

Eze EMS

EMS xAPI v2021.7.0.0 Technical Reference

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This document provides the technical details about Eze EMS xAPI.

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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 |
|-------------|--------------|---|
| v2021.7.0.0 | Oct 04, 2021 | There are no documentation updates in this xAPI release. |
| v2021.5.0.0 | Jul 16, 2021 | <p>Added the following APIs and Custom Data Type:</p> <ul style="list-style-type: none"> • SubscribeOrderInfoJson • GetOrderDetailByOrderIdJson • GetOrderDetailByDateRangeJson • ExpirationType • PriceTypeEnum <p>Added Required? 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 OrderResponse, SubmitSingleOrderRequest, ChangeSingleOrderRequest, SubscribeOrderInfoResponse, OrderInfo, and OrderInfoFilters.</p> <p>Added information related to Extended Fields in OrderResponse and SubscribeOrderInfoResponse.</p> <p>Added new section Appendix A: Order Event Types.</p> |
| v2021.2.0.0 | Mar 31, 2021 | <p>Added the following API:</p> <ul style="list-style-type: none"> • GetTodaysActivityJson <p>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"> • GetStrategyList • StrategyListRow |
| v2020.9.0.0 | Dec 18, 2020 | <p>Added the following API:</p> <ul style="list-style-type: none"> • SubscribeHeartBeat |
| v2020.8.0.0 | Nov 25, 2020 | <p>Added the following APIs and Custom Data Type:</p> <ul style="list-style-type: none"> • ChangePasswordSRP • SubmitAllocationOrder |

| Version No. | Date | Summary of Update |
|-------------|--------------|---|
| | | <ul style="list-style-type: none"> • SubmitTradeReport • AllocationType • OrderType • TradeType |
| 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/](https://grpc.io/docs/languages/)

Version

The current stable version of Eze EMS xAPI is 2021.7.0.0.

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) | | |
| SubmitSingleOrder | SubmitSingleOrderRequest | SubmitSingleOrderResponse |
| ChangeSingleOrder | ChangeSingleOrderRequest | ChangeSingleOrderResponse |
| CancelSingleOrder | CancelSingleOrderRequest | CancelSingleOrderResponse |
| SubmitAllocationOrder | SubmitAllocationOrderRequest | SubmitAllocationOrderResponse |
| SubmitTradeReport | SubmitTradeReportRequest | SubmitTradeReportResponse |
| Order (Pair Order APIs) | | |
| SubmitPairOrder | SubmitPairOrderRequest | SubmitPairOrderResponse |
| ChangePairOrder | ChangePairOrderRequest | ChangePairOrderResponse |
| CancelPairOrder | CancelPairOrderRequest | CancelPairOrderResponse |
| Order (Basket Order APIs) | | |
| SubmitBasketOrder | BasketOrderRequest | BasketOrderResponse |
| Order (Miscellaneous) | | |
| SubmitSeedData | SubmitSeedDataRequest | SubmitSeedDataResponse |
| GetUserAccounts | UserAccountsRequest | UserAccountsResponse |
| SubscribeOrderInfo | SubscribeOrderInfoRequest | stream SubscribeOrderInfoResponse |
| SubscribeOrderInfoJson | SubscribeOrderInfoJsonRequest | stream SubscribeOrderInfoJsonResponse |
| GetOrderDetailByOrderIdJson | OrderDetailByOrderIdJsonRequest | OrderDetailByOrderIdJsonResponse |
| GetOrderDetailByDateRangeJson | OrderDetailByDateRangeJsonRequest | stream OrderDetailByDateRangeJsonResponse |

| MarketData | | |
|---------------------------------|-------------------------------------|--------------------------------------|
| API Name | Input | Output |
| GetDailyWeeklyMonthlyBars | DailyWeeklyMonthlyBarsRequest | DailyWeeklyMonthlyBarsResponse |
| GetIntradayBars | IntradayBarsRequest | IntradayBarsResponse |
| GetOptionChainForUnderlier | OptionChainRequest | OptionChainResponse |
| GetSymbolReferenceData | SymbolReferenceDataRequest | SymbolReferenceDataResponse |
| GetTickData | TickDataRequest | TickDataResponse |
| GetOptionsAndGreekData | OptionsAndGreekDataRequest | OptionsAndGreekDataResponse |
| GetSecurityData | SecurityDataRequest | SecurityDataResponse |
| GetOptionSymbolFromDescription | OptionSymbolFromDescriptionRequest | OptionSymbolFromDescriptionResponse |
| GetDescriptionFromOptionSymbol | DescriptionFromOptionSymbolRequest | DescriptionFromOptionSymbolResponse |
| SubscribeLevel1Ticks | Level1MarketDataRequest | stream Level1MarketDataResponse |
| UnSubscribeLevel1Data | UnSubscribeLevel1DataRequest | UnSubscribeLevel1DataResponse |
| SubscribeLevel2Ticks | Level2MarketDataRequest | stream Level2MarketDataResponse |
| UnSubscribeLevel2Data | UnSubscribeLevel2DataRequest | UnSubscribeLevel2DataResponse |
| AddSymbols | AddSymbolsRequest | AddSymbolsResponse |
| RemoveSymbols | RemoveSymbolsRequest | RemoveSymbolsResponse |
| GetSymbolsFromCompanyName | SymbolsFromCompanyNameRequest | SymbolsFromCompanyNameResponse |
| GetSymbolFromAlternateSymbology | SymbolFromAlternateSymbologyRequest | SymbolFromAlternateSymbologyResponse |

| Utilities | | |
|-----------|----------------|-----------------|
| API Name | Input | Output |
| Connect | ConnectRequest | ConnectResponse |

| Utilities | | |
|------------------------------|----------------------------------|-----------------------------------|
| API Name | Input | Output |
| Disconnect | DisconnectRequest | DisconnectResponse |
| GetTodaysBalances | TodaysBalancesRequest | TodaysBalancesResponse |
| GetTodaysActivity | TodaysActivityRequest | TodaysActivityResponse |
| GetTodaysActivityBook | TodaysActivityBookRequest | TodaysActivityBookResponse |
| GetTodaysBrokenDownPositions | TodaysBrokenDownPositionsRequest | TodaysBrokenDownPositionsResponse |
| GetTodaysNetPositions | TodaysNetPositionsRequest | TodaysNetPositionsResponse |
| SubscribeHeartBeat | SubscribeHeartBeatRequest | SubscribeHeartBeatResponse |
| GetStrategyList | StrategyListRequest | StrategyListResponse |
| GetTodaysActivityJson | TodaysActivityJsonRequest | TodaysActivityJsonResponse |
| Secured Remote Password | | |
| StartLoginSrp | StartLoginSrpRequest | StartLoginSrpResponse |
| CompleteLoginSrp | CompleteLoginSrpRequest | CompleteLoginSrpResponse |
| ChangePasswordSRP | ChangePasswordSRPRequest | ChangePasswordSRPResponse |



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 |
|--------------------------|------------------------------|-----------------------------------|
| Single Order APIs | | |
| SubmitSingleOrder | SubmitSingleOrderRequest | SubmitSingleOrderResponse |
| ChangeSingleOrder | ChangeSingleOrderRequest | ChangeSingleOrderResponse |
| CancelSingleOrder | CancelSingleOrderRequest | CancelSingleOrderResponse |
| SubmitAllocationOrder | SubmitAllocationOrderRequest | SubmitAllocationOrderResponse |
| SubmitTradeReport | SubmitTradeReportRequest | SubmitTradeReportResponse |
| Pair Order APIs | | |
| SubmitPairOrder | SubmitPairOrderRequest | SubmitPairOrderResponse |
| ChangePairOrder | ChangePairOrderRequest | ChangePairOrderResponse |
| CancelPairOrder | CancelPairOrderRequest | CancelPairOrderResponse |
| Basket Order APIs | | |
| SubmitBasketOrder | BasketOrderRequest | BasketOrderResponse |
| Miscellaneous | | |
| SubmitSeedData | SubmitSeedDataRequest | SubmitSeedDataResponse |
| GetUserAccounts | UserAccountsRequest | UserAccountsResponse |
| SubscribeOrderInfo | SubscribeOrderInfoRequest | stream SubscribeOrderInfoResponse |

Custom Data Type

OrderRow

| Field Name | Data Type | Accepted Values/Examples |
|------------|---------------------------|----------------------------------|
| ExpirDate | google.protobuf.Timestamp | Date of expiration for an option |

| Field Name | Data Type | Accepted Values/Examples |
|--------------------|-----------------------------|--|
| NewsDate | google.protobuf.Timestamp | Date of most recent news story |
| AllocatedValue | google.protobuf.DoubleValue | Allocated value |
| AvgPrice | google.protobuf.DoubleValue | Average execution price for order so far |
| Basisvalue | google.protobuf.DoubleValue | Currency value of a unit move |
| Commission | google.protobuf.DoubleValue | Net of commissions for today's trades for a symbol |
| CommissionRate | google.protobuf.DoubleValue | Commission Rate |
| EcnFee | google.protobuf.DoubleValue | ECN Fee |
| Latency3 | google.protobuf.DoubleValue | Latency |
| Latency6 | google.protobuf.DoubleValue | Latency |
| PairCash | google.protobuf.DoubleValue | Pair cash component |
| PairImbalanceLimit | google.protobuf.DoubleValue | Pair imbalance limit |
| PairLeg1Benchmark | google.protobuf.DoubleValue | Pair Leg 1 Benchmark |
| PairLeg2Benchmark | google.protobuf.DoubleValue | Pair Leg 2 Benchmark |
| PairRatio | google.protobuf.DoubleValue | Pair Ratio |
| PairSpread | google.protobuf.DoubleValue | Pair Spread |
| PairTarget | google.protobuf.DoubleValue | Pair Target |
| SpreadClip | google.protobuf.DoubleValue | Spread clip |
| AcctType | google.protobuf.Int32Value | Type of account for a position |
| BookId | google.protobuf.Int32Value | Book ID |
| CommissionRateType | google.protobuf.Int32Value | Commission Rate Type |
| CrossFlag | google.protobuf.Int32Value | Cross flag |
| DateIndex | google.protobuf.Int32Value | Date index |
| ExecutionState | google.protobuf.Int32Value | Execution state |
| ExtendedStateFlags | google.protobuf.Int32Value | Extended state information for internal |

