

Ovation Platform – DDS Output Overview Guide

OCC

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MARKETS®**

Ovation Platform – DDS Output Overview Guide

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Overview

About This Document

This *OCC Ovation Platform – DDS Output Overview Guide* provides an overview of the OCC Data Distribution Services (DDS) application. OCC sends DDS messages in FIXML format to participating firms. This document contains a DDS application overview, including information about subscriptions, system components, FIXML schema, batch and real time data delivery processing, and reference information.

DDS Reference Guides

Refer to the following guides for information about specific DDS messages. DDS guides for the Ovation platform are available on the Theocc.com and Myocc.com websites.

- *Ovation Platform – DDS Collateral Output Guide*
- *Ovation Platform – DDS Contrary Intentions Output Guide*
- *Ovation Platform – DDS Delta Position Limits Reference Guide for Clearing Members*
- *Ovation Platform – DDS Delta Position Limits Output Guide for Exchanges*
- *Ovation Platform – DDS Market Data Output Guide*
- *Ovation Platform – DDS On-Demand Positions Guide*
- *Ovation Platform – DDS Risk Based Haircuts (RBH) and Customer Portfolio Margin (CPM) Output Guide*
- *Ovation Platform – DDS Stock Loan Output Guide – Hedge Program*
- *Ovation Platform – DDS Stock Loan Output Guide – Market Loan Program*
- *Ovation Platform – DDS Trades, Positions, and E&A Output Guide*

What's New With the Ovation Platform?

The following table lists high-level DDS application changes in the Ovation platform compared to the ENCORE system. Refer to the DDS guides on Theocc.com website for changes to specific messages.

Change	Description
Order of tags within a message	The ordering of tags within a message may be different in the Ovation platform. Firms should use a standard XML parser and not expect a file to be parsed with a specific order
Report IDs	With the launch of Ovation, all reference data will be published with new Report IDs (RptIDs), and these IDs will not be consistent day over day or between message types.
Start of Day message for Extended Trading Hour (ETH) session	A Start of Day message will no longer be offered for ETH session. It will continue to be offered for the regular session.
Timestamp offset	For messages with a timestamp: In the Ovation platform, execution times and transaction times display in Coordinated Universal Time (UTC) with no offset. In the ENCORE system, post trade and collateral messages have an offset of 5 hours.
Truncation	Although many attributes will be truncated to 100, OCC cannot guarantee a maximum length on FIXML attributes. Receiving systems must perform their own truncation if OCC publishes tags with a greater length than desired.
Zipped files	All batch files will be zipped and compressed. With ENCORE, although some files were compressed, no files were zipped.

Glossary of Terms

You should be familiar with the following terms prior to reading this guide.

DDS (Data Distribution Services) – The DDS system supports both batch and real time data delivery and utilizes the FIXML data formatting standard.

FIXML (Financial Information eXchange Markup Language) – The XML-derived grammar of the FIX protocol. A FIXML implementation includes message format validation, a clean, expressive structure, and leverages existing standards. The standard provides the ability to embed FIXML messages within traditional FIX headers and trailers.

Ovation – The clearing platform at OCC.

Package – Collection of DDS transmissions that are grouped together based on selections made when the subscription was created.

Recipient – The entity (clearing member organization, trade source, regulatory agency or service bureau) where the DDS data is sent.

Subscriber – The entity (a clearing member organization, trade source, or regulatory agency) that requests a package of transmissions and owns the data that is transmitted to recipients.

Subscription – A grouping of accounts owned by the subscriber, used to separate and organize proprietary data.

DDS Subscription Concepts

Subscribers, Recipients, and Packages

The DDS system provides various options for setting up subscriber and recipient profiles:

- An entity can act as a subscriber and recipient at the same time.
- A subscriber can have its data distributed to one or more recipients.
- A recipient can receive data for multiple subscribers.

OCC Member Services maintains subscribers, subscriptions, recipients, and packages at the request of organizations subscribing to or receiving DDS transmissions.

