



# MATCHNOW<sup>SM</sup>

## FIX Specification & Developer's Guide

### Version 1.22

**Supported Versions: FIX 4.0 and 4.2**

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## Revision History

Date	Version	Author	Description
2016/09/30	1.22	Vince Poil	Add PIO Feature
2016/03/10	1.21	Dave Nolan	Update At The Touch eligibility description (All symbols >50 board lots or \$100k)
2015/08/18	1.20	Dave Nolan	Add Last Liquidity Indicator Tag 851
2015/04/08	1.19	Vince Poil	Edit the FIX Tag chart to remove duplicate and add description
2015/02/26	1.18	Dave Nolan	Add new Odd Lot destination functionality Add option to trade Interlisted Tickers at the touch functionality Update MATCH Now Order Reject Reasons Add Self Trade Prevention information Add Wash Trade information
2014/04/01	1.17	Vince Poil	Remove Contra Broker tag 9100
2013/06/27	1.16	Vince Poil	Add Min Execution Fill (MEF) functionality Add Sub-penny Limit Support
2013/06/14	1.15	Dave Nolan / Vince Poil	Add Min Price Improvement (MPI) functionality Add new Rule 80a Account types – MP/OT/OF Remove Trade in Locked Markets (TLM) functionality Remove MIDPOINT ELIGIBLE (TM) functionality Remove MIDPOINT ONLY (MMP) functionality SME Removal and edit of SME statement Edit Supported Symbol Suffix text Edit sending order to match now info Removed EMAIL section and Liquidity Information Email section Remove LIP feed info from Session Protocol Test Edit Reject Reasons Edit Contents Remove midpoint eligible and locked market from LIST orders
2012/06/01	1.14	Leroy Manning	Corrected information regarding cancel/replace and execution reports Add Short Marking Exempt(SME) Information Tag 7729
2012/02/06	1.13	Torstein Braaten	Add Cancel on Disconnect Functionality
2011/09/11	1.12	Torstein Braaten	Remove Internalize only option Add option to trade at midpoint only for liquidity orders Add that TriAct now supports FIX 4.2 Removing Time Horizon feature
2009/08/25	1.11	Heather Killian	Addition of user configuration to opt out of trading in locked markets. Update to 5 second call market in liquidity environment
2009/03/09	1.10	Barbara Howard	Updated re new tags in Execution Reports and rejection of orders with Bypass Marker
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2008/06/26	1.8	Heather Killian	Addition of Principal / Wash trade markers
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2007/09/07	1.6	Bill Hollings	Clarified behaviour of GTC/GTD/GTX responses when no liquidity.
2007/09/06	1.5	Bill Hollings	Clarified behaviour of AON and Minimum Fill Volume constraints.
2007/06/29	1.4	Bill Hollings	Corrected format of ExpireTime tag (126).
2007/05/16	1.3	Bill Hollings	Clarified role of SymbolSfx tag (65). Changed Rule80A tag (47) to mandatory on New Order – Single and New Order – List messages.
2007/05/01	1.2	Bill Hollings	Removed restriction against increasing OrderQty in a Cancel/Replace Request.
2007/04/25	1.1	Bill Hollings	
2006/09/21	1.0	Heather Killian	

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# Chapter One: Overview

## This Document

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The purpose of this developer's guide is to provide the information necessary to interface with the TriAct Canada Marketplace MATCH Now system using the FIX 4.0 and FIX 4.2 message standards. This document is not intended to replace the FIX protocol manuals.

For complete versions of any of the FIX Protocol Specification manuals, please visit the Specifications page of the FIX web site (<http://www.fixprotocol.org>).

## What's New in Version 1.22

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Add new PIO feature

## What's New in Version 1.21

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Update At The Touch eligibility description (All symbols >50 board lots or \$100k)

## What's New in Version 1.20

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Tag 851 – Add option to include Last Liquidity Indicator in execution reports

## What's New in Version 1.19

Edit the FIX Tag chart to remove duplicate and add description

## What's New in Version 1.18

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Add new Odd Lot destination functionality

Add option to trade Interlisted Tickers at the touch functionality

Updated MATCH Now Order Reject Reasons

Add Self Trade Prevention information

Add Wash Trade information

## What's New in Version 1.17

Tag 9100 - Contra Broker - Removed

## What's New in Version 1.16

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Tag 6005 – New value to support Minimum Execution Fill (MEF) also known as 'Min Tradelet'

Support Subpenny limit prices

## What's New in Version 1.15

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Tag 6005 - User configuration to provide price improvement

Add Min Price Improvement (MPI) functionality

Add new Rule 80A Account types – MP/OT/OF

Remove Trade in Locked Markets (TLM) functionality

Remove MIDPOINT ELIGIBLE (TM) functionality

Remove MIDPOINT ONLY (MMP) functionality

SME Removal and edit of SME statement

Edit Supported Symbol Suffix text

Remove LIP feed info from Session Protocol Test

Edit reject reasons

Edit contents

Remove midpoint eligible and locked market from LIST orders

## What's New in Version 1.14

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Corrected information regarding cancel/replace and execution reports

Added information for Short Marking Exempt (SME) tag 7729

## What's New in Version 1.13

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Adding Cancel on Disconnect (“COD”) functionality

## What's New in Version 1.12

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Tag 6005 – User configuration to provide price improvement at the Midpoint for liquidity orders matching against Marketflow orders

Tag 6005 - Removal of Internalize order constraint.

TriAct now supports FIX 4.2.

- On a new order: Cancel reject is Tag 35 (OrdStatus) = 9 and Tag 434 (CxlRejResponseTo) = 1
- Cancel/replace reject is Tag 35=9 and Tag 434=2,
- Cancel/replace pending message is Tag 39 = E

TriAct recommends that Access Vendors and Subscribers connect to MATCH Now in FIX 4.2 or make changes to the FIX 4.0 connection to allow for sequence numbers greater than 950,000

## What's New in Version 1.11

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Tag 6005 – User configuration to trade or not in locked markets (single order trading)

Tag 69 – Same as above but for list trading

Update 30 second matching in the liquidity environment to matching every 5 seconds

## What's New in Version 1.10

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Tag 132 – NBBO bid now returned in FIX execution reports

Tag 133 – NBBO offer now returned in FIX execution reports

Tag 9100 – Contrabroker now returned in FIX execution reports

Tag 6791 – Orders with bypass marker set will be rejected

## What's New in Version 1.9

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Updated to reflect current policy regarding LIP feed distribution.

## What's New in Version 1.8

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Tag 6776 – PrincipalTrade will now be returned on all applicable FIX execution reports.

Tag 6777 – WashTrade will now be returned on all applicable FIX execution reports.