| Field Name | Data Type | Accepted Values/Examples |
|-------------------------|----------------------------|-------------------------------------|
| | | use |
| ExtendedStateFlags2 | google.protobuf.Int32Value | Extended state flags 2 |
| ExternalAcceptanceFlag | google.protobuf.Int32Value | External acceptance flag |
| FornexSourceFlags | google.protobuf.Int32Value | Forex Source |
| GwBookSeqNo | google.protobuf.Int32Value | Gateway book sequence number |
| LinkedOrderCancellation | google.protobuf.Int32Value | Linked Order Cancellation |
| LinkedOrderRelationship | google.protobuf.Int32Value | Linked Order Relationship |
| Minmove | google.protobuf.Int32Value | Minimum movement |
| OmsClientType | google.protobuf.Int32Value | OMS client type |
| OrderFlags | google.protobuf.Int32Value | Order Flags |
| OrderFlags2 | google.protobuf.Int32Value | Order flag 2 |
| OrderResidual | google.protobuf.Int32Value | Residual volume |
| OriginalVolume | google.protobuf.Int32Value | Original volume of trade |
| PairImbalanceLimitType | google.protobuf.Int32Value | Pair imbalance limit type |
| PairLeg1BenchmarkType | google.protobuf.Int32Value | Pair Leg 1 Benchmark |
| PairLeg2BenchmarkType | google.protobuf.Int32Value | Pair Leg 2 Benchmark |
| PairSpreadType | google.protobuf.Int32Value | Pair Spread Type |
| Rank | google.protobuf.Int32Value | Rank |
| RemainingVolume | google.protobuf.Int32Value | Remaining volume |
| SharesAllocated | google.protobuf.Int32Value | Shares Allocated |
| 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 |

| Field Name | Data Type | Accepted Values/Examples |
|--------------------|----------------------------|---|
| SpreadLegPriceType | google.protobuf.Int32Value | Spread Leg Price Type |
| SpreadNumLegs | google.protobuf.Int32Value | Spread Number of Legs |
| Styp | google.protobuf.Int32Value | Security Type |
| TboAccountId | google.protobuf.Int32Value | Account ID |
| UtcOffset | google.protobuf.Int32Value | UTC Offset |
| Volume | google.protobuf.Int32Value | Order quantity |
| VolumeTraded | google.protobuf.Int32Value | Volume traded so far by the order |
| WorkingQty | google.protobuf.Int32Value | Quantity out in the market |
| Ask | string | Last ask price for symbol |
| Bid | string | Last bid price for symbol |
| OriginalPrice | string | Original Price |
| Price | string | Limit price submitted in order |
| StopPrice | string | Stop Price |
| StrikePrc | string | Price at which option can be exercised |
| Bank | string | Bank of trading account for selected position |
| 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 |
| CommissionCode | string | Broker Code |
| Currency | string | Currency of symbol being traded or Currency of Position |
| CurrentStatus | string | Current status of order (PENDING, LIVE, COMPLETED, or DELETED) |

| Field Name | Data Type | Accepted Values/Examples |
|------------------|-----------|---|
| 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.) |
| Exchange | string | Three-letter acronym for listing exchange |
| Route | string | Route name as shown in Eze EMS. NOTE: This field is also referred to as Exit Vehicle |
| FixTraderId | string | FIX Trader ID |
| GoodFrom | string | Time at which order is first valid for execution |
| GoodUntil | string | Time at which order is no longer valid (DAY, DAYPLUS, or custom value supported by destination) |
| LinkedOrderId | string | ID of Linked Order |
| NewRemoteId | string | New Remote Identification Code |
| OppositeParty | string | Contra (used by ARCAEX to signify liquidity added or removed) |
| 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 |
| OriginalTraderId | string | USERNAME@DOMAIN of the trader who placed the trade originally |
| PriceType | string | By default the price type is set to |

| Field Name | Data Type | Accepted Values/Examples |
|----------------|--------------------------|---|
| | | Market , in case no value is provided. Refer to section PriceTypeEnum |
| Putcallind | string | Option type (P = put, C = call, U = underlier) for symbol |
| Reason | string | Reason given by user or destination for changing, cancelling, or deleting the order |
| RefersTold | string | Refers to Identification Code |
| Remoteld | string | Remote ID |
| ShortLocateld | string | ID assigned to short sell orders as required by Regulation SHO |
| Table | string | Table |
| 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 |
| Type | string | Order Event Type. Refer to section Appendix A |
| Undersym | string | Underlier symbol |
| UserMessage | string | User Message/Notes |
| VolumeType | string | Indicates the fill type of the position for the symbol |
| NewsTime | google.protobuf.Duration | Time of most recent news story |
| TrdTime | google.protobuf.Duration | Time of last trade |

AllocationType

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

OrderType

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

TradeType

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

OrderInfoFilters

| Field Name | Data Type | Accepted Values/Examples |
|-------------------|-----------|--|
| IncludeOrders | bool | If set to True 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 section Appendix A: Order Event Types |
| IncludeExecutions | bool | If set to True you get ExchangeAcceptOrder, ExchangeTradeOrder, ExchangeBustOrder events in a DataFrame with row by row format as response If you wish to learn more about these order event types refer to section Appendix A: Order Event Types |

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 |
|------------|-----------|-----------|--|
| Symbol | Yes | string | Valid ticker symbol. Example: AAPL, IBM or VOD.LSE etc. |
| Side | Yes | string | BUY, SELL, SELLSHORT NOTE: To send an order with side SELLSHORT, the extended field SHORT_LOCATE_ID must be assigned. The SHORT_LOCATE_ID is an ID assigned to short sell orders. Similarly, to send a Buy To Cover order, set the side to BUY and assign the extended field TO_OPEN_POS to the required volume |
| Quantity | Yes | int32 | Value > 0 |
| Route | Yes | string | Route name as shown in Eze EMS. NOTE: This field is also referred to as Exit Vehicle |
| Account | Yes | string | Semi colon separated values that represent either Trade or Neutral accounts the user has permission to. Example: TAL;TEST;USER1;TRADE or TAL;TEST;USER2;NEUTRAL |
| OrderTag | No | string | Order Tag |
| TicketId | No | string | Ticket ID |
| UserToken | Yes | string | A server generated GUID that is given as response to the client during the first login |
| 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) |

| Field Name | Required? | Data Type | Accepted Values/Examples |
|----------------|-----------|-----------------------------|--|
| 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) |
| GoodFrom | No | google.protobuf.Timestamp | Time at which order is first valid for execution |
| 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 section ExpirationType |
| PriceType | No | PriceTypeEnum | By default the price type is set to Market , in case no value is provided. Refer to section PriceTypeEnum |
| Price | No | google.protobuf.DoubleValue | Limit price submitted in order |
| StopPrice | No | google.protobuf.DoubleValue | Stop Price |
| UserMessage | No | string | User Message/Notes |
| ExpirationDate | No | google.protobuf.Timestamp | Date at which order is no longer valid |

SubmitSingleOrderResponse

| Field Name | Data Type | Retrieves |
|----------------|---------------------|--|
| ServerResponse | string | success: in case the invoked API executes successfully on the server side failed: in case the invoked API throws an error or lands in an exception |
| 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 |

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 |
|----------------|-----------|-----------------------------|---|
| OrderId | Yes | string | A unique id associated to every order. This is the identifier to lookup the specific order to modify |
| Quantity | No | int32 | Value > 0 |
| UserToken | Yes | string | A server generated GUID that is given as response to the client during the first login |
| GoodFrom | No | google.protobuf.Timestamp | Time at which order is first valid for execution |
| 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 section ExpirationType |
| PriceType | No | PriceTypeEnum | By default the price type is set to Market , in case no value is provided. Refer to section PriceTypeEnum |
| Price | No | google.protobuf.DoubleValue | Limit price submitted in order |
| StopPrice | No | google.protobuf.DoubleValue | Stop Price |
| UserMessage | No | string | User Message/Notes |
| ExpirationDate | No | google.protobuf.Timestamp | Date at which order is no longer valid |
| OrderTag | No | string | Order Tag |

ChangeSingleOrderResponse

| Field Name | Data Type | Retrieves |
|----------------|---------------------|--|
| ServerResponse | string | success: in case the invoked API executes successfully on the server side failed: in case the invoked API throws an error or lands in an exception |
| 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 |

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 |
|----------------|---------------------|--|
| ServerResponse | string | success: in case the invoked API executes successfully on the server side failed: in case the invoked API throws an error or lands in an exception |
| 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 |

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 |
|---------------|-----------|-----------|---|
| Leg1_Symbol | Yes | string | Valid ticker symbol. Example: AAPL, IBM or VOD.LSE etc. |
| Leg1_Side | Yes | string | BUY, SELL, SELLSHORT |
| Leg1_Quantity | Yes | int32 | Value > 0 |
| Route | Yes | string | Route name as shown in Eze EMS. NOTE: This field is also referred to as Exit Vehicle |
| Leg2_Symbol | Yes | string | Valid ticker symbol. Example: AAPL, IBM or VOD.LSE etc. |
| Leg2_Side | Yes | string | BUY, SELL, SELLSHORT |
| Leg2_Quantity | Yes | int32 | Value > 0 |
| Account | Yes | string | Semi colon separated values that represent either Trade or Neutral accounts the user has permission to. Example: TAL;TEST;USER1;TRADE or TAL;TEST;USER2;NEUTRAL |
| UserToken | Yes | string | A server generated GUID that is given as response to the client during the first login |
| OrderTag | No | string | Order Tag |
| TicketId | No | string | Ticket ID |
| 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) |
| 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) |

