound allocation  |
| UserSubmitBust          | Submission of a bust (trade or allocation) by a user   |
| UserSubmitCancel        | User submitted cancellation of a fill  |
| UserSubmitChange        | Change to an order by a user   |
| UserSubmitCompoundOrder | Submission of a pair order by a user to an exchange  |
| UserSubmitOrder         | Submission of an order by a user to an exchange  |
| UserSubmitStagedOrder   | Submission of a staged order by user   |
| UserSubmitTradeReport   | User enters a trade through the trade report functionality (but does not mark it as a foreign execution)   |



**Note:** More information can be found in the **Reason** field in case of a Order rejection or failure.