For organizations that want to receive proprietary data from the DDS system, a minimum of one subscription needs to be defined. For Clearing Members that require the separation of data files between groups of accounts, a separate subscription is created for each group of accounts. Security follows the same data-level security protocols that are applied to user accounts in the Ovation platform.

Once a subscription is created, the DDS transmissions that will be received for that subscription are defined. Organizations can bundle one or more transmissions as a package, such as bundling Exercise and Assignment transmissions in an E&A Package, or bundling Prices, Security List and Security Definition transmissions in a Market Data Package.

Packages are then assigned one or more recipient destinations. A recipient could be the same organization that subscribes to the data service or a different entity (such as a service bureau). A recipient destination can be a batch file to be pulled by a recipient's data center or a message queue where messages are delivered to the recipient in a real time mode. Although all transmission types are available in batch mode, not all are available in a real time mode.

Packages to be pulled in batch mode are available in their entirety when OCC processes the last DDS transmission in a package. OCC sends messages in real time as soon as the individual messages are generated within the Ovation platform.

For assistance, please contact your Member Services representative or the OCC Help Desk at one of the following:

- 800-621-6072 or 800-544-6091 (U.S.)
- 800-424-7320 (Canada)
- memberservices@theocc.com

Real Time Start of Day and End of Day Messages

A start of day (SOD) message is available to all users who subscribe to real time DDS messages. The DDS system transmits the SOD message to indicate that a new daily cycle has begun. OCC sends the message only once in any one cycle.

The DDS system transmits an end of day (EOD) message for all transmissions that can be delivered in a real time mode. An EOD message is sent for all messages associated with a specific transmission when the transmission is complete. The EOD message:

- Indicates that no more messages will be sent for the transmission associated with the EOD message.
- Provides a total count of messages for the transmission associated with the EOD message for the given cycle.

EOD messages are delivered only to those organizations that subscribe to the data in real time mode.

EOD messages contain detailed content pertaining to the related transmission.