SubmitPairOrderResponse

| Field Name | Data Type | Retrieves |
|----------------|---------------------|--|
| ServerResponse | string | success: in case the invoked API executes successfully on the server side failed: in case the invoked API throws an error or lands in an exception |
| 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 |

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

ChangePairOrderResponse

| Field Name | Data Type | Retrieves |
|----------------|-----------|---|
| ServerResponse | string | success: in case the invoked API executes successfully on the |

| Field Name | Data Type | Retrieves |
|----------------|---------------------|--|
| | | server side failed: in case the invoked API throws an error or lands in an exception |
| 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 |

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 CancelPairOrder the value of OrderId will be that of the Pair 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 |
|----------------|---------------------|--|
| ServerResponse | string | success: in case the invoked API executes successfully on the server side failed: in case the invoked API throws an error or lands in an exception |
| 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 |

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. Example: TAL;TEST;USER1;TRADE or TAL;TEST;USER2;NEUTRAL |
| Symbol | Yes | string | Valid ticker symbol. Example: AAPL, IBM or VOD.LSE etc. |
| 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 |
|----------------|---------------------|--|
| ServerResponse | string | success: in case the invoked API executes successfully on the server side failed: in case the invoked API throws an error or lands in an exception |
| 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 |

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 |
|-------------------|-----------|-----------|---|
| SubscriptionLevel | No | enum | FILL = 0; STATUS = 1 (This Field is deprecated) |

| 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 |

SubscribeOrderInfoResponse

| Field Name | Data Type | Retrieves |
|-----------------|-----------------------------|--|
| submitTime | google.protobuf.Timestamp | The time when the trade was submitted |
| OrderId | string | A unique id associated to every order. This is the identifier to lookup the specific order to cancel |
| LinkedOrderId | string | ID of Linked Order |
| RefersTold | string | Refers to Identification Code |
| TicketId | string | Ticket ID |
| OriginalOrderId | string | Original Order Identification Code |
| Symbol | string | Valid ticker symbol. Example: AAPL, IBM or VOD.LSE etc. |
| Type | string | Order Event Type. Refer to section Appendix A |
| CurrentStatus | string | Current status of order (PENDING, LIVE, COMPLETED, or DELETED) |
| TraderId | string | USERNAME@DOMAIN of the message recipient |
| ClaimedByClerk | string | Claimed By Clerk |
| Volume | int32 | Order quantity |
| 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 section PriceTypeEnum |
| Buyorsell | string | BUY, SELL, or SELLSHORT. This field will soon be deprecated. Alternatively, you can use the field Side |

| Field Name | Data Type | Retrieves |
|----------------|-----------------------------|---|
| PairSpreadType | string | Pair Spread Type |
| Reason | string | Reason given by user or destination for changing, cancelling, or deleting the order |
| TimeStamp | string | Timestamp applied to order by trading system |
| GoodFrom | google.protobuf.Timestamp | Time at which order is first valid for execution |
| TimeInForce | ExpirationType | Time or date at which order is no longer valid. Refer to section ExpirationType |
| StopPrice | google.protobuf.DoubleValue | Stop Price |
| UserMessage | string | User Message/Notes |
| ExpirationDate | google.protobuf.Timestamp | Date at which order is no longer valid |
| Side | string | BUY, SELL, SELLSHORT NOTE: To send an order with side SELLSHORT, the extended field SHORT_LOCATE_ID must be assigned. The SHORT_LOCATE_ID is an ID assigned to short sell orders. Similarly, to send a Buy To Cover order, set the side to BUY and assign the extended field TO_OPEN_POS to the required volume |
| Route | string | Route name as shown in Eze EMS. NOTE: This field is also referred to as Exit Vehicle |
| Account | string | Semi colon separated values that represent either Trade or Neutral accounts the user has permission to. Example: TAL;TEST;USER1;TRADE or TAL;TEST;USER2;NEUTRAL |
| OrderTag | string | Order Tag |
| 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 |
|-------------------------|---|
| SpreadNumLegs | Spread Number of Legs |
| SpreadLegCount | Number of legs this spread contains |
| LinkedOrderCancellation | Linked Order Cancellation |
| LinkedOrderRelationship | Linked Order Relationship |
| CommissionRateType | Commission Rate Type |
| Minmove | Minimum movement |
| RemainingVolume | Remaining volume |
| OrderResidual | Residual volume |
| SpreadLegNumber | Number of legs this spread contains |
| SpreadLegPriceType | Spread Leg Price Type |
| SpreadLegLeanPriority | Spread Leg Lean Priority |
| OrderFlags | Order Flags |
| FornexSourceFlags | Forex Source |
| ExternalAcceptanceFlag | External acceptance flag |
| ExtendedStateFlags2 | Extended state flags 2 |
| ExtendedStateFlags | Extended state information for internal use |
| CrossFlag | Cross flag |
| WorkingQty | Quantity out in the market |
| SpreadClipType | Spread Clip Type |
| PairLeg2BenchmarkType | Pair Leg 2 Benchmark |
| PairLeg1BenchmarkType | Pair Leg 1 Benchmark |
| SharesAllocated | Shares Allocated |
| PairImbalanceLimitType | Pair imbalance limit type |
| UtcOffset | UTC Offset |

| Key | Expected Values |
|------------------|--|
| OrderFlags2 | Order flag 2 |
| AcctType | Type of account for a position |
| Rank | Rank |
| GwBookSeqNo | Gateway book sequence number |
| DateIndex | Date index |
| BookId | Book ID |
| TboAccountId | Account ID |
| OmsClientType | OMS client type |
| ExecutionState | Execution state |
| OriginalVolume | Original volume of trade |
| Styp | Security Type |
| CommissionCode | Broker Code |
| ShortLocateId | ID assigned to short sell orders as required by Regulation SHO |
| Undersym | Underlier symbol |
| Putcallind | Option type (P = put, C = call, U = underlier) for symbol |
| OppositeParty | Contra (used by ARCAEX to signify liquidity added or removed) |
| Currency | Currency of symbol being traded or Currency of Position |
| RemotId | Remote ID |
| OriginalTraderId | USERNAME@DOMAIN of the trader who placed the trade originally |
| ClientOrderId | Client Order ID |
| NewRemotId | New Remote Identification Code |
| VolumeType | Indicates the fill type of the position for the symbol |
| Table | Table |
| TraderCapacity | Trader capacity |

| Key | Expected Values |
|--------------------|--|
| FixTraderId | FIX Trader ID |
| Exchange | Three-letter acronym for listing exchange |
| CommissionRate | Commission Rate |
| Commission | Net of commissions for today's trades for a symbol |
| AvgPrice | Average execution price for order so far |
| PairSpread | Pair Spread |
| AllocatedValue | Allocated value |
| EcnFee | ECN Fee |
| PairTarget | Pair Target |
| PairLeg2Benchmark | Pair Leg 2 Benchmark |
| PairLeg1Benchmark | Pair Leg 1 Benchmark |
| PairImbalanceLimit | Pair imbalance limit |
| PairCash | Pair cash component |
| PairRatio | Pair Ratio |
| SpreadClip | Spread clip |
| Latency6 | Latency |
| Latency3 | Latency |
| Basisvalue | Currency value of a unit move |
| Ask | Last ask price for symbol |
| Bid | Last bid price for symbol |
| OriginalPrice | Original Price |
| StrikePrc | Price at which option can be exercised |
| NewsDate | Date of most recent news story |
| NewsTime | Time of most recent news story |

| Key | Expected Values |
|---------|--------------------|
| TrdTime | Time of last trade |

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 section ServerAcknowledgement |

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 |
|------------|-----------|-------------------|--|
| UserToken | Yes | string | A server generated GUID that is given as response to the client during the first login |
| Orders | Yes | repeated OrderRow | Refer to section OrderRow |

BasketOrderResponse

| Field Name | Data Type | Retrieves |
|----------------|---------------------|--|
| ServerResponse | string | success: in case the invoked API executes successfully on the server side failed: in case the invoked API throws an error or lands in an exception |
| 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 |

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 |
|----------------|-----------|-----------|---|
| OrderId | Yes | string | A unique id associated to every order. This is the identifier to lookup the specific order to cancel |
| Symbol | Yes | string | Valid ticker symbol. Example: AAPL, IBM or VOD.LSE etc. |
| Exchange | Yes | string | Three-letter acronym for listing exchange |
| SourceAccount | Yes | string | Source account for the allocated order |
| TargetAccount | Yes | string | Destination account for the 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 |
| TargetPrice | No | int32 | Limit price of allocated order |
| UserToken | Yes | string | A server generated GUID that is given as response to the client during the first login |

| Field Name | Required? | Data Type | Accepted Values/Examples |
|------------------|-----------|----------------|---|
| TypeOfAllocation | Yes | AllocationType | Refer to section AllocationType |
| OrderTypes | Yes | OrderType | Refer to section OrderType |

SubmitAllocationOrderResponse

| Field Name | Data Type | Retrieves |
|----------------|---------------------|--|
| ServerResponse | string | success: in case the invoked API executes successfully on the server side failed: in case the invoked API throws an error or lands in an exception |
| 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 |

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 |
|------------|-----------|-----------|---|
| Symbol | Yes | string | Valid ticker symbol. Example: AAPL, IBM or VOD.LSE etc. |
| Side | Yes | string | BUY, SELL, SELLSHORT NOTE: To send an order with side SELLSHORT, the extended field SHORT_LOCATE_ID must be assigned. The SHORT_LOCATE_ID is an ID assigned to short sell orders. Similarly, to send a Buy To Cover order, set the side to BUY and assign the extended field TO_OPEN_POS to the required volume |
| Quantity | Yes | int32 | Value > 0 |
| Account | Yes | string | Semi colon separated values that represent either Trade or Neutral accounts the user has permission to. Example: |

| Field Name | Required? | Data Type | Accepted Values/Examples |
|------------|-----------|-----------|---|
| | | | TAL;TEST;USER1;TRADE or TAL;TEST;USER2;NEUTRAL |
| OrderType | Yes | TradeType | Refer to section TradeType |
| Route | Yes | string | Route name as shown in Eze EMS. NOTE: This field is also referred to as Exit Vehicle |
| 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 |
|----------------|---------------------|--|
| ServerResponse | string | success: in case the invoked API executes successfully on the server side failed: in case the invoked API throws an error or lands in an exception |
| 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 |

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 |
|------------|-----------|------------------|--|
| UserToken | Yes | string | A server generated GUID that is given as response to the client during the first login |
| Filters | Yes | OrderInfoFilters | Refer to section OrderInfoFilters |

SubscribeOrderInfoJsonResponse

| Field Name | Data Type | Retrieves |
|-----------------|-----------------------|--|
| OrderInfoJson | string | OrderInfo object is retrieved in JSON format |
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure) |

GetOrderDetailByOrderIdJson

The **OrderDetailByOrderIdJsonRequest** object is used as an input in **GetOrderDetailByOrderIdJson** 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.