## What's New in Version 1.3

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Tag 47 – Rule80A is now Mandatory on the *New Order – Single* and *New Order – List* messages.

The use of tag 65 – SymbolSfx in combination with tag 55 – Symbol has been clarified. Symbols such as ABC.PR.A can be split in any of the three combinations:

- ABC.PR.A in tag 55
- ABC.PR in tag 55 and A in tag 65
- ABC in tag 55 and PR.A in 65

## What's New in Version 1.2

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When changing order quantities via tag **38 – OrderQty** on the *Order Cancel/Replace Request* message, the quantity may be either increased or decreased. Previous version of this specification incorrectly indicated that the order quantity could only be decreased.

## What's New in Version 1.1

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The focus of changes in Version 1.1 of the MATCH Now FIX interface has been to tighten up the enforcement of field values on incoming orders, and to specifically reject or ignore order parameters that are not supported by TriAct Canada Marketplace.

The following changes in behaviour are reflected in Version 1.1 of the TCM FIX interface:

- Tag **7003 – ProgramTrade** is now supported on all orders submitted to both the MATCH Now – Liquidity and MATCH Now-Market Flow destinations. This allows dealers to indicate that an order is part of a program trade. MATCH Now does not use this value internally, but does report it on the regulatory and TCM data feeds.



- For orders submitted to the MATCH Now-Market Flow destination, values in the tag **6005 – TCM Constraints**, (specifically the values *Midpoint Eligible* and *Internalize* in this field) will be ignored. Previously, the MATCH Now-Market Flow destination erroneously supported the *Internalize* indication. Allowing MATCH Now-Market Flow orders to only trade if internalized was a violation of best-execution regulations, and has been corrected.
- MATCH Now only supports Market and Limit orders. In tag **40 – OrdType** for all orders submitted to both the MATCH Now-Liquidity and MATCH Now-Market Flow destinations, any values other than *Market (1)* or *Limit (2)* will now be rejected. Previously, order types such as *Stop (3)* or *Stop Limit (4)* were accepted but actually traded as *Market* or *Limit* orders, ignoring the Stop price.
- In tag **59 – TimelnForce**, acceptable values have been tightened up to better reflect MATCH Now trading behaviour. Previously, other values were accepted and simply ignored, resulting in the possibility of trades executing that may not have been intended by the dealer if the order was submitted to MATCH Now by mistake or en-route to another trading venue (in the case of orders to the MATCH Now-Market Flow destination). The following TimelnForce values are acceptable for each destination, and all others will be rejected:
  - MATCH Now-Liquidity: *Day (0)*
  - MATCH Now Odd Lot Liquidity: *Day (0)*
  - MATCH Now-Market Flow: *Day (0), GTC (1), IOC (3), FOK (4), GTX (5) & GTD (6)*

In addition to describing functional changes to the MATCH Now FIX interface, version 1.1 of this specification also corrects some errors and omissions in previous versions, including the following:

- Tag **7008 – Jitney** allows executing brokers to identify a different originating broker for any order to either the MATCH Now-Liquidity or MATCH Now-Market Flow destinations. The Jitney broker ID is forwarded by MATCH Now for regulatory reporting. MATCH Now uses the executing broker as the identifier when internalizing order execution.
- The section on *Order Cancel/Replace Request* messages has been updated to clarify the parameters that can be changed on an order within the MATCH Now-Liquidity destination.

## General Information on FIX 4.0 and FIX 4.2 connections to MATCH Now

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The MATCH Now FIX engine adheres strictly to the FIX standard. Reductions or extensions to the FIX protocol are not permitted.

The client may connect and disconnect any number of times during the trading day. At 23:00 EST/EDT time each night, the cache files holding the FIX messages are cleaned up by MATCH Now. Clients may connect the following day anytime after 05:00.

MATCH Now supports FIX 4.0 (January 1997) and FIX 4.2 (May 2001) over TCP/IP protocol.

## Recovery and Cancel on Disconnect Functionality

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During initialization, or in the middle of a FIX session, message gaps may occur. It is the responsibility of the receiving application to monitor incoming sequence numbers to detect gaps. This information may then be used to respond with Resend Request messages.

MATCH Now will maintain a list of sent messages, each with a unique sequence number. MATCH Now's FIX engine automatically stores all outbound messages for all connections onto disk. This disk file remains in place even if the FIX engine is stopped and restarted.

Certain administrative messages (which do not increment the sequence number) will not be present in the retransmission of messages in response to a Resend Request from a client.

**Please note TriAct now recommends that all FIX 4.0 connections either upgrade to FIX 4.2 or ensure that FIX 4.0 Tag 34 (msgSeqNo) <= 999,999. All FIX 4.0 connections will need to define a value to be used for "infinity" in their send and receive Tag 16 (EndSeqNo) = 999,999.**

## Cancel on Disconnect Functionality

Cancel on Disconnect ("COD") functionality allows an automated cancellation of open and unfilled orders in the event of involuntary loss of connectivity between MATCH Now and an Access Vendor/Subscriber on a specifically designated FIX trading connection. COD is an optional, automated function configurable by session bundle. When triggered on an order entry session bundle enabled for COD, the session bundle will be blocked and all open day orders associated with the blocked session bundle will be cancelled. All cancellation messages will be kept in the queue and will be delivered to the client when the session is unblocked and the client requests recovery after reconnecting during the same trading day.

## Communications

Clients may connect to MATCH Now through with a variety of network services and hardware configurations, allowing you to transmit orders or requests via your own modem or over leased lines, utilizing the standard FIX protocol. Clients can also access MATCH Now through Data Service Networks such as TNS or Atrium.

## Full Certification

Each FIX installation is fully tested in a simulated production environment. Our experienced Quality Assurance team develops and conducts a comprehensive certification plan, in which the routing functionality undergoes thorough testing and this in turn allows the team to further improve and enhance our systems. We test all levels of the system, including application messages, order and report transmission, throughput verification and data recovery. Testing can be done via leased lines or over the Internet.

## Self Trade Prevention

The "No Self Trade" feature is an optional designation that suppresses trades from executing where orders on both sides of the trade are from the same subscriber identified by trader ID. This feature is designed to prevent unintentional wash trades from occurring. Subscribers that want to access dark liquidity when executing different strategies that include the same securities on the opposite side of the market can prevent those strategies from interacting.

Configurable at TraderID (StampID) level, the feature suppresses a Trader ID from trading against itself, but allows the order to stay live and remain eligible to trade against every other order in the liquidity pool.

TriAct Support can configure a group of Trader ID's from the same beneficial owner to not trade against themselves. Group configuration is generally limited to 5 distinct ID's from the same broker. Please contact the support team to discuss the impact of this configuration

Please complete the **MATCH Now “No Self Trade” Feature Form** to avail of this feature.

