



# Nordic FIX 2.01 Delta Specification

INET Nordic

Nordic Equities Markets



**REVISION 1.5**  
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**APPROVED**

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## Document History

Revision	Published	Author(s)	Summary of Changes
1.0	October 2021	Nasdaq	Initial version of the document
1.1	April 2022	Nasdaq	Updated section 1.3 - Implementation Schedule Added section 2.9 – Updates to tag 150 – ExecType, tag 20 obsolete
1.2	May 2022	Nasdaq	Clarified the migration from FIX 4,2 to 5.0 vs the Nasdaq Nordic FIX protocol specifications versions moving from version 1.36.x to 2.00.x. Added FIX port migration information in a new section 3.
1.3	August 29, 2022	Nasdaq	Updated section 3.1 - Migration Strategy, how to distinguish FIX 4.2 vs 5.0 ports in Member Portal
1.4	December 8, 2022	Nasdaq	<u>Updated section 2.2 – Transport Layer FIXT 1.1</u> Added section 2.10 - New FIX Tag 1138 – DisplayQty. <u>Added section 3 – Functional changes</u> <u>Added section 4.4 – New IP subnets for FIX 5.0 ports</u>
1.5	February 28, 2023		Updated section 2.1 – FIX Tag 37 is not zero padded anymore Added section 3.4 – Market Price Order behaviour changes Added section 3.5 - Cancel over Any limitations Corrected FIX 5.0 subnets in section 4.4

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## 1 Overview

Nasdaq Nordic<sup>1</sup> plans to implement mandatory changes and enhancements to the INET Nordic trading system.

The plan is to enhance the INET Nordic trading system to meet client needs when it comes to additional functionalities to be offered over OUCH, and to achieve lower latency for FIX users.

INET Nordic will provide a full and complete FIX access comparable to the current FIX services. The protocol version will however be upgraded to FIX 5.0 SP2.

The new INET Nordic architecture will provide clients with new **FIX 5.0 order entry ports** to achieve lower latency than what the current FIX Engine provides.

New FIX 5.0 DROP ports and FIX 5.0 DROP for OUCH5 ports providing additional data will also be made available as part of this enhancement. The FIX 5.0 DROP for OUCH5 will also support for the new order types introduced in OUCH5.

**Nasdaq Nordics implementation of the FIX 5.0 SP2 protocol for INET Nordic is described in the Nasdaq Nordic 2.01 protocol specifications. The session level messages are moved to the separate FIXT.1.1 protocol specification.**

### 1.1 Purpose of document

The purpose of this document is to present the changes and to give further guidance for all current FIX users.

### 1.2 Protocol specifications

New Nasdaq Nordic FIX 2.01 and FIXT.1.1 protocol specifications related to this upcoming change are available at the Nasdaq Nordic Technical Information website, under [INET Nordic Protocol Specifications](#).

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<sup>1</sup> For the purpose of this document Nasdaq Nordic refers to, either each individually or all together, Nasdaq Copenhagen A/S, Nasdaq Helsinki Ltd, Nasdaq Iceland hf. and Nasdaq Stockholm AB. Nasdaq Nordic may also include Nasdaq Baltic that respectively refers to Nasdaq Riga AS, Nasdaq Tallinn AS and AB Nasdaq Vilnius. Nasdaq Copenhagen, Nasdaq Helsinki, Nasdaq Iceland, Nasdaq Riga, Nasdaq Stockholm, Nasdaq Tallinn and Nasdaq Vilnius are respectively brand names for Nasdaq Copenhagen A/S, Nasdaq Helsinki Ltd, Nasdaq Iceland hf., Nasdaq Riga AS, Nasdaq Stockholm AB, Nasdaq Tallinn AS and AB Nasdaq Vilnius.

### 1.3 Implementation schedule

For latest implementation timeline, see [IT-Notices](#) and the [Nasdaq INET Nordic Functional Enhancement](#) webpage.

After the migration current versions of the protocols will be retired.

### 1.4 Support

For technical questions, please contact Nasdaq Cash Equity Operations:

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## 2 FIX 5.0 SP 2 protocol changes

### 2.1 Overview

With the FIX 5.0 enhancement a number of changes in the Nasdaq Nordic FIX services are introduced.