OrderDetailByOrderIdJsonRequest

| 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 |
| OrderId | Yes | string | A unique id associated to every order |

OrderDetailByOrderIdJsonResponse

| Field Name | Data Type | Retrieves |
|-----------------|-----------------------|--|
| OrderDetail | string | OrderInfo object is retrieved in JSON format |
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure) |

GetOrderDetailByDateRangeJson

The **OrderDetailByDateRangeJsonRequest** object is used as an input in **GetOrderDetailByDateRangeJson** 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.

OrderDetailByDateRangeJsonRequest

| 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 |
| StartDate | Yes | google.protobuf.Timestamp StartDate | Indicate the start date for your order search query. Response to this query contains orders originating from StartDate |
| StartTime | No | google.protobuf.Duration StartTime | Provide the start time for your order search query. In case none is given, by default StartTime is taken as "00:00:00" |
| EndDate | Yes | google.protobuf.Timestamp EndDate | Indicate the end date for your order search query. Response to this query contains orders till the EndDate |
| EndTime | No | google.protobuf.Duration EndTime | Provide the end time for your order search query. In case none is given, by default EndTime is taken as "23:59:59" |
| TimeoutInSeconds | No | int32 | Time out interval for the API request |

OrderDetailByDateRangeJsonResponse

| Field Name | Data Type | Retrieves |
|-----------------|-----------------------|--|
| OrderDetail | string | OrderInfo object is retrieved in JSON format |
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure) |

Utilities

The following APIs are provided as part of Utilities:

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

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 |
|------------|-----------|-----------|--------------------------|
| UserName | Yes | string | A valid user name |
| Domain | Yes | string | A valid domain name |

StartLoginSrpResponse

| Field Name | Data Type | Retrieves |
|---------------|-----------|---|
| Status | string | Success or Failure of API call |
| srpTransactId | string | Unique transaction ID per user |
| srpSalt | string | This field is specific to SRP6 Protocol |
| srpN | string | This field is specific to SRP6 Protocol |
| srpg | string | This field is specific to SRP6 Protocol |
| srpb | string | This field is specific to SRP6 Protocol |
| Response | string | success: in case the invoked API executes successfully on the server side failed: in case the invoked API throws an error or lands in an exception |



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 |
|------------|-----------|-----------|--|
| Identity | Yes | string | A valid user identity (combination of username@domain) |

| Field Name | Required? | Data Type | Accepted Values/Examples |
|---------------|-----------|-----------|--|
| 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 |
| Domain | Yes | string | A valid domain name |
| Locale | Yes | string | The region the user wants to connect. Example: AMERICAS, ASIA etc. |

CompleteLoginSrpResponse

| Field Name | Data Type | Retrieves |
|------------|-----------|---|
| UserToken | string | A server generated GUID that is given as response to the client during the first login |
| Response | string | success: in case the invoked API executes successfully on the server side failed: in case the invoked API throws an error or lands in an exception |

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 |
|-------------|-----------|-----------|--|
| 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 |
| Domain | Yes | string | A valid domain name |
| OldPassword | Yes | string | Enter current password |
| NewPassword | Yes | string | Enter new password |

ChangePasswordSRPResponse

| Field Name | Data Type | Accepted Values/Examples |
|------------|-----------|--|
| status | string | A server generated GUID that is given as response to the client during the first login |
| message | string | Server response to change password SRP API |

Custom Data Type

Price

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

Position

| Field Name | Data Type | Accepted Values/Examples |
|---------------|-----------|--|
| AverageShort0 | double | The average price of the overnight short position for the symbol |
| HistShortPrc0 | double | Historic basis price of overnight short position |
| Shortpos0 | double | Remaining overnight short position |
| OrigShortpos0 | double | Start of Day Short Position |
| ScalpedProfit | double | Realized Profit/Loss for a position |

| Field Name | Data Type | Accepted Values/Examples |
|-------------------|-----------|---|
| Mmr | double | Maintenance Margin Required for a position |
| BoughtQty | double | Bought Order Quantity |
| SoldQty | double | Total number of shares sold |
| SoldShortQty | double | Total number of Short shares sold for the symbol |
| BoughtAvgPrc | double | Average price for order so far |
| SoldAvgPrc | double | Sold Average Price |
| SoldShortAvgPrc | double | Average price of Short shares sold for the symbol |
| Commission | double | Net of commissions for today's trades for a symbol |
| Shortpos | double | Short Position |
| AverageShort | double | Average Price Short |
| OrigLongpos0 | double | Start of Day Long Position |
| Longpos0 | double | Remianing overnight long position |
| AverageLong | double | Average Price Long |
| Longpos | double | Long Position |
| AverageLong0 | double | The average prize of the overnight long position for the symbol |
| HistLongPrc0 | double | Historic basis price of overnight long position |
| NetFees | double | Sum of all trading fees for a position from today's trades |
| HistScalpedProfit | double | The sum of Hist Scalped Profit and Hist Net P&L, plus any commissions and fees for the position |
| Table | string | Table |
| Bank | string | Bank of trading account for selected position |
| 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 |

| Field Name | Data Type | Accepted Values/Examples |
|--------------|-----------|---|
| Currency | string | Currency of symbol being traded or Currency of Position |
| DispName | string | 'IBM' (Symbol formats are datafeed-specific. Check your Feed Handler help file for the correct format.) |
| Undersym | string | Underlier symbol |
| AcctType | int32 | Type of account for a position |
| TboAccountId | int32 | Account ID |
| Rank | int32 | Rank |
| Styp | int32 | Security Type |

AggregatePositionRecord

| Field Name | Data Type | Accepted Values/Examples |
|---------------------|-----------|--|
| SoldShortQty | double | Total number of Short shares sold for the symbol |
| SoldQty | double | Sold Order Quantity |
| BoughtAvgPrc | double | Average price shares bought |
| BoughtQty | double | Bought Order Quantity |
| IntradayShortAvgPrc | double | Average Intraday execution price for Short order |
| IntradayShortPos | double | Intraday Short Position |
| ShortAvgPrc | double | Short Average Price |
| ShortPos | double | Short Position |
| IntradayLongAvgPrc | double | Intraday Average Price Long |
| IntradayLongPos | double | Intraday Long Position |
| LongAvgPrc | double | Average Price Long |
| LongPos | double | Long Position |
| IntradayAvgPrc | double | Intraday Average Price |
| IntradayPos | double | Intraday Position |

| Field Name | Data Type | Accepted Values/Examples |
|-----------------|-----------|---|
| TotalAvgPrc | double | Total Average execution price for order so far |
| TotalPos | double | Total Position |
| SoldAvgPrc | double | Sold Average Price |
| SoldShortAvgPrc | double | Sold Short Average Price |
| DispName | string | 'IBM' (Symbol formats are datafeed-specific. Check your Feed Handler help file for the correct format.) |
| Deposit | string | Deposit or account name for selected position |
| Customer | string | Customer name of trading account for selected position |
| Branch | string | Branch of trading account for selected position |
| Bank | string | Bank of trading account for selected position |

OrderResponse

| Field Name | Data Type | Retrieves |
|-----------------|---------------------------|--|
| submitTime | google.protobuf.Timestamp | The time when the trade was submitted |
| OrderId | string | A unique id associated to every order. This is the identifier to lookup the specific order to cancel |
| LinkedOrderId | string | ID of Linked Order |
| RefersTold | string | Refers to Identification Code |
| TicketId | string | Ticket ID |
| OriginalOrderId | string | Original Order Identification Code |
| Symbol | string | Valid ticker symbol. Example: AAPL, IBM or VOD.LSE etc. |
| Type | string | Order Event Type. Refer to section Appendix A |
| CurrentStatus | string | Current status of order (PENDING, LIVE, COMPLETED, or DELETED) |
| TraderId | string | USERNAME@DOMAIN of the message recipient |

| Field Name | Data Type | Retrieves |
|----------------|-----------------------------|---|
| ClaimedByClerk | string | Claimed By Clerk |
| Volume | int32 | Order quantity |
| 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 section PriceTypeEnum |
| Buyorsell | string | BUY, SELL, or SELLSHORT. This field will soon be deprecated. Alternatively, you can use the field Side |
| PairSpreadType | string | Pair Spread Type |
| Reason | string | Reason given by user or destination for changing, cancelling, or deleting the order |
| TimeStamp | string | Timestamp applied to order by trading system |
| GoodFrom | google.protobuf.Timestamp | Time at which order is first valid for execution |
| TimeInForce | ExpirationType | Time or date at which order is no longer valid. Refer to section ExpirationType |
| StopPrice | google.protobuf.DoubleValue | Stop Price |
| UserMessage | string | User Message/Notes |
| ExpirationDate | google.protobuf.Timestamp | Date at which order is no longer valid |
| Side | string | BUY, SELL, SELLSHORT NOTE: To send an order with side SELLSHORT, the extended field SHORT_LOCATE_ID must be assigned. The SHORT_LOCATE_ID is an ID assigned to short sell orders. Similarly, to send a Buy To Cover order, set the side to BUY and assign the extended field TO_OPEN_POS to the required volume |
| Route | string | Route name as shown in Eze EMS. NOTE: This field is also referred to as Exit Vehicle |
| Account | string | Semi colon separated values that represent |