The form is available on our website <http://www.triactcanada.com/general-links.php>

## Wash Trades

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MATCH Now does not publish inventory wash trades to the tape, but does report them to IIROC.

Wash trades are defined as follows:

- Account Type (Fix Tag 47) ST/IN/MP/OT/OF vs ST/IN/MP/OT/OF (Usually ST/IN vs ST/IN)
- Same Broker both sides

We indicate wash trades with Fix Tag 6777=Y on execution reports and in the Fix 4.2 private market data feed.

Wash trades incur the unintentional cross fee of \$0.0001/share.

Since the volume is not reported in the public market data feeds, TriAct believes it is not necessary to cancel these trades to comply with IIROC reporting requirements.

Questions on suppressed wash trades should be directed to IIROC surveillance team at 416-646-7220 or [surveillance@iroc.ca](mailto:surveillance@iroc.ca) for further regulatory guidance.

## Chapter Two: MATCH Now

### Sending Orders to MATCH Now (3 Distinct Destinations)

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MATCH Now has three distinct trading destinations: MATCH Now Liquidity, MATCH Now Market Flow and MATCH Now Odd-Lot. Each destination is served by a separate FIX connection from the client. A client wishing to submit orders to all destinations must maintain a separate FIX connection to each destination.

#### MATCH Now-Liquidity Destination

- Orders sent to the MATCH Now-Liquidity destination will sit in MATCH Now's liquidity pool, which is a confidential order book that is not exposed publicly.
- Every 5 seconds (+/- 1 or 2 seconds for randomization), MATCH Now executes a call-market match between orders in the liquidity pool and trades are generated as a result. Each order in MATCH Now's liquidity pool may participate in more than one match until it has been completely filled.
- In addition, liquidity orders are eligible to be matched against orders that arrive at the MATCH Now-Market Flow destination. This match occurs immediately upon receipt of an order to the MATCH Now-Market Flow destination, and does not wait for the next 5 second call.
- Orders may be submitted to the MATCH Now-Liquidity destination as single orders via the FIX *New Order-Single* message, or as part of a wave or list via the FIX *New Order-List* message. Only one of these types may be submitted via each FIX connection, so a client who wishes to submit both single orders and list orders must maintain two separate FIX connections for this purpose.
- Certain constraints may be specified on either a single order or a list of orders submitted to the MATCH Now-Liquidity destination. These constraints are explained in the section below called **Setting Constraints on Orders**.
- Orders submitted to the MATCH Now-Liquidity destination may be cancelled or corrected via the FIX *Order Cancel* and *Order Cancel/Replace Request* messages. Once an order has been completely filled, it may no longer be cancelled or modified.

## MATCH Now-Market Flow Destination

- Orders sent to the MATCH Now-Market Flow destination will attempt to match immediately against orders sitting in the MATCH Now liquidity pool, and trades are generated as a result.
- Orders submitted to the MATCH Now-Market Flow destination must be single orders submitted via the FIX *New Order-Single* message. The MATCH Now-Market Flow destination does not support waves or lists of orders.
- All orders submitted to the MATCH Now-Market Flow destination are treated as *Immediate or Cancel* orders (also sometimes called *Fill or Kill* orders), and are executed immediately, with the result being a Complete Fill, Partial Fill, Reject or Done for day response. Orders submitted to the MATCH Now-Market Flow destination do not sit open on a book. As such, MATCH Now ignores most TimeInForce settings on orders submitted to the MATCH Now-Market Flow destination.
- If an order routed to the MATCH Now-Market Flow destination passes through the first filter above and receives either a Partial Fill or Nothing-Done, MATCH Now sends back a Done for day message. Tag 58 message will be "No Trade" when there is either no liquidity or liquidity that is not marketable based on order constraints or price limit of either side.
- Other than a minimum fill quantity and minimum execution fill, the MATCH Now-Market Flow destination does not support constraints on orders.
- All orders to the MATCH Now-Market Flow destination are eligible for partial fills unless minimum fill quantity is set equal to order quantity. MATCH Now rejects AON orders, and will treat FOK orders as IOC (eligible for partial fill).
- Orders submitted to the MATCH Now-Market Flow destination may *not* be cancelled or corrected.
- Odd and mixed lot orders sent to Market Flow destination can trade against resting liquidity in the Liquidity Destination and Odd-Lot Destination.

## MATCH Now Odd-Lot Destination

- Odd Lot Liquidity Providers (OLLP) will need a new Order Entry connection to the New Odd Lot Destination.
- The New Odd Lot Destination accepts Day Orders only.
- OLLP orders must be  $\geq$  round lot size minus 1 at all times.  
(1 share less than board lot size, e.g. 99, 499, 999 is OK)
- An OLLP order will be rejected if it is less than the round lot size minus 1  
(e.g. 98, 498, 998 shares)
- An order dropping below the round lot size shares minus 1 will be returned back as Nothing Done.
- One TraderID can submit one buy and one sell supplier order only per ticker at any moment in time.
- OLLP orders can be corrected or cancelled. (Corrected orders do not lose priority)
- OLLP orders will trade at the Canadian Best Bid/Offer.
- OLLP orders may have limit prices to protect themselves from wide price movement. We encourage limits to be marketable. Any order that is not tradeable at the time of a match, will be put to the bottom of the ranking so the active order can check the next order.
- OLLP liquidity providers may only have five(5) traderIDs per MATCHNow subscriber

## Setting Constraints on Orders

### Order-based Constraints

Certain constraints may be specified on each order submitted. These constraints apply to the specific order either as a single stand-alone order or as part of a list of orders (in the case of the MATCH Now-Liquidity destination and the MATCH Now Odd Lot Liquidity destination). Constraints applied to a particular order take precedence over constraints specified at the list, user default, or system default levels.

Orders submitted to the MATCH Now-Market Flow destination may specify a minimum fill quantity via the MinQty (110) field or Minimum Execution Fill via tag 6005 (MEF) in the FIX *New Order-Single* message.

Sub-penny limit prices – Orders with three and four decimal place execution limits sent to MATCH Now will be accepted. Three and four decimal execution limits allow market participants to accurately control the price orders trade at while protecting traders from widening spreads.