Current FIX 4.2 ports, supporting INET Nordic FIX protocol specifications v1.36.x, will be replaced with FIX 5.0 SP2 ports using the new INET Nordic FIX 2.01.x protocol versions.

#### Common FIX changes

- FIX Transport Layer FIXT 1.1 is introduced for the session level messaging
- Nanosecond granularity timestamps are introduced in the transport layer
- Additional tags are introduced in execution reports for Good-Till-Cancel carryovers, for consistency with OUCH5.
- FIX Tag 20, used to indicate a trade break/cancel of a trade on Execution reports, is obsolete and replaced with Value "H" – Trade cancel in FIX tag 150 - ExecType. In addition, FIX Tag values "1" – Partial Fill, and "2" – Fill, are replaced with value "F" – Trade.
- New tag 1138 DisplayQty (refreshed displayed quantity on a reserve order restatement).

#### FIX Order Entry

- The maximum allowed length for tag 11 ClOrdId is changed from 20 to 14 characters.
- Imbalance order functionality will be discontinued with the production launch of FIX 5.0, including FIX 4.2.

#### FIX DROP

- The new shared FIX DROP 2.01 specification will be applicable going forward for both FIX 5.0 DROP for FIX and FIX 5.0 DROP for OUCH5.
- New tag 20109 OrderCondition.
- FIX Tag 37 OrderID will no longer be zero padded.

### 2.2 Transport Layer FIXT 1.1

As part of the FIX 5.0 major update, session level information has been standardized to refer to the existing FIXT 1.1 Transport Layer specification.

- FIX tag 8 BeginString will need to state the new session level protocol version 'FIXT.1.1'.
- FIX tag 1137 DefaultAppVerID will need to state the FIX service pack release '9' (FIX50SP2)
- FIX tag 373 SessionRejectReason adds the new reject reason 99 (Other).

### 2.3 Nanosecond granularity timestamps

The enhancement additionally introduces the possibility to send nanosecond granularity for timestamps in transport layer FIX tags 52 SendingTime and 122 OrigSendingTime. A client will therefore need to be able to handle also the nanoseconds parts of these timestamp tags which will be sent outbound from Nasdaq Nordic.

<i>Transport layer timestamps</i>		
<i>Tag</i>	<i>Name</i>	<i>Format</i>
52	SendingTime	YYYYMMDD-HH:MM:SS YYYYMMDD-HH:MM:SS.ssssssss
122	OrigSendingTime	YYYYMMDD-HH:MM:SS YYYYMMDD-HH:MM:SS.ssssssss

### 2.4 Good-Till-Cancel carryovers

Execution Report restatements for carryover Good-Till-Cancel orders sent at the beginning of the trading day have been extended to supply the following FIX tags:

<i>Execution Report</i>		
<i>Tag</i>	<i>Name</i>	<i>Value</i>
20107	OriginalOrderReferenceNumber	Nasdaq-supplied Order Reference Number for a restated Good-Till-Cancel order. Note: the latest Order Reference Number from the initial order or from a later replacement or carryover of that order
20108	OriginalOrderEntryDate	YYYYMMDD - Original Order Entry Date for a restated Good-Till-Cancel Order.  Note: Updated when order is replaced.

## 2.5 Shorter maximum length for tag 11 ClOrdId

The new native FIX 5.0 Order Entry port will require clients to adhere to a shorter maximum length for tag 11 ClOrdID. The client-provided tag representing the unique identifier of the order on a specific connector per day has historically allowed up to 20 characters. For FIX 5.0, the length has been updated to 14 characters or less.

<b>Tag</b>	<b>Length</b>	<b>Name</b>	<b>Value</b>
11	14	ClOrdId	Unique identifier
41	14	OrigClOrdId	ClOrdId of the previous order

## 2.6 Imbalance only order functionality is discontinued

The Imbalance only order functionality currently available in FIX 4.2 via tag 9140 DisplayInst=I will be discontinued in FIX 5.0. Other values that can be set via tag 9140 DisplayInst are unchanged.

<b>Imbalance only order</b>			
<b>Tag</b>	<b>Name</b>	<b>FIX 4.2</b>	<b>FIX 5.0</b>
9140	DisplayInst	I – Imbalance only	Not available

## 2.7 Shared specification for FIX DROP for FIX and FIX DROP for OUCH5

With the introduction of FIX 5.0, the FIX DROP of activity entered over OUCH5 and FIX 5.0 will both be described by the new shared FIX DROP 2.01 specification.