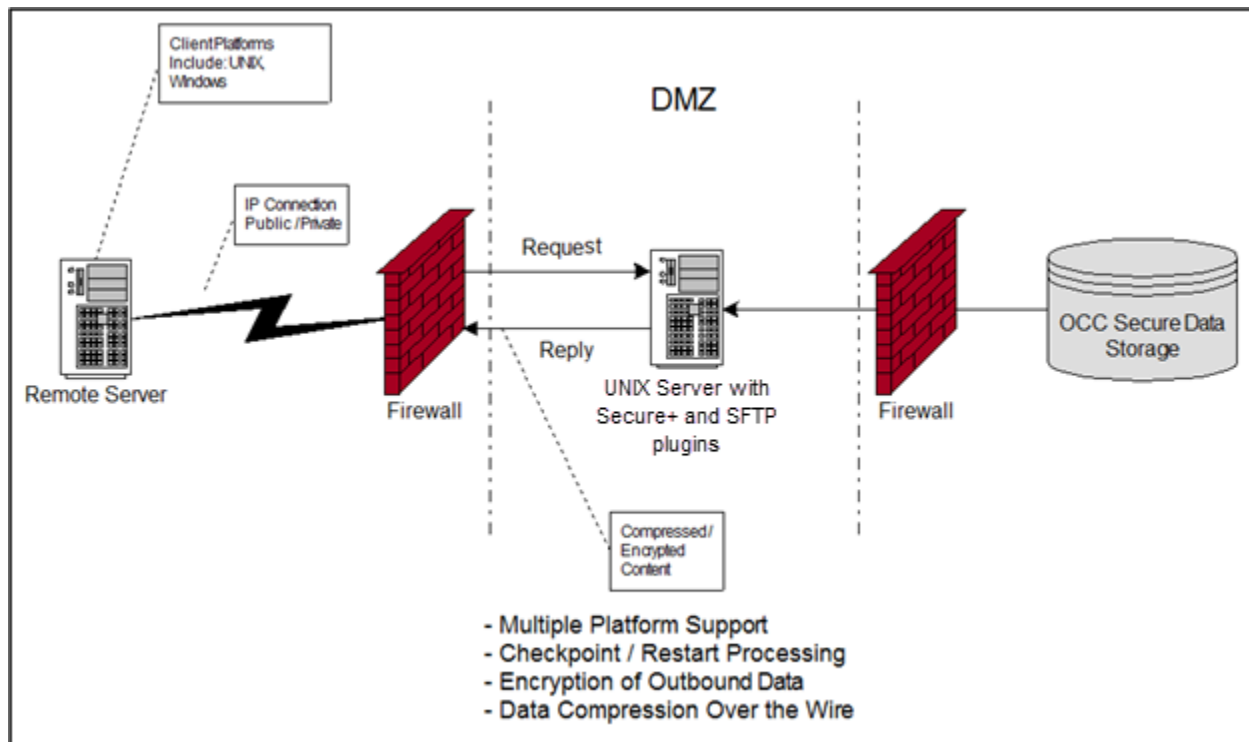
Data Delivery Processes

This section explains DDS delivery batch pull and real time push data flows.

Batch Pull Data Flow

OCC offers a batch pull data delivery service. In this scenario, OCC publishes a DDS recipient's data to a secure data storage device and the recipient's client system initiates the data transfer.

Figure 1 –Batch Pull Delivery Model Interactions and Confirmations



If the requested data files have been published, OCC fulfills the request. If the requested data files are not yet published, the firm will get an error message when trying to pull the file.

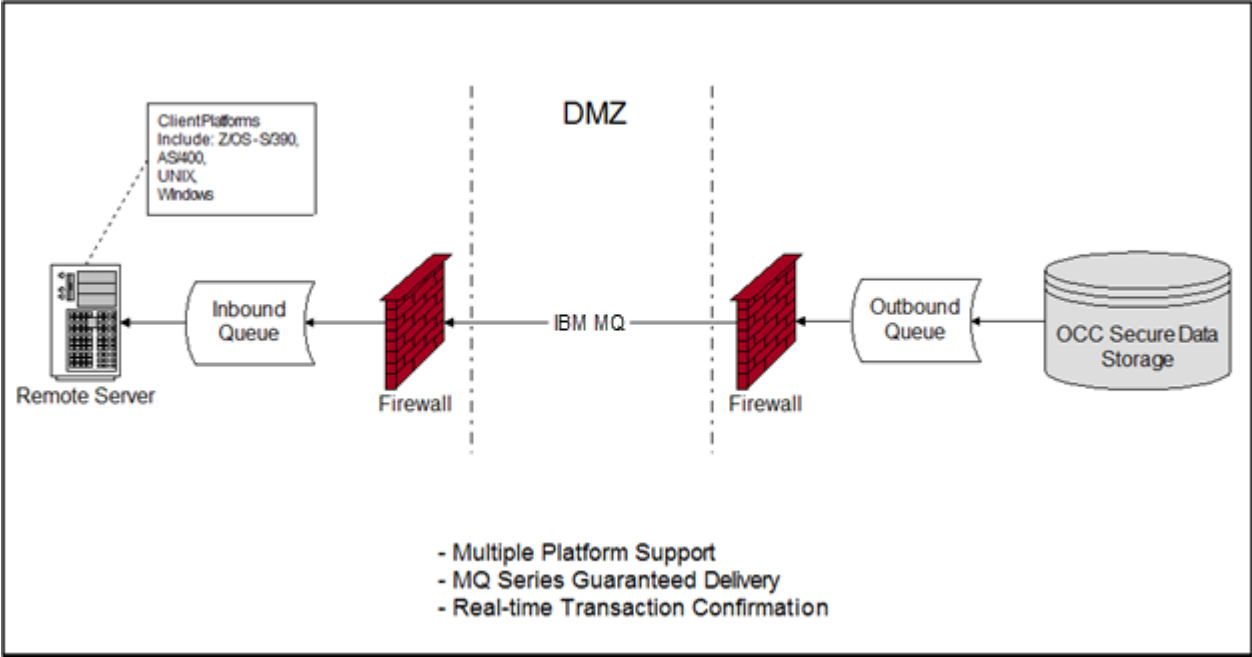
All batch files are zipped and compressed.