Stock Price	Supported		Fix Tag Example	
	3 Decimal	4 Decimals	Limit	Price
<\$0.50	Y	Y	40=2	44=0.4325
>= \$0.50	Y	N	40=2	44=10.015

Orders submitted to the MATCH Now-Liquidity destination may specify the following constraints as part of the FIX *New Order-Single* or *New Order-List* messages:

- A minimum fill quantity may be specified via the MinQty (110) field.
- An expiration time for the order may be specified via the ExpireTime (126) field.
- Using the TCM Constraints (6005) field, additional MATCH Now-specific constraints may be specified via a string containing sub-fields of the form *tag=value*, where each sub-field within the string is separated by the ASCII STX character (^B or 0x02).
- The following additional constraints may be specified in the TCM Constraints (6005) field:

Tag	Tag_name	Values	Description
PAG	AGGRESSION_LEVEL	-1,0,1	<p>For Active (Mkt Flow) order:</p> <p>0 = Order will trade Mid Point Only</p> <p>1 = Trade will trade with everyone</p> <p>For Passive (Liquidity) order:</p> <p>-1 = Order will trade at the quote (<b>Large orders &gt;50 Board Lot or &gt;\$100k ONLY</b>)</p> <p>0 = Orders will trade Midpoint only</p> <p>Default = 1 for Active</p>

Tag	Tag_name	Values	Description
			Default = 0 for Passive
PMI	MIN_PRICE_IMPROVEMENT	1	1 = Orders will trade with minimum price improvement (<0.50=0.005 & >=0.50=0.01) If PMI is present, it will override any PAG option sent. Default: false
MEF	MIN_EXECUTION_FILL (aka Min Tradelet)	Number	This value will control the size of each execution that makes up a match. This is NOT the Min Fill Size (Tag 110). If MEF is populated it will override the min fill size.
PIO	PRICE_IMPROVEMENT_ONLY	1	1 = Market flow orders will only interact with Mid Point and Min Price Improvement liquidity. It will not cross the spread.

### List-based Constraints

Certain constraints may be specified for a complete list of orders submitted to the MATCH Now-Liquidity destination and the MATCH Now Odd Lot Liquidity destination. A list is defined as multiple and different symbols that can be on one side or both sides of the market. These constraints apply to all orders with the list and take precedent over constraints specified at the user default, or system default levels.

List constraints are specified in the ListExecInst (69) field of the FIX *New Order-List* message. The constraints are specified via a string containing sub-fields of the form *tag value* (separated by a space), where each sub-field within the string is separated by the ASCII LF character (^J, \n or 0x0A). An example of the use of this field would be:

```
...<SOH>69=4 1500<LF>8 2000<LF>50 0<LF>55 1<LF>6 20000<LF>7 30000<LF>52 Passive-2<LF><SOH>....
```

The following list constraints may be specified in the ListExecInst (69) field:

Tag	Tag_name	Values	Description
4	CANCEL_TIME	HHMM	Time at which order will be done for the day Default: market close
6	BUY_IMB	999999999	Cash Buy Imbalance. Dollar amount that buys may exceed sells. Up to 9 chars Default: no limit
7	SELL_IMB	999999999	Cash Sell Imbalance. Dollar amount that sells may exceed buys. Up to 9 chars Default: no limit

<b>Tag</b>	<b>Tag_name</b>	<b>Values</b>	<b>Description</b>
8	MIN_SHARES	999999	Minimum Shares per Fill Up to 6 chars Default: zero (no minimum fill)



## Chapter Three: FIX Messages

### MATCH Now-Supported Messages

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MATCH Now supports the following FIX messages:

0	Heartbeat
1	Test Request
2	Resend Request
3	Reject
4	Sequence Reset
5	Logout
8	Execution Report
9	Order Cancel Reject
A	Logon
C	Email
D	New Order – Single
E	New Order – List
F	Order Cancel Request
G	Cancel/Replace Request
H	Order Status Request
K	List Cancel Request
L	List Execute

### MATCH Now Implementation of FIX Messages

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MATCH Now fully supports all FIX Administrative Messages as defined by the FIX 4.0 and FIX 4.2 protocol and these are not described in this document.

MATCH Now's implementations of the supported FIX 4.0 and FIX 4.2 Application Messages are described in the following sections.

## Orders

As mentioned above, there are three distinct destinations within MATCH Now: *MATCH Now-Liquidity*, *MATCH Now-Market Flow* and *MATCH Now Odd Lot Liquidity*. Each handles orders differently from the other. In addition, the MATCH Now-Liquidity destination and the MATCH Now Odd Lot Liquidity destination accepts orders in two forms: single orders and list orders.

The following table summarizes the behaviour of orders submitted to these destinations and indicates the acceptable values for many of the FIX fields. Further information can be found in the specifications of the *New Order – Single* and *New Order – List* messages in the sections that follow this one.

In this table, the behaviour is indicated by:

- **support** : these values are used by the MATCH Now destination to affect matching functionality
- **reject** : these values are not supported by the destination, and orders containing them will be rejected by the destination or returned unfilled and done for the day
- **report** : these values are accepted and will be reported on the MATCH Now Market Data Feed and as required by regulators, but are not explicitly used by the MATCH Now destination
- **(--)** : these values are not used by the MATCH Now destination and will be ignored if submitted

Order Attribute	FIX Tag	Values	Market Flow Orders	Liquidity Single Orders	Liquidity List Orders	Odd Lot Liquidity Single Orders	Odd Lot Liquidity List Orders
Side	54	buy / sell / short	support	support	support	support	support
		all others	reject	reject	reject	reject	reject
Order Type	40	market / limit	support	support	support	support	support
		all others	reject	reject	reject	reject	reject
Acct Type (Rule 80A)	47	IN / NC / CL / ST / MP / OF /OT	report	report	report	report	report
		all others	reject	reject	reject	reject	reject
Price (for Limit orders)	44	numeric	support	support	support	support	support
Time in Force	59	DAY	support	support	support	support	support
		IOC / FOK	support	reject	reject	reject	reject
		GTC/GTD/GTX <sup>1</sup>	support	reject	reject	reject	reject
		OPG	reject	reject	reject	reject	reject
Expire Time	126	FIX time format	support	support	support	support	support
Handling Instructions	21	all values	---	---	---	---	---
Special Terms	18	AON <sup>2</sup>	reject	reject	reject	reject	reject
		all others	---	---	---	---	---
	63	all values	---	---	---	---	---
Max Floor (Iceberg)	111	integer	---	---	---	---	---
Minimum Fill Volume <sup>3</sup>	110	numeric	support	support	support	---	---
Bypass Marker	6791	non-blank	reject	reject	reject	reject	reject