To allow for this, some tags serve different purposes for orders entered through OUCH5 and orders entered through FIX 5.0:

<b>Tag</b>	<b>Name</b>	<b>OUCH5</b>	<b>FIX 5.0</b>
11	ClOrdId	UserRefNum	Tag 11 - ClOrdId
41	OrigClOrdId	OrigUserRefNum	Tag 41 - OrigClOrdId

Orders and trades from FIX 5.0 and OUCH5 will not be consolidated over one single FIX DROP port. OUCH5 clients wishing to have a FIX DROP copy session still need to have a separate port for this purpose.

## 2.8 New tag 20109 OrderCondition

The FIX DROP 2.01.x specification introduces the new tag 20109 which describes conditions that in some way change the behavior of an order. A number of values that in current DROP are communicated in tag 9140 DisplayInst are moved to the new tag 20109 OrderCondition and there is also an additional value for a new order condition, Dark-lit Sweep.

<i>Execution Report</i>		
<i>Tag</i>	<i>Name</i>	
20109	OrderCondition	Conditions that in some way change the behavior of the order. “W” = MarketMaker Order “U” = MarketMaker Order Refresh “P” = Top-of-Book “Q” = Dark-lit Sweep

## 2.9 Updates to tag 150 ExecType, tag 20 obsolete

With the update of FIX 4.2 to 5.0 SP2, FIX Tag [150] - ExecType is updated to match the FIX 5.0 SP2 standard.

- Values “1” (Partial Fill) and “2” (Fill) are replaced with value “F” (Trade) for execution.
- Value “H” (Trade Cancel) is introduced for trade cancels, replacing obsolete tag 20 – ExecTransType.

<i>Execution Report</i>		
<i>Tag</i>	<i>Name</i>	
150	ExecType	Describes the specific Execution Report.  Valid values: 0 = New 4 = Canceled 5 = Replaced 6 = Pending Cancel 8 = Rejected D = Restated E = Pending Replace F = Trade (partial fill or fill) H = Trade Cancel

## 2.10 New FIX Tag 1138 – DisplayQty

When entering, or modifying, a reserve order, FIX Tag [111] – MaxFloor is used to enter the displayed quantity of the total order quantity. In case the displayed quantity is refreshed by the host, a Restatement Message is sent to the client with the current displayed quantity in a new FIX Tag [1138] – DisplayQty.

### 3 Functional changes

This section will highlight behavioral changes in INET Nordic introduced with the migration from FIX 4.2 to FIX 5.0 SP2 but not related to technical protocol changes mentioned in previous sections. However, some of these changes are applicable for FIX 4.2 as well, marked with an \* below.

#### 3.1 Functional changes to Restatement messages

Execution restatement messages are sent when an order is refreshed on the host. Restatements are only sent for displayed orders that are shown in ITCH.

- When an order is given an ITCH order reference number
- When a displayed pegged order is re-pegged with a new price (not for hidden pegged orders).\*
- Iceberg orders (with Max floor) – if the visible quantity is refreshed. The updated displayed quantity of the order is relayed in a new tag 1138 – DisplayQty See 2.10 above.
- Restatements will no longer be sent as a result of a Cancel/replace modification of an order (except if a refreshment of DisplayQty occurred).

#### 3.2 Nordic@Mid behavioral changes

Nordic@Mid (N@M) mid-point pegged orders regardless of size, without Limit price, will be rejected if sent in on Double Volume Capped shares. N@M orders with Limit price and above Large In Scale will be accepted.  
\*

#### 3.3 Pegged orders not accepted in Auctions

Pegged orders will not be accepted during an ongoing auction. Pegged orders sent in during continuous trading will be accepted.\*

#### 3.4 Market Priced Orders

In FIX 4.2 Market Price Orders were treated as IOC orders regardless what was entered in the TimeInForce field and during an Auction a Market Price Order was automatically converted to a Cross Order. In FIX 5.0 (and OUCH 5) Nasdaq expects the order to be propagated with the correct values upon order entry.

