

FIX TRADING COMMUNITY

Nordic Trading Conference 2024

– Online Clinic for Tools from FIX –

Thursday 16th May 2024

Hanno Klein

FIX Technical Director

GTC EMEA Co-Chair

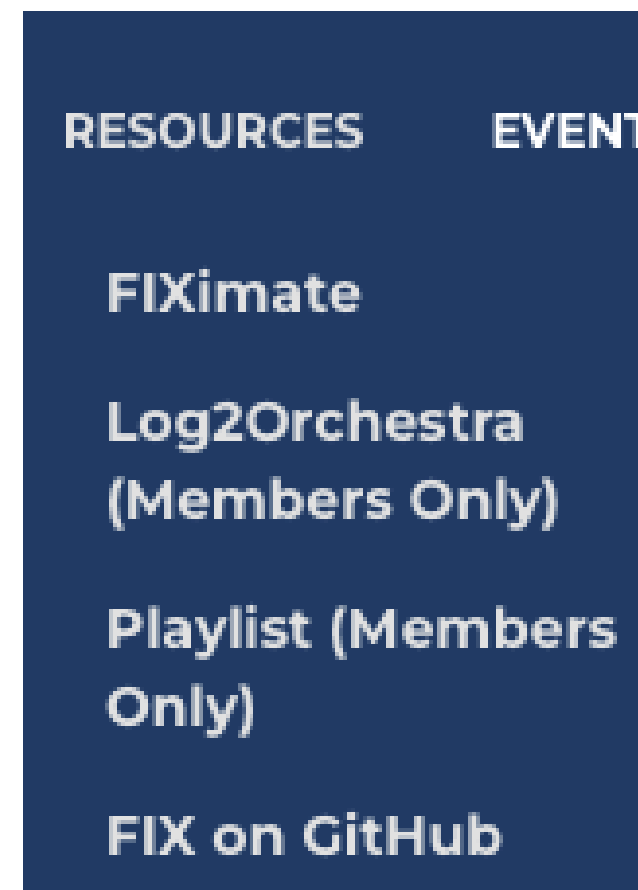
Senior Standards Advisor, FIXdom



FIX Tools Landscape

- Orchestra Server
 - GUI-based tool to maintain your machine-readable repository
- FIXimate
 - Visualisation of the FIX Protocol (FIX Latest version)
- Playlist
 - GUI-based tool to convert a subset of FIX Latest into an Orchestra XML file
- Log2Orchestra
 - GUI-based tool to convert FIX tag=value logfiles into an Orchestra XML file
- FIX open-source tools
 - Tablature – conversion tool between markdown and Orchestra XML files
 - Large number of utilities and conversion tools
- Other
 - Orchimate – visualisation of your own Orchestra XML files

FIX Tools – Access from the FIX website



Dropdown menu on the FIX website

The Tools

Member Only

Log2Orchestra – Creates an Orchestra XML file from one or more FIX message logs (tag-value encoding) and an Orchestra reference file such as FIX Latest
MEMBERS ONLY TOOL – Click [here](#) to request access.

[LOG2ORCHESTRA](#)



Member Only

Playlist – Creates an Orchestra XML file from an Orchestra reference file based on a manual selection of messages, components, fields, and values. Click [here](#) for the user guide.
MEMBERS ONLY TOOL – Click [here](#) to request access.

[PLAYLIST](#)

<https://www.fixtrading.org/standards/fix-orchestra/>

FIX Tools – Orchestra Server

FIX TRADING COMMUNITY™

Welcome to
FIX orchestra
SERVER

Central Repository for FIX and non-FIX
Protocol Specifications

Powered by Espro ETP S-Box ©

Log in
Get access to Protocol Specifications Server

* Email

* Password

Login

[About Espro ETP S-Box](#) | [FAQ](#) | [Legal Notices](#) | [Report a Problem](#)

© Espro. All rights reserved.