Order Attribute	FIX Tag	Values	Market Flow Orders	Liquidity Single Orders	Liquidity List Orders	Odd Lot Liquidity Single Orders	Odd Lot Liquidity List Orders
Anonymous	7012	Y/N	support	support	support	support	support
Program Trade	7003	Y/N	report	report	report	report	report
Jitney #	7008	3-digit broker number	report	report	report	report	report
Regulation ID	7013	SS / IA	report	report	report	report	report
Short Marking Exempt	7729	0	support	support	support	support	support
Aggression Level (MidPoint Only)	6005	PAG=0	support	support	support	---	---
Aggression Level (At The Touch)	6005	PAG=-1	reject	support	support	---	---
Min Price Improvement	6005	PMI=1 or PAG=-2	reject	support	support	---	---
Min Execution Fill <sup>4</sup>	6005	MEF= <i>n</i> (Trade Qty)	support	support	support	---	---
Buy/Sell Imbalance	69	numeric	---	---	support	---	support
Expire Time	69	HHMM	---	---	support	---	support
Minimum Fill Volume <sup>3</sup>	69	numeric	---	---	support	---	support

- <sup>1</sup> Good-Till type Market Flow orders receive Cancelled responses (OrdStatus(39) = 4) when no further liquidity is available. This is different than Day orders, which receive Done-for-Day responses (OrdStatus(39) = 3). If this variance in response is a concern, all Market Flow orders should be submitted as Day orders, since all Market Flow orders are either filled immediately or returned, regardless of the TimeInForce value.
- <sup>2</sup> Although the AON special terms type is not supported, an effective all-or-none order can be accomplished by setting the MinQty (110) field to the same value as the OrderQty (38) field.
- <sup>3</sup> The Minimum Fill Volume constraint applies to *the total* fill executed on an order. For an order that executes with multiple tradelets, the volume of each tradelet can be any value.
- <sup>4</sup> The Min Execution Fill applies to each individual tradelet that makes up the larger total trade size. If MEF is populated you will never receive a tradelet less than the value set. MEF will always override Min Fill Volume

## New Order – Single

*New Order – Single* messages may be used for submitting orders to all MATCH Now- destinations. There are some differences in message content between the destinations. These differences are explained in the table below and the associated tables covering MATCH Now supported tag values above.

With the exception of MinQty (tag 110) and Minimum Execution Fill (tag 6005 MEF), MATCH Now does not support special terms, settlement terms, handling instructions, or execution instructions, and these will be ignored if set.

The SME FIX tag:

The SME FIX Tag is used by regulators to monitor directional neutral accounts. All directional neutral accounts must mark Buys & Sells with the 7729=0 on Match Now.

Directional neutral account Buy order: 54=1, 7729=0

Directional neutral account Sell order: 54=2, 7729=0

Shorts marked SME (54=5 & 7729=0) should now be sent in as Sells with SME (54=2, 7729=0), this is due to the repeal of the short tick rule and SME marker.

Short Exempt no longer exist. So orders with what would have been 54=6 for Non Directional accounts should now be sent as Sells with SME (54=2, 7729=0).

All other orders should not include this FIX tag. Any FIX tags that do not appear in the table below will be ignored.

Tag	Field Name	Req'd	Comments
	Standard Header	Y	MsgType = D
50	SenderSubID	Y	Must contain "BrokerNumber:TSXTraderID"
11	ClOrdID	Y	Up to 25 characters
1	Account	N	Stored in the MATCH Now database, and returned in Execution Reports, but NOT used for allocations.
18	ExecInst	N	Not supported. A value of G (All or None) will be explicitly rejected, and all other values will be ignored.
110	MinQty	N	Minimum shares per fill. The volume of <i>each</i> fill will be at least this value.
55	Symbol	Y	Can have up to 8 characters in Symbol.SymbolSfx
65	SymbolSfx	N	Optional - up to 8 characters in Symbol.SymbolSfx. Compound symbols such as ABC.PR.A can be split in any of three ways between tag 55 & 65: <ul style="list-style-type: none"> <li>• ABC.PR.A in tag 55</li> <li>• ABC.PR in tag 55 and A in tag 65</li> <li>• ABC in tag 55 and PR.A in tag 65</li> </ul>
54	Side	Y	Refer to MATCH Now-Supported Order Sides (54) Values. Other values are rejected.
60	TransactTime	N	Time this order request was initiated/released by the trader or trading system.
38	OrderQty	Y	The number of shares to be traded. Must be an Integer.
40	OrdType	Y	Refer to MATCH Now-Supported Order Types (40) Values. Other values are rejected.
44	Price	N	Limit price if a Limit order.
21	HandlInst	Y	Ignored. All orders are treated as automated.
15	Currency	N	Currently ignored
59	TimeInForce	N	Refer to MATCH Now-Supported TimeInForce (59) Values. Other values are rejected.
126	ExpireTime	N	Order expiration time in FIX time format.

<b>Tag</b>	<b>Field Name</b>	<b>Req'd</b>	<b>Comments</b>
47	Rule80A	Y	Refer to MATCH Now-Supported Rule 80A (47) Values. Other values are rejected.
6005	TCM Constraints	N	PAG Aggression Level, Min Price Improvement & Min Execution Fill (PAG, PMI, MEF) different values can be set on both Mkt Flow and Liquidity orders, see 2-3 for more details
7003	Program Trade	N	Contains a Y/N indication of whether or not this order is part of a program trade. Default is 'N' if not included.
7008	Jitney	N	Broker on whose behalf this order is being submitted if different than the executing broker.
7012	Anonymous	N	Contains a Y/N indication of whether or not the broker wishes to remain anonymous when trades associated with this order are reported. Default is 'N' if not included.
7013	RegulationID	N	Does not affect order handling, but is reported to feeds.
7729	<i>Short Marking Exempt (SME)</i>	N	Value is always 0 and can be used only on new orders. SME cannot be applied or removed from existing orders.
	<i>Standard Trailer</i>	Y	

## New Order – List

*New Order – List* messages may be used for submitting orders to the MATCH Now-Liquidity destination and the MATCH Now Odd Lot Liquidity destination.

The MATCH Now-Market Flow destination does not support *New Order – List* messages.

As defined by the FIX specification, *New Order – List* messages are similar in content to *New Order – Single* messages described above, and add the capability to group orders into lists to be executed in concert. A new list needs to contain multiple and different symbols that can be on one side or both sides of the market.

Of particular interest is tag 69 of the *New Order – List* message, which specifies constraints on a list of orders, as described in the List-based Constraints section above.

The submission of orders via *New Order – List* messages does not activate the orders for execution until a subsequent *List Execute* message (described below) is received.

Any FIX tags that do not appear in the table below or in the table above covering the *New Order – Single* tags will be ignored.