| Field Name | Data Type | Retrieves |
|--------------|-----------|--|
| | | either Trade or Neutral accounts the user has permission to Example: TAL;TEST;USER1;TRADE or TAL;TEST;USER2;NEUTRAL |
| OrderTag | string | Order Tag |
| 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 |
|-------------------------|---|
| SpreadNumLegs | Spread Number of Legs |
| SpreadLegCount | Number of legs this spread contains |
| LinkedOrderCancellation | Linked Order Cancellation |
| LinkedOrderRelationship | Linked Order Relationship |
| CommissionRateType | Commission Rate Type |
| Minmove | Minimum movement |
| RemainingVolume | Remaining volume |
| OrderResidual | Residual volume |
| SpreadLegNumber | Number of legs this spread contains |
| SpreadLegPriceType | Spread Leg Price Type |
| SpreadLegLeanPriority | Spread Leg Lean Priority |
| OrderFlags | Order Flags |
| FornexSourceFlags | Forex Source |
| ExternalAcceptanceFlag | External acceptance flag |
| ExtendedStateFlags2 | Extended state flags 2 |
| ExtendedStateFlags | Extended state information for internal use |

| Key | Expected Values |
|------------------------|--|
| CrossFlag | Cross flag |
| WorkingQty | Quantity out in the market |
| SpreadClipType | Spread Clip Type |
| PairLeg2BenchmarkType | Pair Leg 2 Benchmark |
| PairLeg1BenchmarkType | Pair Leg 1 Benchmark |
| SharesAllocated | Shares Allocated |
| PairImbalanceLimitType | Pair imbalance limit type |
| UtcOffset | UTC Offset |
| OrderFlags2 | Order flag 2 |
| AcctType | Type of account for a position |
| Rank | Rank |
| GwBookSeqNo | Gateway book sequence number |
| DateIndex | Date index |
| BookId | Book ID |
| TboAccountId | Account ID |
| OmsClientType | OMS client type |
| ExecutionState | Execution state |
| OriginalVolume | Original volume of trade |
| Styp | Security Type |
| CommissionCode | Broker Code |
| ShortLocateId | ID assigned to short sell orders as required by Regulation SHO |
| Undersym | Underlier symbol |
| Putcallind | Option type (P = put, C = call, U = underlier) for symbol |
| OppositeParty | Contra (used by ARCAEX to signify liquidity added or removed) |

| Key | Expected Values |
|--------------------|---|
| Currency | Currency of symbol being traded or Currency of Position |
| Remoteld | Remote ID |
| OriginalTraderId | USERNAME@DOMAIN of the trader who placed the trade originally |
| ClientOrderId | Client Order ID |
| NewRemoteld | New Remote Identification Code |
| VolumeType | Indicates the fill type of the position for the symbol |
| Table | Table |
| TraderCapacity | Trader capacity |
| FixTraderId | FIX Trader ID |
| Exchange | Three-letter acronym for listing exchange |
| CommissionRate | Commission Rate |
| Commission | Net of commissions for today's trades for a symbol |
| AvgPrice | Average execution price for order so far |
| PairSpread | Pair Spread |
| AllocatedValue | Allocated value |
| EcnFee | ECN Fee |
| PairTarget | Pair Target |
| PairLeg2Benchmark | Pair Leg 2 Benchmark |
| PairLeg1Benchmark | Pair Leg 1 Benchmark |
| PairImbalanceLimit | Pair imbalance limit |
| PairCash | Pair cash component |
| PairRatio | Pair Ratio |
| SpreadClip | Spread clip |
| Latency6 | Latency |

| Key | Expected Values |
|---------------|--|
| Latency3 | Latency |
| Basisvalue | Currency value of a unit move |
| Ask | Last ask price for symbol |
| Bid | Last bid price for symbol |
| OriginalPrice | Original Price |
| StrikePrc | Price at which option can be exercised |
| NewsDate | Date of most recent news story |
| NewsTime | Time of most recent news story |
| TrdTime | Time of last trade |

OrderInfo

| Field Name | Data Type | Retrieves |
|--------------|-----------|---|
| AveragePrice | double | Average execution price for order so far |
| AccountType | int | Type of account used in trade (cash, long, or short) |
| SecurityType | int | Security type for the symbol being traded |
| Volume | int | Order quantity |
| VolumeTraded | int | Volume traded so far by the order |
| Price | decimal | Limit price submitted in order |
| StopPrice | decimal | Stop Price |
| StrikePrc | decimal | Price at which option can be exercised |
| Account | string | Semi colon separated values that represent either Trade or Neutral accounts the user has permission to. Example: TAL;TEST;USER1;TRADE or TAL;TEST;USER2;NEUTRAL |
| Side | string | BUY, SELL, SELLSHORT NOTE: To send an order with side SELLSHORT, the extended field SHORT_LOCATE_ID must be assigned. The SHORT_ |

| Field Name | Data Type | Retrieves |
|-----------------|----------------|---|
| | | LOCATE_ID is an ID assigned to short sell orders. Similarly, to send a Buy To Cover order, set the side to BUY and assign the extended field TO_OPEN_POS to the required volume |
| 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) |
| Symbol | string | Valid ticker symbol. Example: AAPL, IBM or VOD.LSE etc. |
| Exchange | string | Three-letter acronym for listing exchange |
| Route | string | Route name as shown in Eze EMS. NOTE: This field is also referred to as Exit Vehicle |
| GoodFrom | string | Time at which order is first valid for execution |
| TimeInForce | ExpirationType | Time at which order is no longer valid. Refer to section ExpirationType |
| 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 |
| PriceType | PriceTypeEnum | By default the price type is set to Market , in case no value is provided. Refer to section PriceTypeEnum |
| OptionType | string | Option type (Put/Call) for symbol |
| Reason | string | Reason given by user or destination for changing, cancelling, or deleting the order |
| RefersTold | string | Refers to Identification Code |
| ShortLocateId | string | ID assigned to short sell orders as required by Regulation SHO |
| TicketId | string | Ticket ID |

| Field Name | Data Type | Retrieves |
|-----------------|-----------|---|
| TimeStamp | string | Timestamp applied to order by trading system |
| TraderId | string | USERNAME@DOMAIN of the message recipient |
| OrderEventType | string | Order event type e.g., UserSubmitOrder, UserSubmitStagedOrder or UserSubmitCompoundOrder etc. |
| UnderlierSymbol | string | Underlier symbol |
| UserMessage | string | User Message/Notes |
| VolumeType | string | Indicates the fill type of the position for the symbol |
| TradeTime | TimeSpan | Time of trade |
| ExpirationDate | DateTime? | Date at which order is no longer valid |

DepositRow

| Field Name | Data Type | Accepted Values/Examples |
|--------------------|-----------|--|
| Mmr0Adj | double | Overnight Maintenance Margin Release amount |
| Sma0 | double | Uploaded information for special memorandum account requirement |
| Sma0Adj | double | Adjustment to overnight SMA requirement |
| HouseExcess0 | double | Overnight House Excess |
| Orq0 | double | Morning Orq |
| Cost | double | Cost |
| Mmr0NonDaytradeAdj | double | Adjustment to Overnight Maintenance Margin requirement |
| SrvPendingMargin | double | Margin for Outstanding Trades as calculated by Tradeserver. Only available for accounts that are configured for this feature |
| Commission | double | Net of commissions for today's trades for a symbol |
| NetFees | double | Sum of all trading fees for a position from today's trades |
| HistScalpedProfit | double | Historical realized P&L |

| Field Name | Data Type | Accepted Values/Examples |
|----------------|-----------|---|
| CashBalanceAdj | double | Cash Balance Adjustment |
| ScalpedProfit | double | Realized Profit/Loss for a position |
| Mmr | double | Maintenance Margin Required for a position |
| Mmr0 | double | Margin requirement for a overnight position |
| Marketvalue0 | double | Start of Day Market value |
| CashBalance | double | Cash Balance |
| EquityBalance | double | Equity Balance |
| ExtraCbp | double | Cash Credit for the account |
| MinBalance | double | Minimum amount of excess equity to trade |
| MaxOrderSize | double | Maximum Order Size allowed in an account |
| ExcessEq0 | double | Start of day Excess Equity |
| ExcessEq | double | Excess Equity |
| PendingMargin | double | Pending Margin for this order |
| CbpRemaining | double | Available Funds (Funds - Margin requirements) |
| Table | string | Table |
| Bank | string | Bank of trading account for selected position |
| 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 |
| Currency | string | Currency of symbol being traded or Currency of Position |
| TboAccountId | int32 | Account ID |
| DaysBack | int32 | The number of days worth of bars to retrieve |
| Rank | int32 | Rank |

BookOrder

Following is the structure of "BookOrder".