<https://fixtrading.sbox.espro.com>

FIX.Latest_EP287 - English

Find all:

Pattern

Search

Regex match: ^=start, \$=end, .=any char

☐ Match abbreviated name only

Message type:

D

Lookup

Component:

Name

Lookup

Field tag:

11

Lookup

Field name:

Name

Lookup

Code set:

Name

Lookup

About this orchestration

Message Summary

Components

Fields

Sorted by Tag Number

Sorted by Field Name

Sorted by Datatype

User Defined Fields

Code Sets

Datatypes

Message Layouts

Session

PreTrade

Trade

• SingleGeneralOrderHandling

DontKnowTrade

ExecutionAck

ExecutionReport

NewOrderSingle

OrderCancelReject

OrderCancelReplaceRequest

OrderCancelRequest

OrderStatusRequest

• ProgramTrading

OrderMassHandling

CrossOrders

MultilegOrders

PostTrade

Infrastructure

NewOrderSingle [type 'D']

<Order>

The new order message type is used by institutions wishing to electronically submit securities and forex orders to a broker for execution.

The New Order message type may also be used by institutions or retail intermediaries wishing to electronically submit Collective Investment Vehicle (CIV) orders to a broker or fund manager for execution.

Pedigree Added FIX.2.7

Expand Components | Collapse Components

Field or Component	Field Name	Abbr Name	Req'd	Comments	Pedigree
Component	StandardHeader	Hdr	Y	MsgType = D	Added FIX.2.7
11	ClOrdID	ID	Y	Unique identifier of the order as assigned by institution or by the intermediary (CIV term, not a hub/service bureau) with closest association with the investor.	Added FIX.2.7
2422	OrderRequestID	OrdReqID			Added EP188
526	SecondaryClOrdID	ID2			Added FIX.4.3
583	ClOrdLinkID	LnkID			Added FIX.4.3
2829	DuplicateClOrdIDIndicator	DupClOrdIDInd			Added EP253
Component	Parties	Pty		This is party information related to the submitter of the request.	Added FIX.4.3 Updated EP131

Tag	Field Name	Abbr Name	Data Type	Union Datatype	Description	Pedigree
11	ClOrdID	ClOrdID / ID in SingleGeneralOrderHandling	String		Unique identifier for Order as assigned by the buy-side (institution, broker, intermediary etc.) (identified by SenderCompID(49) or OnBehalfOfCompID(115) as appropriate). Uniqueness must be guaranteed within a single trading day. Firms, particularly those which electronically submit multi-day orders, trade globally or throughout market close periods, should ensure uniqueness across days, for example by embedding a date within the ClOrdID(11) field.	Added FIX.2.7 Updated EP282

Used in messages:
[CollateralAssignment][CollateralInquiry][CollateralInquiryAck][CollateralReport][CollateralRequest][CollateralResponse][Email][ExecutionAck][ExecutionReport][MultilegOrderCancelReplace][NewOrderMultileg][NewOrderSingle][OrderCancelReject][OrderCancelReplaceRequest][OrderCancelRequest][OrderMassActionReport][OrderMassActionRequest][OrderMassCancelReport][OrderMassCancelRequest][OrderStatusRequest][QuoteRequest][QuoteResponse][RegistrationInstructions][RegistrationInstructionsResponse][SettlementInstructions][TradeCaptureReportRequest]

Used in components:
[InstrmtStrkPxGrp][ListOrdGrp][OrdAllocGrp][OrdListStatGrp][OrderAggregationGrp][OrderEntryAckGrp][OrderEntryGrp][SideCrossOrdCxlGrp][SideCrossOrdModGrp][TradeReportOrderDetail]

FIX Tools – Playlist v1.2

<https://playlist.fixtrading.org>

FIX Playlist

Creates a subset of an Orchestra file



Input

Source Orchestra file

100%

Drag file to read or

Choose File

FIX Standard

OrchestraFIXLatest.xml

Use Selector File

Clear Input File

Output

Orchestra file to create (*.xml)

myorchestra.xml

Create Orchestra file

User Guide

Terms of Service

Version 1.2
© Copyright 2024, FIX Protocol Ltd.