Tag	Field Name	Req'd	Comments
	<i>Standard Header</i>	Y	MsgType = E
50	SenderSubID	Y	Must contain "BrokerNumber:TSXTraderID"
66	ListID	Y	Must be unique, by customer, for the day
105	WaveNo	N	Ignored.
67	ListSeqNo	Y	Order number in the list of orders. No checking on ordering. (E.g., Order 3 may come after Order 4.)
68	ListNoOrds	Y	Total number of orders in the list.
69	ListExecInst	N	Refer to the discussion of List-based Constraints above. This tag should only appear in the first order message for a list (where ListSeqNo = 1).
xyz	Other Tags	Y/N	See Tag listing for <i>New Order – Single</i> messages above
	<i>Standard Trailer</i>	Y	

## List Execute

Tag	Field Name	Req'd	Comments
	<i>Standard Header</i>	Y	MsgType = L
66	ListID	Y	Must be unique, by customer, for the day
105	WaveNo	N	Ignored.
58	Text	N	Ignored.
	<i>Standard Trailer</i>	Y	

## Execution Report

Below is the list of the FIX tags that MATCH Now sends in a FIX 4.0 and Fix 4.2 Execution Report.

<b>Tag</b>	<b>Field Name</b>	<b>Req'd</b>	<b>Comments</b>
	<i>Standard Header</i>	Y	MsgType = 8
1	Account	N	As submitted in the order.
6	AvgPx	Y	Average price across executions so far for the order
11	ClOrdID	N	As submitted in the order.
14	CumQty	Y	Total number of shares executed so far for the order.
17	ExecID	Y	MATCH Now-assigned order for this execution report.
19	ExecRefID	N	Original execution report for Cancels or Corrects.
20	ExecTransType	Y	Refer to MATCH Now-Supported ExecTransType (20) Values
31	LastPx	Y	Execution price of this execution
32	LastShares	Y	Number of shares executed in this execution
37	OrderID	Y	MATCH Now-assigned order ID.
38	OrderQty	Y	As submitted in the order.
39	OrdStatus	Y	Refer to MATCH Now-Supported OrderStatus (39) Values
40	OrdType	N	As submitted in the order.
44	Price	N	As submitted in the order.
47	Rule80A	N	As submitted in the order.
54	Side	Y	As submitted in the order.
55	Symbol	Y	As submitted in the order.
57	TargetSubID	Y	As submitted in the SenderSubID (50) field of the order.
58	Text	N	Text of rejection reason when OrdStatus = 8 (rejected)
59	TimelnForce	N	As submitted in the order.
60	TransactTime	N	Time of execution (GMT)
65	SymbolSfx	N	As submitted in the order.
103	OrdRejReason	N	Refer to MATCH Now-Supported Order Reject Reason (103) Values
126	ExpireTime	N	As submitted in the order.
132	BidPx	Y	Canadian NBBO bid at time of execution
133	OfferPx	Y	Canadian NBBO offer at time of execution

<b>Tag</b>	<b>Field Name</b>	<b>Req'd</b>	<b>Comments</b>
851	LastLiquidityInd	N	Indicator to identify whether this fill was a result of a liquidity provider providing or liquidity taker taking the liquidity. Applicable only for <u>OrdStatus</u> of Partial or Filled.  This tag is optional and can be included per O/E Session as requested  Valid Values 1 = Added Liquidity 2 = Removed Liquidity
6776	PrincipalTrade	N	Indicates a transaction where the dealer, as principal, sells securities to or buys securities from its own customer  Valid Values: Y = Yes N = No
6777	WashTrade	N	Indicates a trade that has occurred between proprietary accounts of the same dealer firm  Valid Values: Y = Yes N = No
7003	Program Trade	N	As submitted in the order.
7008	Jitney	N	As submitted in the order.
7012	Anonymous	N	As submitted in the order.
7013	RegulationID	N	As submitted in the order.
7729	Short Marking Exempt (SME)	N	As submitted in the order
	Standard Trailer	Y	

## Order Cancel/Replace Request

*Order Cancel/Replace Request* messages may be used for changing existing orders in the MATCH Now-Liquidity destination and the MATCH Now Odd Lot Liquidity destination. The MATCH Now-Market Flow destination does not support changing orders.

An *Order Cancel/Replace Request* message will be rejected if any of the fields marked "Must match original order" below contains a value different than in the original order.

To change order parameters whose field values are ignored or rejected below, the order should be fully cancelled and a new order issued.

Any FIX tags that do not appear in the table below will be ignored, and will not reflect a change in the Order.

Tag 7729(SME) cannot be applied or removed from existing orders. Orders will have to be cancelled then replaced with the SME tag

<b>Tag</b>	<b>Field Name</b>	<b>Req'd</b>	<b>Comments</b>
	Standard Header	Y	MsgType = G



<b>Tag</b>	<b>Field Name</b>	<b>Req'd</b>	<b>Comments</b>
1	Account	N	Ignored.
11	ClOrdID	Y	Unique identifier of replacement order as assigned by client.
18	ExecInst	N	Not supported. A value of G (All or None) will be explicitly rejected, and all other values will be ignored.
21	HandlInst	Y	Ignored. All orders are treated as automated.
38	OrderQty	Y	May be increased or decreased.
40	OrdType	Y	May be changed. Refer to MATCH Now-Supported Order Types (40) Values.
41	OrigClOrdID	Y	Unique identifier of original order as assigned by client.
44	Price	N	May be changed if changed order is a Limit order.
47	Rule80A	N	Ignored.
50	SenderSubID	Y	Must match original order.
54	Side	Y	Must match original order.
55	Symbol	Y	Must match original order.
59	TimeInForce	N	Must match original order.
65	SymbolSfx	N	Must match original order.
66	ListID	N	Must match original order.
110	MinQty	N	Minimum shares. May be changed up or down.
126	ExpireTime	N	May be changed.
6005	TCM Constraints	N	This can be excluded unless changing the original value
7003	Program Trade	N	Not supported. Message will be rejected if included.
7008	Jitney	N	Not supported. Message will be rejected if included.
7012	Anonymous	N	May be changed.
7013	RegulationID	N	Not supported. Message will be rejected if included.
7729	<i>Short Marking Exempt (SME)</i>	Y	Must match original order.
	Standard Trailer	Y	

## Examples – Order Cancel/Replace

Below is the sequence of events involving Correction (Cancel/Replace) on existing Orders.

		ClordID	OrigClordID
Client	New Order	15	-
MATCH Now	Ack report	15	-
Client	Correction1	16	15
MATCH Now	Pending Replace (OrdStatus = 6)	16	-
MATCH Now	Replaced Report (OrdStatus = 5)	15	-
Client	Correction2	17	16
MATCH Now	Pending Replace Report	17	-
MATCH Now	Replaced Report	16	-

## Order Cancel Request

*Order Cancel Request* messages may be used for cancelling existing orders in the MATCH Now-Liquidity destination and the MATCH Now Odd Lot Liquidity destination. The MATCH Now-Market Flow destination does not support cancelling orders.

Any FIX tags that do not appear in the table below will be ignored.