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

StrategyListRow

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

ServerAcknowledgement

| Field Name | Data Type | Retrieves |
|----------------|-----------|---|
| ServerResponse | string | success: in case the invoked API executes successfully on the server side |

| Field Name | Data Type | Retrieves |
|----------------|---------------------|--|
| | | failed: in case the invoked API throws an error or lands in an exception |
| 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 |

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>Day: Expiration is set for 24 hours after order submission</p> <p>GTC: Good Till Cancel Order. As the name suggests, this type of order will theoretically stay live forever until canceled or filled</p> <p>GTX: 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>CLO: 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>OPG: Opening order. Commonly known as MOO i.e., an order that will be executed at the day's opening price.</p> <p>IOC: 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>GTD: Good Till Date order. User must specify the expiration date in the field ExpirationDate in order to place a GTD order</p> |

| Field Name | Data Type | Accepted Values/Examples |
|------------|-----------|--|
| | | OTHER: Any expiry type that is not mentioned above, but is present on EMS |

PriceTypeEnum

| Field Name | Data Type | Accepted Values/Examples |
|----------------|-----------|--|
| PriceTypesEnum | enum | <p>Market = 0; Limit = 1; StopMarket = 2; StopLimit = 3; Other = 4;</p> <p>Market: An order to buy/sell a security at the most recent market price</p> <p>Limit: 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>StopMarket: This order allows the trader to lock in a certain profit and loss (P&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>StopLimit: 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>Other: Any price type that is not mentioned above, but is present on EMS</p> |

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 |
|------------|-----------|-----------|--|
| UserName | Yes | string | A valid user name |
| Domain | Yes | string | A valid domain name |
| Password | Yes | string | A valid password |
| Locale | Yes | string | The region the user wants to connect. Example: |

| Field Name | Required? | Data Type | Accepted Values/Examples |
|------------|-----------|-----------|--------------------------|
| | | | AMERICAS, ASIA etc. |

ConnectResponse

| Field Name | Data Type | Retrieves |
|------------|-----------|--|
| UserToken | string | A server generated GUID that is given as response to the client during the first login |
| Response | string | A valid user token |

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 |
|----------------|---------------------|--|
| ServerResponse | string | success: in case the invoked API executes successfully on the server side failed: in case the invoked API throws an error or lands in an exception |
| 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 |

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 |
|------------------|-----------|-----------|--|
| UserToken | Yes | string | A server generated GUID that is given as response to the client during the first login |
| TimeoutInSeconds | No | int32 | Time out interval for the API request |

TodaysBalancesResponse

| Field Name | Data Type | Retrieves |
|-----------------|-----------------------|---|
| DepositList | repeated DepositRow | Refer to section DepositRow |
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to section ServerAcknowledgement |

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 |
|------------------------|-----------|-----------|--|
| UserToken | Yes | string | A server generated GUID that is given as response to the client during the first login |
| TimeoutInSeconds | No | int32 | Time out interval for the API request |
| IncludeUserSubmitOrder | No | bool | Boolean Flag to filter the order responses based on order type UserSubmitOrder |

| Field Name | Required? | Data Type | Accepted Values/Examples |
|--------------------------------|-----------|-----------|--|
| IncludeUserSubmitStagedOrder | No | bool | Boolean Flag to filter the order responses based on order type UserSubmitStagedOrder |
| IncludeUserSubmitCompoundOrder | No | bool | Boolean Flag to filter the order responses based on order type UserSubmitCompoundOrder |
| IncludeForeignExecution | No | bool | Boolean Flag to filter the order responses based on order type ForeignExecution |
| IncludeUserSubmitChange | No | bool | Boolean Flag to filter the order responses based on order type UserSubmitChange |
| IncludeUserSubmitCancel | No | bool | Boolean Flag to filter the order responses based on order type UserSubmitCancel |
| 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 |
| IncludeUserSubmitTradeReport | No | bool | Boolean Flag to filter the order responses based on order type UserSubmitTradeReport |
| 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 |
| IncludeClerkReject | No | bool | Boolean Flag to filter the order responses based on order type ClerkReject |

TodaysActivityResponse

| Field Name | Data Type | Retrieves |
|-----------------|------------------------|---|
| OrderRecordList | repeated OrderResponse | Refer to section OrderResponse |
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to section ServerAcknowledgement |

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 |
|------------------|-----------|-----------|--|
| UserToken | Yes | string | A server generated GUID that is given as response to the client during the first login |
| TimeoutInSeconds | No | int32 | Time out interval for the API request |

TodaysBrokenDownPositionsResponse

| Field Name | Data Type | Retrieves |
|-----------------|-----------------------|---|
| PositionRecords | repeated Position | Refer to section Position |
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to section ServerAcknowledgement |

GetTodaysNetPositions

The **TodaysNetPositionsRequest** object is used as an input in **GetTodaysNetPositions** API. This API is used to fetch the net position details for the current day.

TodaysNetPositionsRequest

| 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 |
| TimeoutInSeconds | No | int32 | Time out interval for the API request |

TodaysNetPositionsResponse

| Field Name | Data Type | Retrieves |
|------------------------|-------------------------------------|---|
| AggregatePositionsList | repeated AggregatePositionRecord | Refer to section AggregatePositionRecord |
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to section ServerAcknowledgement |

GetTodaysActivityBook

The **TodaysActivityBookRequest** object is used as an input in **GetTodaysActivityBook** API. This API is used to request all your activities during the trading day.

TodaysActivityBookRequest

| 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 |
| OrderTypeFlags | No | int32 | Deprecated |
| TimeoutInSeconds | No | int32 | Time out interval for the API request |

TodaysActivityBookResponse

| Field Name | Data Type | Retrieves |
|-----------------|-----------------------|--|
| BookList | repeated BookOrder | Refer to section BookOrder |
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer |

| Field Name | Data Type | Retrieves |
|------------|-----------|--|
| | | to section ServerAcknowledgement |

SubscribeHeartBeat

The **SubscribeHeartBeatRequest** object is used as an input in **SubscribeHeartBeat** 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 |
|------------------|-----------|-----------|--|
| UserToken | Yes | string | A server generated GUID that is given as response to the client during the first login |
| TimeoutInSeconds | No | int32 | Time out interval for the API request |

SubscribeHeartBeatResponse

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

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 |
|------------|-----------|-----------|--|
| UserToken | Yes | string | A server generated GUID that is given as response to the client during the first login |
| FirmName | Yes | string | Firm name |

StrategyListResponse

| Field Name | Data Type | Retrieves |
|-----------------|--------------------------|---|
| StrategyList | repeated StrategyListRow | Refer to section StrategyListRow |
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to section ServerAcknowledgement |

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 |
|--------------------------------|-----------|-----------|--|
| UserToken | Yes | string | A server generated GUID that is given as response to the client during the first login |
| TimeoutInSeconds | No | int32 | Time out interval for the API request |
| 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 |
| IncludeUserSubmitCompoundOrder | No | bool | Boolean Flag to filter the order responses based on order type UserSubmitCompoundOrder |
| IncludeForeignExecution | No | bool | Boolean Flag to filter the order responses based on order type ForeignExecution |
| IncludeUserSubmitChange | No | bool | Boolean Flag to filter the order responses based on order type UserSubmitChange |

| Field Name | Required? | Data Type | Accepted Values/Examples |
|-------------------------------|-----------|-----------|---|
| IncludeUserSubmitCancel | No | bool | Boolean Flag to filter the order responses based on order type UserSubmitCancel |
| 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 |
| IncludeUserSubmitTradeReport | No | bool | Boolean Flag to filter the order responses based on order type UserSubmitTradeReport |
| 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 |
| IncludeClerkReject | No | bool | Boolean Flag to filter the order responses based on order type ClerkReject |

TodaysActivityJsonResponse

| Field Name | Data Type | Retrieves |
|--------------------|-----------------------|---|
| TodaysActivityJson | string | OrderInfo object is retrieved in JSON format |
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to section ServerAcknowledgement |

MarketData

The following APIs are provided as part of MarketData:

| API Name | Input | Output |
|-----------------------------------|---------------------------------------|--|
| GetDailyWeeklyMonthlyBars | DailyWeeklyMonthlyBarsRequest | DailyWeeklyMonthlyBarsResponse |
| GetIntradayBars | IntradayBarsRequest | IntradayBarsResponse |
| GetOptionChainForUnderlier | OptionChainRequest | OptionChainResponse |
| GetSymbolReferenceData | SymbolReferenceDataRequest | SymbolReferenceDataResponse |
| GetTickData | TickDataRequest | TickDataResponse |
| GetOptionsAndGreekData | OptionsAndGreekDataRequest | OptionsAndGreekDataResponse |
| GetSecurityData | SecurityDataRequest | SecurityDataResponse |
| GetOptionSymbolFromDescription | OptionSymbolFromDescriptionRequest | OptionSymbolFromDescriptionResponse |
| GetDescriptionFromOptionSymbol | DescriptionFromOptionSymbolRequest | DescriptionFromOptionSymbolResponse |
| SubscribeLevel1Ticks | Level1MarketDataRequest | stream Level1MarketDataResponse |
| UnSubscribeLevel1Data | UnSubscribeLevel1DataRequest | UnSubscribeLevel1DataResponse |
| SubscribeLevel2Ticks | Level2MarketDataRequest | stream Level2MarketDataResponse |
| UnSubscribeLevel2Data | UnSubscribeLevel2DataRequest | UnSubscribeLevel2DataResponse |
| AddSymbols | AddSymbolsRequest | AddSymbolsResponse |
| RemoveSymbols | RemoveSymbolsRequest | RemoveSymbolsResponse |
| GetSymbolsFromCompanyName | SymbolsFromCompanyNameRequest | SymbolsFromCompanyNameResponse |
| GetSymbolFromAlternateSymbolology | SymbolFromAlternateSymbolologyRequest | SymbolFromAlternateSymbolologyResponse |