Therefore a Market Priced Orders in FIX 5.0 requires TIF = IOC. In addition, Market Price Orders during continuous trading requires to be Market Pegged (ExecInst = P (Market) and PegDifference = 0.

Since pegging is not allowed in auctions (see 3.2 above), a Market Price Order target for an Auction can not include any Peg information but requires the CrossTradeFlag to be set to the targeted/current Auction (Opening, Intraday, Halt or Closing).

### **3.5 Cancel over Any limitations**

There is a limitation on Cancel Over Any functionality. A cancel request from one FIX port to cancel orders entered on another FIX port will only work within the same FIX version, not between FIX 4.2 and FIX 5.0.

## 4 FIX 5.0 Order Entry and FIX 5.0 DROP ports

### 4.1 Migration strategy

Nasdaq will duplicate all existing FIX 4.2 ports to FIX 5.0 ports. All port details will be available in Nasdaq Member Portal under Technical Access view. FIX 4.2 and FIX 5.0 ports are distinguished, in Member Portal, by the Version number in the port details (4.2 resp 5.0). Please note that Protocol filter in Technical Access view has different protocol types for old and new ports according to the table below:

FIX port v4.2 vs 5.0	Member Portal Technical Access View	
Port Type	Version	Protocol
FIX Order Entry	4.2	FIX
	5.0	FIX OE
FIX DROP for FIX	4.2	FIX DROP
	5.0	FIX DROP (FIX)
FIX DROP for OUCH	4.2	OUCH FIX DROP
	5.0	FIX DROP (OUCH)

With both old and new ports running in parallel, the client can migrate at their own pace during the migration window.

**Note: FIX 4.2 DROPs includes only current OUCH 4 and FIX 4.2 entered messages, the new FIX 5.0 DROPs only OUCH 5 and FIX 5.0 messages. Therefore clients will need both old and new FIX DROP ports running in parallel during the migration period to receive all messages.**

### 4.2 Account /Port naming convention

An INET Account/Port name is six character long. The first four characters represent the client MPID, zero padded to the right, the fifth character the Port Type and FIX version, and the last character an increasing sequence number (1-9, A-Z). Example, the current FIX 4.2 OE port *MPIDF2* will get an equivalent FIX 5.0 OE port named *MPIDE2*.

Port Type	Current FIX 4.2 ports	New FIX 5.0 ports
FIX Order Entry	F	E
FIX DROP for FIX OE	X	Y
FIX DROP for OUCH	A	U

### 4.3 FIX DROP port message filtering changes

A FIX DROP can be filtered by Message Type. The current FIX 4.2 DROP allows for individual Message Type filtering where the new FIX 5.0 DROP will use Message Groups filters. The duplicated new FIX 5.0 DROP may therefore include more message types than the current FIX DROP which clients should be aware of. As an example, if a current FIX DROP port only listens to Executions, the duplicated FIX 5.0 DROP will be filtered on Trades, including both Executions and Breaks messages.

New Message groups	Messages in filter
Trades	Executions
	Breaks
Orders	Order Ack
	Order Replace
	Order Cancel
Restatements	Restatements
Rejects	Rejects

### 4.4 New IP subnets for FIX 5.0 production ports

With the introduction of FIX 5.0 Order Entry and FIX 5.0 FIX DROP for FIX 5.0 messages, new IP subnets 159.79.192.0/22 and 159.79.196.0/22 will be introduced in INET Production for FIX 5.0 Order Entry and FIX DROP only. FIX 5.0 DROP for OUCH messages will remain on current FIX 4.2 subnets, but assigned a new Port number for FIX 5.0 DROP ports. Clients individual FIX port IP configuration, within these ranges, will be found in Member Portal Technical Access view.

FIX port type	Site A - VASBY (Primary DC)	Site B - PORT (Secondary DC)	Port Number (New)
FIX 5.0 OE	159.79.192.0/22	159.79.196.0/22	18200
FIX 5.0 DROP (for FIX msgs)	159.79.192.0/22	159.79.196.0/22	18750
FIX 5.0 DROP for OUCH msgs	159.79.136.0/21	194.110.106.128/25	16850

Connectivity details are outlined in the INET Nordic Connectivity Guidelines for Production and Test (NTF) respectively, and in the Nasdaq Nordic Announced IP nets document, all available at [European Market Connectivity](#) webpage.