Tag	Field Name	Req'd	Comments
	<i>Standard Header</i>	Y	MsgType = F
11	ClOrdID	Y	Unique ID of cancel request as assigned by the client
38	OrderQty	Y	Original OrderQty
41	OrigClOrdID	Y	Unique ID of original order as assigned by client
50	SenderSubID	Y	(BrokerNumber:TSXTraderID) Must correspond to the original order
54	Side	Y	Refer to. (page 3-12)
55	Symbol	Y	Up to 8 characters in Symbol.SymbolSfx
58	Text	N	Ignored
65	SymbolSfx	N	Up to 8 characters in Symbol.SymbolSfx
66	ListID	N	Must be set if the corresponding order is a List order
125	CxlType	Y	Refer to MATCH Now-Supported CxlType (125) Values. Other values are rejected.
	<i>Standard Trailer</i>	Y	

## Examples – Order Cancel

Below is the sequence of events involving Cancel Requests on existing orders:

		ClordID	OrigClordID
Client	New Order	15	-
MATCH Now	Ack report	15	-
Client	Cancel	16	15
MATCH Now	Pending Cancel (OrdStatus = 6	16	15
MATCH Now	Cancelled Report (OrdStatus = 4)	16	15

## Order Cancel Reject

Tag	Field Name	Req'd	Comments
	<i>Standard Header</i>	Y	MsgType = 9
37	OrderID	Y	MATCH Now-assigned number for order with ClOrdID, or 0 if order was never received
11	ClOrdID	Y	Unique order id assigned by client to the cancel request or to the <i>replacement</i> order.
41	OrigClOrdID	Y	The unique order id assigned by client to the execution or correction that occurred <b>prior</b> to this cancellation or correction.
66	ListID	N	Will be set if a corresponding <i>List</i> order was found.
102	CxlRejReason	N	0 = Too late to cancel, 1 = Unknown order
58	Text	N	Not used
434	<i>CxlRejResponseTo (FIX 4.2 only)</i>	Y	1 = <i>Order Cancel Request</i> , 2 = <i>Order Cancel/Replace Request</i>
	<i>Standard Trailer</i>	Y	

## Order Status Request

Tag	Field Name	Req'd	Comments
	<i>Standard Header</i>	Y	MsgType = H
37	OrderID	N	Not used - Ignored
11	ClOrdID	Y	Original ID of the order sent by client
55	Symbol	Y	Up to 8 characters in Symbol.SymbolSfx
65	SymbolSfx	N	Up to 8 characters in Symbol.SymbolSfx
54	Side	Y	OrderSide for original order sent with ClOrdID
	<i>Standard Trailer</i>	Y	

## Field Values Supported by MATCH Now

This section describes the values that are supported in some of the fields within the FIX messages described in the preceding section. The behaviour that occurs when values outside these are received is described in the above descriptions of the messages.

### MATCH Now-Supported Order Sides (54) Values

		MATCH NOW LIQUIDITY	MATCH NOW MARKET FLOW	MATCH NOW ODD LOT LIQUIDITY
1	Buy	√	√	√
2	Sell	√	√	√
5	Sell Short	√	√	√

### MATCH Now-Supported Order Types (40) Values

		MATCH NOW LIQUIDITY	MATCH NOW MARKET FLOW	MATCH NOW ODD LOT LIQUIDITY
1	Market	√	√	√
2	Limit	√	√	√

**MATCH Now-Supported TimeInForce (59) Values**

		MATCH NOW LIQUIDITY	MATCH NOW MARKET FLOW	MATCH NOW ODD LOT LIQUIDITY
0	Day	√	√	√
1	Good Till Cancel (GTC)		√	
2	At the Opening (OPG)			
3	Immediate or Cancel (IOC)		√	
4	Fill or Kill (FOK) <i>(treated as IOC by MATCH Now as eligible for partial fill)</i>		√	
5	Good Till Crossing (GTX)		√	
6	Good Till Date		√	

**MATCH Now-Supported Rule 80A (47) Values**

		MATCH NOW LIQUIDITY	MATCH NOW MARKET FLOW	MATCH NOW ODD LOT LIQUIDITY
CL	Client	√	√	√
ST	Specialist	√	√	√
NC	Non-client	√	√	√
IN	Inventory	√	√	√
MP	ME Pro Order	√	√	√
OF	Options Firm Account	√	√	√
OT	Options Market Maker	√	√	√
Other	Will be rejected			

**MATCH Now-Supported CxlType (125) Values**

		MATCH NOW LIQUIDITY	MATCH NOW MARKET FLOW	MATCH NOW ODD LOT LIQUIDITY
F	Full remaining quantity	√	N/A	√

**MATCH Now-Supported ExecTransType (20) Values**

0	New (for Acknowledgements, Fills, confirmation of Cancel, confirmation of Cancel/Replace, Nothing Done)
1	Cancel (Cancel an execution)
2	Correct (change in Price)
3	Status (a response for a status)

**MATCH Now-Supported OrderStatus (39) Values**

0	Acks on order
1	Partial Fill
2	Fill
3	Done for Day
4	Cancelled
5	Replaced
6	Pending Cancel
8	Rejections on orders
9	FIX 4.2 Order Cancel Reject <ul style="list-style-type: none"> <li>• On a new order: Cancel reject is Tag 35 (OrdStatus) = 9 and Tag 434 (CxlRejResponseTo) = 1</li> <li>• Cancel/replace reject is Tag 35=9 and Tag 434=2,</li> </ul>
E	FIX 4.2 Pending replace

**MATCH Now-Supported Order Reject Reason (103) Values**

0	Invalid orders due to invalid specifications
---	--

**MATCH Now-Order Reject Reason (35=8) (58) Values**

58=Unknown Symbol	Invalid Symbol
58=Unknown POSIT client	Invalid/Inactive Trader Id
58=no trade	Standard response on Market Flow destination if no contra liquidity available.
58=Invalid Aggressive mode for Liquidity Order, PAG=-1	Incorrect PAG value in Fix Tag 6005.....or.....Order size too small for at the quote trading.
58=Invalid order	Multiple reasons – Contact the support team 416-861-1010
58=Unknown Broker Trader ID	Incorrect Broker Number used in Tag 50

58=Invalid SME(7729)/OrdType(40)	Invalid Order Type – Sell Short Exempt (tag 54=6)
58=Too late for the request	Attempt to cancel an already filled/partially filled/cancelled order
58=Too early for this destination	Orders can be sent to Liquidity Destination and Odd Lot Destination from 8am onwards. Orders can be sent to Market Flow destination from 09.30am onwards. Trading begins at 9.30am.
58=OLLP order must be unique	Passive Odd Lot Liquidity providers can submit only one buy and one sell supplier order only per ticker at any moment in time. (Per TraderID)

## Supported Symbol Suffixes

For symbols, MATCH Now uses standard TSX / TSXV symbology as follows:

<b>Symbol Type</b>	<b>Format</b>
Common shares	XXX
Special voting classes: <ul style="list-style-type: none"> <li>• Non-voting shares</li> <li>• Multiple-voting shares</li> <li>• Subordinate-voting shares</li> <li>• Limited-voting shares</li> <li>• Restricted-voting shares</li> </ul>	XXX.A / XXX.B (symbol for special voting classes are prescribed by the listing Exchange and variations can be accepted but currently are not being used by TSX and TSXV))
Preferred shares	XXX.PR.X
Rights	XXX.RT / XXX.RT.X
Warrants	XXX.WT / XXX.WT.X
Units	XXX.UN
When issued	XXX.WI
Installment Receipts	XXX.IR

MATCH Now does not support trading in Debenture, Notes, USD denominated securities.