Custom Data Type

OptionTypes

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

Interval

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

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 |

CommonBarsFields

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

SecurityData

| Field Name | Data Type | Accepted Values/Examples |
|------------|---------------------------|--------------------------------|
| Divpaydate | google.protobuf.Timestamp | Date on which dividend is paid |

| Field Name | Data Type | Accepted Values/Examples |
|---------------------|-----------------------------|---|
| Exdivdate | google.protobuf.Timestamp | Ex-Div Date |
| High52Date | google.protobuf.Timestamp | Date on which 52-week high was reached |
| Low52Date | google.protobuf.Timestamp | Date on which 52-week low was reached |
| ProcDate | google.protobuf.Timestamp | Process date |
| SplitDate1 | google.protobuf.Timestamp | Date of first split |
| Adx14d1d | google.protobuf.DoubleValue | ADX 14d |
| BollingerLower21d1d | google.protobuf.DoubleValue | Bollinger Lower 21d |
| BollingerUpper21d1d | google.protobuf.DoubleValue | 21-day upper envelope |
| Close10davg1d | google.protobuf.DoubleValue | 10-day average price |
| Close200davg1d | google.protobuf.DoubleValue | 200-day average price |
| Close20davg1d | google.protobuf.DoubleValue | 20-day average price |
| Close50davg1d | google.protobuf.DoubleValue | 50-day average price |
| Close5davg1d | google.protobuf.DoubleValue | 5-day average price |
| High15dmax1d | google.protobuf.DoubleValue | 15-day High |
| Hlvolatility10d1d | google.protobuf.DoubleValue | 10-day High/Low volatility |
| Low15dmin1d | google.protobuf.DoubleValue | 15-day Low |
| Minusdi14d1d | google.protobuf.DoubleValue | 14-day Minus Directional Indicator |
| Plusdi14d1d | google.protobuf.DoubleValue | 14-day Plus Directional Indicator |
| Rsi14d1d | google.protobuf.DoubleValue | Value of 14-day Relative Strength Index |
| Rsi25d1d | google.protobuf.DoubleValue | Value of 25-day Relative Strength Index |
| Rsi9d1d | google.protobuf.DoubleValue | Value of 9-day Relative Strength Index |

| Field Name | Data Type | Accepted Values/Examples |
|------------------|-----------------------------|---|
| SplitFactor1 | google.protobuf.DoubleValue | Factor of most recent split for symbol |
| Volume10davg1d | google.protobuf.DoubleValue | 10-day average volume |
| Volume200davg1d | google.protobuf.DoubleValue | 200-day average volume |
| Volume20davg1d | google.protobuf.DoubleValue | 20-day average volume |
| Volume50davg1d | google.protobuf.DoubleValue | 50-day average volume |
| Volume5davg1d | google.protobuf.DoubleValue | 5-day average volume |
| DividendFreqN | google.protobuf.Int32Value | Dividend frequency (per year) |
| SecurityCategory | google.protobuf.Int32Value | SIC code |
| SharesOut | google.protobuf.Int32Value | Shares outstanding |
| Beta | Price | Calculated using data from the S&P 500 portfolio for 12 months prior to the current month |
| Dividend | Price | Last reported dividend to be paid to shareholders (per share) |
| DividendRate | Price | Indicated annual dividend rate based on latest payment |
| DividendYield | Price | Dividend paid per share vs. share price |
| Earnings | Price | Net income for the company represented by the selected symbol |
| High52 | Price | Highest traded price for a share in the last 52 weeks |
| Low52 | Price | Lowest traded price for a share in the last 52 weeks |
| MgSicm | Price | Short interest for current month |
| MktCap | Price | Market Capitalization |
| Peratio | Price | A ratio which calculates current share price vs. per-share earnings |

| Field Name | Data Type | Accepted Values/Examples |
|------------------------|-----------|--|
| BloombergCode | string | Bloomberg symbol code associated with order |
| BloombergCodeComposite | string | Bloomberg code composite |
| 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.) |
| 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 |
| IssuersSectorStr | string | Indicates the market sector to which the security belongs, in relation to type |
| PrimaryExchange | string | Primary Exchange |
| 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 |

SymbolData

| 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.) |
| ExchName | string | Three-letter acronym for listing exchange |
| Styp | google.protobuf.Int32Value | Security Type |
| SymbolDesc | string | Symbol description |
| IsinNo | string | International ID assigned to all securities foreign or domestic |
| Country | string | Country of exchange where stock is listed |
| CommodityName | string | Name of the contract for a commodity |
| BloombergCode | string | Bloomberg symbol code associated with order |
| BloombergCodeFull | string | Full Bloomberg code |
| BloombergCodeComposite | string | Bloomberg code composite |
| 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 |
| GicsSector | string | Sector code as specified by Global Industry Classification Standard (GICS) |
| GicsIndustry | string | Industry code as specified by Global Industry Classification Standard (GICS) |
| GicsSubindustry | string | Sub-industry code as specified by Global Industry Classification Standard (GICS) |

| Field Name | Data Type | Accepted Values/Examples |
|------------|-----------|---|
| Cusip | string | ID assigned to all North American stocks and registered bonds |

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 |

QuoteChainResponse

| 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 |
| SymbolDesc | string | Symbol description |
| TrdUnits | string | Units for expressing prices for this symbol |
| CommodityName | string | Name of the contract for a commodity |
| Styp | google.protobuf.Int32Value | Security Type |
| Session | google.protobuf.Int32Value | Session indicator (specified by data feed) |
| Minmove | google.protobuf.Int32Value | Minimum movement |
| Basisvalue | google.protobuf.DoubleValue | Currency value of a unit move |

SymInfoResponse

| Field Name | Data Type | Retrieves |
|------------|----------------------------|---|
| Styp | google.protobuf.Int32Value | Security Type |
| DispName | string | 'IBM' (Symbol formats are datafeed-specific. Check your Feed Handler help |

| Field Name | Data Type | Retrieves |
|------------------------|-----------|---|
| | | file for the correct format.) |
| BloombergCode | string | Bloomberg symbol code associated with order |
| BloombergCodeFull | string | Full Bloomberg code |
| BloombergCodeComposite | string | Bloomberg code composite |
| ExchName | string | Three-letter acronym for listing exchange |
| SymbolDesc | string | Symbol description |

TicksResponse

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

OptionCalculationResponse

| Field Name | Data Type | Retrieves |
|------------|-----------------------------|---|
| Model | google.protobuf.Int32Value | Option model used in the calculation |
| Theta | google.protobuf.DoubleValue | A measure of a rate of decline in the value of an option due to the passage of time |

| Field Name | Data Type | Retrieves |
|----------------|-----------------------------|--|
| Gamma | google.protobuf.DoubleValue | Rate of change for delta with respect to the underlying asset's price |
| Vega | google.protobuf.DoubleValue | The amount that the price of an option changes compared to a 1% change in volatility |
| 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 |
| Premium | google.protobuf.DoubleValue | Displays a calculated theoretical value for an option or warrant |
| ImpliedVol | google.protobuf.DoubleValue | The estimated volatility of a security's price |
| DividendAmout6 | google.protobuf.DoubleValue | 6th Dividend Amount |
| DividendAmout5 | google.protobuf.DoubleValue | 5th Dividend Amount |
| DividendAmout4 | google.protobuf.DoubleValue | 4th Dividend Amount |
| DividendAmout3 | google.protobuf.DoubleValue | 3rd Dividend Amount |
| DividendAmout2 | google.protobuf.DoubleValue | 2nd Dividend Amount |
| DividendAmout1 | google.protobuf.DoubleValue | 1st Dividend Amount |
| Rate | google.protobuf.DoubleValue | Interest rate used in the calculation |
| TimeToExpire | google.protobuf.DoubleValue | Time to expiration |
| UnderlierPrice | Price | Underlier Price at time of order placement |
| OriginalPrice | Price | Original Price |
| StrikePrice | Price | Price at which option can be exercised |
| DividendDate6 | google.protobuf.Timestamp | 6th Dividend Date |
| DividendDate5 | google.protobuf.Timestamp | 5th Dividend Date |
| DividendDate4 | google.protobuf.Timestamp | 4th Dividend Date |
| DividendDate3 | google.protobuf.Timestamp | 3rd Dividend Date |
| DividendDate2 | google.protobuf.Timestamp | 2nd Dividend Date |

| Field Name | Data Type | Retrieves |
|---------------|---------------------------|---|
| DividendDate1 | google.protobuf.Timestamp | 1st Dividend Date |
| PutCallId | string | Put/Call ID |
| DispName | string | 'IBM' (Symbol formats are datafeed-specific. Check your Feed Handler help file for the correct format.) |
| UnderSym | string | Underlier symbol |
| OptionRoot | string | Option root for all expiration months and instrument types |

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 |
|------------|----------------------------|--|
| UserToken | string | A server generated GUID that is given as response to the client during the first login |
| Symbol | string | Valid ticker symbol. Example: AAPL, IBM or VOD.LSE etc. |
| Interim | Interval | Refer to section Interval |
| StopDate | google.protobuf.Timestamp | Stop date (LME - used with start date only) |
| DaysBack | google.protobuf.Int32Value | 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 |
| Request | bool | If set to True , a current snapshot of the data will be retrieved |
| Advise | bool | If set to True , real-time updates from the server will be registered for |

DailyWeeklyMonthlyBarsResponse

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

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 |
|-----------------|----------------------------|---|
| UserToken | string | A server generated GUID that is given as response to the client during the first login |
| Symbol | string | Valid ticker symbol. Example: AAPL, IBM or VOD.LSE etc. |
| BarInterval | int32 | Bar interval in minutes |
| DaysBack | int32 | The number of days worth of bars to retrieve |
| 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 |
| 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 |
| requestId | google.protobuf.Int32Value | A user-supplied request ID that can be used to disambiguate response data |
| StartAtMidnight | bool | If set to True , the first bar of the day includes all |

| Field Name | Data Type | Accepted Values/Examples |
|------------|-----------|---|
| | | data since midnight, otherwise the first bar of the day includes all data since the session open time |
| Request | bool | If set to True , a current snapshot of the data will be retrieved |
| Advise | bool | If set to True , real-time updates from the server will be registered for |

IntradayBarsResponse

| Field Name | Data Type | Retrieves |
|-----------------|-----------------------|---|
| Bars | CommonBarsFields | Refer to section CommonBarsFields |
| TrdTim1 | repeated string | Trade time |
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to section ServerAcknowledgement |

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 |
|-------------|-------------|---|
| UserToken | string | A server generated GUID that is given as response to the client during the first login |
| Root | string | Symbol root for option |
| Expiration | string | Time at which order is no longer valid (DAY, DAYPLUS, or custom value supported by destination) |
| OptionType | OptionTypes | Refer to section OptionTypes |
| StrikePrice | double | Price at which option can be exercised |

OptionSymbolFromDescriptionResponse

| Field Name | Data Type | Retrieves |
|-----------------|-----------------------|---|
| Symbol | string | Valid ticker symbol. Example: AAPL, IBM or VOD.LSE etc. |
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to section ServerAcknowledgement |