Select Your Content

(All elements sorted alphabetically. Greyed out items are deprecated)

- ☐ MESSAGES
- ☐ GROUPS
- ☒ COMPONENTS
- ☐ FIELDS
 - ☒ Tags 1-999
 - ☐ Tags 1000-1999
 - ☐ Tags 2000-2999
 - ☐ Tags 40000-49999
- ☒ CODESETS
- ☒ DATATYPES

- ☒ NewOrderSingle(35=D)
 - ☒ Account(1) - Type String
 - ☐ AccountType(581) - Type AccountTypeCodeSet
 - ☐ AcctIDSource(660) - Type AcctIDSourceCodeSet
 - ☐ AffiliatedFirmsTradeIndicator(2525) - Type Boolean
 - ☐ AllocID(70) - Type String
 - ☐ AuctionAllocationPct(1804) - Type Percentage
 - ☐ AuctionInstruction(1805) - Type AuctionInstructionCodeSet
 - ☐ AuctionType(1803) - Type AuctionTypeCodeSet
 - ☐ BookingType(775) - Type BookingTypeCodeSet
 - ☐ BookingUnit(590) - Type BookingUnitCodeSet
 - ☐ CancellationRights(480) - Type CancellationRightsCodeSet
 - ☐ CashMargin(544) - Type CashMarginCodeSet
 - ☒ ClOrdID(11) - Type String
 - ☐ ClOrdLinkID(583) - Type String
 - ☐ ClearingAccountType(1816) - Type ClearingAccountTypeCodeSet
 - ☐ ClearingFeeIndicator(635) - Type ClearingFeeIndicatorCodeSet
 - ☒ CommissionData - Component
 - ☐ CommissionDataGrp - Group
 - ☐ ComplianceID(376) - Type String
 - ☐ ComplianceText(2404) - Type String
 - ☐ ContraOrderOrigination(2882) - Type OrderOriginationCodeSet
 - ☐ ContraRoutingArrangementIndicator(2884) - Type RoutingArrangementIndicatorCodeSet
 - ☐ CopyMsgIndicator(797) - Type Boolean
 - ☐ CoveredOrUncovered(203) - Type CoveredOrUncoveredCodeSet
 - ☒ Currency(15) - Type Currency

Select FIX Standard File

- ☐ FIX44Session.xml
- ☐ FIXTSession.xml
- ☐ OrchestraFIX42.xml
- ☐ OrchestraFIX44.xml
- ☐ OrchestraFIXLatest.xml

CANCEL

FIX Tools – Log2Orchestra

<https://log2orchestra.fixtrading.org>

FIX Log to Orchestra

Creates an Orchestra file from one or more FIX message logs (tag-value encoding)

Input

Reference Orchestra file

↑

Drag file to read or

Choose File

FIX Standard

FIX message log files

↑

Drag file to read or

Choose Files

Configuration file for scenarios (optional)

↑

Drag file to read or

Choose File

Clear Input Files

Output

Orchestra file to create (*.xml)

myorchestra.xml

☐ Append only (removes no scenarios)

Create Orchestra file

Terms of Service

Help

Online Clinic FIX Open-Source Tools



Tablature Input: Markdown File

...
Message ExecutionReport type 8 (9)

The execution report message is used to...

Name	Tag	Presence	Implmaxlength
StandardHeader	component	required	
ApplicationSequenceControl	component	optional	
OrderID	37	required	
OrderRequestID	2422	optional	
MassOrderRequestID	2423	optional	
SecondaryOrderID	198	optional	20
SecondaryClOrdID	526	optional	20
SecondaryExecID	527	optional	
ClOrdID	11	optional	20
QuoteMsgID	1166	optional	

...

<https://github.com/FIXTradingCommunity/tablature>

Tablature Output: Orchestra XML file

```
...
<fixr:message id="10006" name="ExecutionReport">
  <fixr:structure>
    <fixr:fieldRef id="11"/>
    <fixr:fieldRef id="37" presence="required"/>
    <fixr:fieldRef id="1"/>
    <fixr:componentRef id="10002"/>
    <fixr:fieldRef id="54" presence="required"/>
    <fixr:fieldRef id="31"/>
    <fixr:fieldRef id="32"/>
    <fixr:fieldRef id="151" presence="required"/>
    <fixr:fieldRef id="14" presence="required"/>
    <fixr:groupRef id="10005"/>
  </fixr:structure>
  <fixr:annotation>
    <fixr:documentation contentType="text/markdown">
      Relay fill information on a working order.
    </fixr:documentation>
  </fixr:annotation>
</fixr:message>
...
```

FIX Open-Source Tools – Orchestra Utilities

- Repository Validator
 - Validates that an XML file conforms to the Orchestra Repository schema.
- Interfaces Validator
 - Validates that an XML file conforms to the Orchestra Interfaces schema.
- Repository Compressor
 - Creates extracts from an Orchestra XML file by section or category.
- Unified2Orchestra
 - Populates an Orchestra XML file from a Unified Repository 2010 Edition file.
- Orchestra2Doc
 - Generates documentation for an Orchestra XML file that can be viewed in any web browser.