## Chapter Four: FIX Test Plan

### MATCH Now-Supported Messages

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As mentioned earlier in this document, the following FIX messages are supported by MATCH Now Direct Connect:

<b>Administration messages</b>	<ul style="list-style-type: none"><li>• Heartbeat</li><li>• Logon</li><li>• Test Request</li><li>• Resend Request</li><li>• Reject</li><li>• Sequence Reset</li><li>• Logout</li></ul>
<b>Application messages</b>	<ul style="list-style-type: none"><li>• New Order - Single</li><li>• Execution Reports</li><li>• Orders Cancel/Replace Request</li><li>• Order Cancel Request</li><li>• Order Cancel Reject</li><li>• Orders Status Request</li><li>• Email</li><li>• Don't Know Trade (DK)</li><li>• New Order List</li><li>• List Execute</li></ul>

## Connection Instructions

---

Before testing, you'll need to establish a connection. Follow these steps:

1. Determine which FIX protocol version you will be using.
2. Agree on the method of testing: either Internet or wait for a leased line to be installed.
3. Provide MATCH Now with the following information:
  - Your SenderCompID.
  - Your list of SubIds (SenderSubID), if needed to represent multiple traders.
5. You'll need to know the following MATCH Now settings:
  - MATCH Now's SenderCompID will be "TCM" unless you request a change.
  - You will be supplied with an IP address and Port# in order to connect to MATCH Now.

## Basic Connectivity Test

---

1. Establish the connection.
2. After authentication, exchange Heartbeats.
3. Disconnect, then reconnect again. (Generate Resend\_Requests if gaps are detected)
4. MATCH Now will send the following messages:
  - Logon - In response to the client's logon
  - TestRequest - After the logon is received
  - HeartBeat
  - Resend\_Request - If a gap is detected by MATCH Now
  - Sequence\_reset - After resending all messages requested by receiving side
  - Logout - This will occur during any of the following events:
    - The incoming sequence number is less than expected
    - Regular logout
    - Logout in case the client's logon cannot be authenticated.
5. Expect to receive the following messages:
  - Logon
  - TestRequest
  - HeartBeat
  - Resend\_Request (if a gap is detected by the receiving application)
  - Logout

## Session Protocol Test

---

### MATCH Now – Liquidity Destination

#### Single Orders

- **New Order Singles**
  - New Single Orders from client.
  - New Single Order with constraints set.
- **Cancel** - Cancel requests on outstanding orders. Partial cancellation of an order will be rejected.
- **Cancel/Replace** - Outstanding orders will be requested to be corrected for:
  - Order Type Change
  - Quantity Change
  - Price Change
  - Perform a cancel
- **Status Request** - Status Request messages will be sent by the client to determine the current status of an order.
- **Possdupe** - If the client is uncertain as to whether an order was successfully transmitted, Possduplicated Orders will be sent by the client under the same sequence number of the original order.
- **Execution Reports** - MATCH Now will generate all possible reports.

#### List Orders

- **New Order - List**
  - List Orders from client with constraints, followed by a ListExecute.
- **Cancel/Replace** - As done for single orders. Outstanding orders will be requested to be corrected for:
  - Order Type Change
  - Quantity Change
  - Price Change
  - Constraint change
  - Perform a cancel

### MATCH Now – Market Flow Destination

#### Single Orders

- **New Order Singles** - Valid New Single Orders from client.
  - Submit an order with a match available in MATCH Now

- Submit an order with no match available in MATCH Now
- **Cancels/Replace** – Cancels and corrections will be rejected on Market Flow orders. By definition, it will always be too late to cancel (correct) a Market Flow order. Unmatched orders are re-routed to the broker/network for on-routing to the marketplace. Cancels and corrects should apply to the re-routed orders.
- **Execution Reports** - MATCH Now will generate all possible reports.
  - Full execution
  - Partial execution; remainder is returned to the sending broker/network for on-routing to the marketplace

## Special Cases

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### Single Order Scenarios:

**Rejected Orders** may occur for the following reasons:

- **Cancel\_Reject** - These will be caused by either of the following reasons:
  - **Unknown order** - Cancel/Correct for an unknown order by Client.
  - **TLTC** - This case will be simulated by receiving a Cancel request on an order while the order is on its way to being filled.
  - **Unknown symbol** - An order from the Client with a security which MATCH Now doesn't trade.
  - **Unsolicited cancel** - MATCH Now may cancel an order without a request.

### List Order Scenarios

**The following are error scenarios for list orders:**

- If a new order is received with the same list id after a *List-Execute* has been received for the same list. The order will be rejected.
- If *List Execute* for an unknown list is received. No action will be taken from the MATCH Now side.
- If *List Execute* is received for a list where all orders are not yet received for that list. Rejections will be sent for each order in the list.
- Orders received in wrong order in a list will not be rejected.
- If a new list is received with a duplicate list id. Rejection will be sent for all the orders in the duplicate list.
- If a *List Execute* is received for an already cancelled list. An alert will be logged on the MATCH Now side.

## Recovery Tests

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### Test 1

**The following steps will be performed from the MATCH Now side:**

1. Establish the connection.

2. Receive a few orders, then send execution reports back.
3. Drop the connection.
4. Decrease the expected incoming sequence number to a lower number than the current expected sequence number. (E.g., if the last received message had a MsgSeqNum of 20, decrease the expected incoming number to 12.)
5. Reconnect, then establish connection.
6. As soon as connection is established and first message is received, MATCH Now will issue a Resend\_Request for the gap. (from 12 to all)

**MATCH Now expects the following tasks to be performed from the Client Side:**

1. Retransmission of all the messages sought.
2. Emulate the same scenario for Resends.

## Test 2

1. Establish the connection.
2. Receive a few orders from client. Break the connection while sending executions back to the client so that not all the reports go through. Restore the connection and check if the client receives all the remaining (missing) reports.