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 |
|------------|-----------|--|
| UserToken | string | A server generated GUID that is given as response to the client during the first login |
| Symbol | string | Valid ticker symbol. Example: AAPL, IBM or VOD.LSE etc. |

DescriptionFromOptionSymbolResponse

| Field Name | Data Type | Retrieves |
|-----------------|-----------------------|---|
| Root | string | Symbol root for option |
| Expiration | string | Time at which order is no longer valid (DAY, DAYPLUS, or custom value supported by destination) |
| OptionType | OptionTypes | Refer to section OptionTypes |
| StrikePrice | double | Price at which option can be exercised |
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to section ServerAcknowledgement |

SubscribeLevel1Ticks

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

Level1MarketDataRequest

| 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 |
| Symbols | repeated string | Valid ticker symbol. Example: AAPL, IBM or VOD.LSE etc. |
| RegionalExchangelds | repeated string | Regional exchange ID |
| Request | bool | If set to True , a current snapshot of the data will be retrieved |
| Advise | bool | If set to True , real-time updates from the server will be registered for |

Level1MarketDataResponse

| Field Name | Data Type | Retrieves |
|-----------------|--------------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to section ServerAcknowledgement |
| DispName | string | 'IBM' (Symbol formats are datafeed-specific. Check your Feed Handler help file for the correct format.) |
| Trdprc1 | Price | Last traded price |
| Trdtim1 | google.protobuf.Duration | Trade time |
| SymbolDesc | string | Symbol description |
| CompanyName | string | Company name represented by symbol |
| BidTick2 | string | "Bid tick" for NASDAQ Short Sale Rule |

| 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 |
| SaleConditionVolume | google.protobuf.Int32Value | Volume of the most recent pre-market, post-market, or irregular trade |
| IntradayHighCount | google.protobuf.Int32Value | Number of intraday highs |
| VwapVol | google.protobuf.Int32Value | VWAP Volume from the trade server |
| Vwap | google.protobuf.DoubleValue | VWAP from the trade server |
| LrpBid | Price | NYSE liquidity replenishment point for bids |
| Bid | Price | Last bid price for symbol |
| LrpAsk | Price | NYSE liquidity replenishment point for Asks |
| Ask | Price | Last ask price for symbol |
| ChangeLast | Price | Change from last price |
| High1 | Price | Value of highest transaction for current session |
| High52 | Price | Highest traded price for a share in the last 52 weeks |
| Low1 | Price | Value of lowest transaction for current session |
| Low52 | Price | Lowest traded price for a share in the last 52 weeks |

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 |
|----------------|---------------------|--|
| ServerResponse | string | success: in case the invoked API executes successfully on the server side failed: in case the invoked API throws an error or lands in an exception |
| 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 |

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 |
|-----------------|-----------------|--|
| UserToken | string | A server generated GUID that is given as response to the client during the first login |
| Symbols | repeated string | Valid ticker symbols |
| MarketDataLevel | string | Level1 or Level2 |

AddSymbolsResponse

| Field Name | Data Type | Retrieves |
|----------------|-----------|---|
| ServerResponse | string | success: in case the invoked API executes successfully on the server side |

| Field Name | Data Type | Retrieves |
|----------------|---------------------|--|
| | | failed: in case the invoked API throws an error or lands in an exception |
| 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 |

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 |
|-----------------|-----------------|--|
| UserToken | string | A server generated GUID that is given as response to the client during the first login |
| Symbols | repeated string | Valid ticker symbols |
| MarketDataLevel | string | Level1 or Level2 |

RemoveSymbolsResponse

| Field Name | Data Type | Retrieves |
|----------------|---------------------|--|
| ServerResponse | string | success: in case the invoked API executes successfully on the server side failed: in case the invoked API throws an error or lands in an exception |
| 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 |

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 |
|--------------|----------------------------|--|
| UserToken | string | A server generated GUID that is given as response to the client during the first login |
| Symbol | string | Valid ticker symbol. Example: AAPL, IBM or VOD.LSE etc. |
| RequestId | google.protobuf.Int32Value | A user-supplied request ID that can be used to disambiguate response data |
| 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 True , a current snapshot of the data will be retrieved |
| Advise | bool | If set to True , real-time updates from the server will be registered for |

Level2MarketDataResponse

| Field Name | Data Type | Retrieves |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to section ServerAcknowledgement |
| MktSource | string | Market Maker Quote Source |
| MktMkrId | string | Market Maker ID |
| DispName | string | 'IBM' (Symbol formats are datafeed-specific. Check your Feed Handler help file for the correct format.) |

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

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 |
|----------------|---------------------|--|
| ServerResponse | string | success: in case the invoked API executes successfully on the server side failed: in case the invoked API throws an error or lands in an exception |
| 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 |

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 |
|------------|----------------------------|--|
| UserToken | string | A server generated GUID that is given as response to the client during the first login |
| SymbolRoot | string | Symbol root for options |
| RequestId | google.protobuf.Int32Value | A user-supplied request ID that can be used to disambiguate response data |
| Request | bool | If set to True , a current snapshot of the data will be retrieved |
| Advise | bool | If set to True , real-time updates from the server will be registered for |

OptionChainResponse

| Field Name | Data Type | Retrieves |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to section ServerAcknowledgement |

| Field Name | Data Type | Retrieves |
|------------|--------------------------------|-----------------------|
| Derivative | repeated QuoteChainResponse | Underlier information |

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 |
|------------|-----------|--|
| UserToken | string | A server generated GUID that is given as response to the client during the first login |
| Symbol | string | Valid ticker symbol. Example: AAPL, IBM or VOD.LSE etc. |
| Request | bool | If set to True , a current snapshot of the data will be retrieved |
| Advise | bool | If set to True , real-time updates from the server will be registered for |

SymbolReferenceDataResponse

| Field Name | Data Type | Retrieves |
|-----------------|-----------------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to section ServerAcknowledgement |
| SymInfoList | repeated SymInfoResponse | Refer to section SymInfoResponse |

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 |
|------------|-----------|--|
| UserToken | string | A server generated GUID that is given as response to |

| Field Name | Data Type | Accepted Values/Examples |
|------------|----------------------------|--|
| | | the client during the first login |
| Symbol | string | Valid ticker symbol. Example: AAPL, IBM or VOD.LSE etc. |
| Date | google.protobuf.Timestamp | Trade date |
| StartTime | google.protobuf.Duration | The time trading started for the current session |
| StopTime | google.protobuf.Duration | The time trading ended |
| RequestId | google.protobuf.Int32Value | A user-supplied request ID that can be used to disambiguate response data |
| TickTypes | repeated TickTypes | Refer to section TickTypes |
| Request | bool | If set to True , a current snapshot of the data will be retrieved |
| Advise | bool | If set to True , real-time updates from the server will be registered for |

TickDataResponse

| Field Name | Data Type | Retrieves |
|-----------------|------------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to section ServerAcknowledgement |
| TickInfo | repeated TicksResponse | Refer to section TicksResponse |

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 |
|------------|-----------|--|
| UserToken | string | A server generated GUID that is given as response to the client during the first login |

| Field Name | Data Type | Accepted Values/Examples |
|------------|-----------------|--|
| Symbols | repeated string | Valid ticker symbol. Example: AAPL, IBM or VOD.LSE etc. |
| Request | bool | If set to True , a current snapshot of the data will be retrieved |
| Advise | bool | If set to True , real-time updates from the server will be registered for |

OptionsAndGreekDataResponse

| Field Name | Data Type | Retrieves |
|-----------------|------------------------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to section ServerAcknowledgement |
| OptionsList | repeated OptionCalculationResponse | Refer to section OptionCalculationResponse |

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 |
|------------|-----------|--|
| UserToken | string | A server generated GUID that is given as response to the client during the first login |
| Symbol | string | Valid ticker symbol. Example: AAPL, IBM or VOD.LSE etc. |

SecurityDataResponse

| Field Name | Data Type | Retrieves |
|------------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to section ServerAcknowledgement |
| SecurityInfoList | repeated SecurityData | Refer to section SecurityData |

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 |
|-------------|-----------|--|
| UserToken | string | A server generated GUID that is given as response to the client during the first login |
| CompanyName | string | Company name represented by symbol |

SymbolsFromCompanyNameResponse

| Field Name | Data Type | Retrieves |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to section ServerAcknowledgement |
| SymbolDatalist | repeated SymbolData | Refer to section SymbolData |

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 |
|------------|--------------------|--|
| UserToken | string | A server generated GUID that is given as response to the client during the first login |
| Symbol | string | Valid ticker symbol. Example: AAPL, IBM or VOD.LSE etc. |
| SymbolInfo | AlternateSymbology | Refer to section AlternateSymbology |

SymbolFromAlternateSymbologyResponse

| Field Name | Data Type | Retrieves |
|-----------------|-----------------------|---|
| Acknowledgement | ServerAcknowledgement | Response from the server (success or failure). Refer to section ServerAcknowledgement |
| SymbolInfolist | repeated SymbolData | Refer to section SymbolData |

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 |
|-------------------------|---|
| UserSubmitOrder | Submission of an order by a user to an exchange |
| UserSubmitStagedOrder | Submission of a staged order by user |
| UserSubmitCompoundOrder | Submission of a pair order by a user to an exchange |
| UserSubmitChange | Change to an order by a user |
| UserSubmitCancel | User submitted cancellation of a fill |
| UserSubmitAllocation | User submitted allocation |
| UserSubmitAllocationEx | Outbound allocation |
| ForeignExecution | Doneaway trade and allocation events <ul style="list-style-type: none">• Allocation: Executed in another account on the EMS• Doneaway: Executed outside of the EMS but recorded in EMS |
| ExchangeAcceptOrder | Destination accepts event submitted |
| ExchangeTradeOrder | Exchange executes a fill |
| ExchangeBustOrder | Order that was busted by the Exchange |