<https://github.com/FIXTradingCommunity/fix-orchestra>

FIX Open-Source Tools – XmlDiff/Merge

- XmlDiff
 - Compares two XML files and generates a third file that represents their differences in IETF RFC 5261 format.
- XmlMerge
 - Takes a base XML file and a difference file and merges the two to produce a new XML file.
- Use Case: add FIX Latest extensions to your own repository
 - Compare Orchestra XML files from two different FIX Extension Packs.
 - Edit the resulting instructions file to remove what you do not need.
 - Apply the edited instructions file to your previous baseline XML file.
 - Use an Orchestra XML visualisation tool to verify the changes
 - Use an Orchestra XML editing tool to add your own documentation/pedigree

<https://github.com/FIXTradingCommunity/xml-diff-merge>

FIX Open-Source Tools – QuickFIX

- repository-quickfix
 - Converts an Orchestra Repository XML file to a QuickFIX dictionary.
- model-quickfix
 - Generates code that is conformant to the QuickFIX/J API for validating and populating messages.
- session-quickfix
 - Demonstration of session configuration for QuickFIX open-source FIX engine using an Orchestra Interfaces XML file.

<https://github.com/FIXTradingCommunity/fix-orchestra-quickfix>

FIX Open-Source Tools – Avro

- Background

- Apache Avro™ is a serialisation format for record data and streaming data pipelines (<https://avro.apache.org/>).
- Language independent, schema-based data serialisation library.
- Avro uses a JSON format to specify the data structure.

- Orchestra to Avro

- Utilities for the integration of Orchestra and Apache Avro.

<https://github.com/FIXTradingCommunity/fix-orchestra-avro>

Online Clinic Other Tools



Other Tools – Orchimate

<https://orchimate.org>

Orchestra Specification

ADD LOCAL SPEC

Find All

Message

Component or Group

Field

Code Set

Datatype

Indexes

Messages

Components

Groups

Fields

Code Sets

Datatypes

Orchimate^{ALPHA}

Welcome to Orchimate

Orchimate is a search tool to visualise and explore your [Orchestra](#) specifications.

Use of Orchimate is governed by the [Terms of Use](#) and the [Privacy Policy](#).

To get started, you can load your own specification using the "Add Local Spec" button or select from the list of pre-loaded specifications.

If you would like to add a pre-loaded specification to Orchimate, please [request it here](#) or via the help menu. You can also [report a defect](#), [request a new feature](#), or send a [general inquiry](#).

FIX.4.2 (FIX.4.2)

FIX.4.4 (FIX.4.4)

FIX.Latest (FIX.Latest_EP287)

Recommended Practices for Trading Digital Assets (1.0)

Orchimate Copyright 2024 [Atomic Wire Technology Limited](#)

Orchestra Copyright 2024 [FIX Protocol Ltd](#)

[Terms of Use](#) | [Privacy Policy](#)

Other Tools – Orchimate

<https://orchimate.org/fix-latest>

Orchestra Specification

FIX.Latest (FIX.Latest_EP287)

ADD LOCAL SPEC

Find All

Message

Component or Group

Field

Code Set

Datatype

Indexes

Messages

Components

Groups

Fields

Code Sets

Datatypes

Message Layouts

Session

PreTrade

Trade

PostTrade

Infrastructure

Orchimate^{ALPHA} / FIX.Latest (FIX.Latest_EP287)

FIX.Latest

FIX.Latest_EP287

Title

FIX.Latest_EP287

Created

2024-02-06T10:43:56.789622

Date

2024-02-06T10:34:25Z

Rights

Copyright (c) FIX Protocol Ltd. All Rights Reserved.

Conforms To

Orchestra v1.0

Source

FIX Unified Repository 2010 Edition

Orchimate Copyright 2024 Atomic Wire Technology Limited

Orchestra Copyright 2024 FIX Protocol Ltd

Terms of Use | Privacy Policy