The hardware and software requirements for the client system in the batch pull scenario are discussed in the subsequent section.

Real Time Push Data Flow

The DDS system provides transaction-based records (trades, post trades, and so on) in a real time environment. For example, as a real time trade is validated, the DDS system sends an output message to real time subscribers. To enable the delivery of these real time messages, OCC uses a proven infrastructure that offers native data security, guaranteed delivery, and high throughput capacity. The hardware and software requirements for the client system in this scenario are discussed in the subsequent section.

Figure 2 –Real Time Data Delivery Model Interactions and Confirmations



Hardware and Software Requirements

This section explains the hardware and software required for receiving DDS transmissions.

Hardware

OCC supports both private line and Internet Protocol (IP) connection options for data delivery. OCC encrypts and compresses the data.

Software for Batch Pull File Delivery

Organizations use a Secure File Transfer Protocol (SFTP) infrastructure to pull batch data service files from OCC servers. SFTP allows for secure, encrypted, compressible file transfers over any reliable network.

The OCC SFTP infrastructure supports any SSH v3 compliant SFTP client on any UNIX or Windows platform. Most modern UNIX and Linux operating systems come pre-installed with the OpenSSH packages which include the SFTP client. Customers are responsible for acquiring the SFTP client of their choice.

In order to authenticate to the OCC SFTP server, each client firm provides an SSH public key that is paired to an SSH private key to be used for the connection. OCC also issues a user ID during the SFTP setup process.

Software for Real Time Push Messaging

OCC uses a real time messaging solution based on the IBM MQ product suite. To enable real time messaging, organizations must possess an MQ license and define and configure an MQ channel.

If an organization chooses not to use MQ, all requested data is still available in the form of file-based transmissions at the end of each processing day. All transmissions that are available in real time are also available in batch pull mode.

FIXML Schema Concepts

FIXML Schema is the data standard for the DDS system.

The OCC FIXML package includes many files. For all parsing and validation, start with the file **fixml-occ-4-4.xsd**. All other files use this base file with the exception of Stock Loan. Stock Loan uses **fixml-occ-5-0-sp2.xsd**

To read DDS FIXML messages, firms are required to have an XML parser that adheres to the W3C¹ 1.0 and 1.1 XML recommendations

In order to support new future business needs, OCC reserves the right to utilize previously unused tags, which are already part of the FIXML schema, to DDS FIXML messages.

Following the XML standard, all DDS message elements and attributes must contain a value. For example, NULL and empty string values are not permitted.

The FIXML schema imposes an order to messages, but this order only applies to the component blocks included in the message. Firms should not expect tags within a DDS file to be parsed with a specific order, nor should they expect tags within a given component block to be in a specific order. In addition, there is no sort order imposed on the data content of the message. For example, the Security List messages are not sorted by symbol or by any other tag. On a more general level, note that if a DDS recipient receives a batch file containing more than one message type (such as positions and trades), the batch file is not sorted by message type. Position messages and trade messages may be commingled throughout the file depending on how the particular file is built.

¹ The World Wide Web Consortium (W3C) is an international consortium where member organizations, a full-time staff, and the public work together to develop web standards.

FIXML and FIXML Extension Version Identification

FIXML versions are identified in the schema file names and with constant attribute values defined in the fixml-components-base schema file.

FIXML Schema File Versioning

FIXML schema employs the file naming convention developed for FpML. The major and minor version numbers of the FIX version represented by the schema are appended to all FIXML schema file names. This approach assists users in recognizing when counterparties have changed their version of the schema.

FIXML Message Versioning

The FIXML root element <FIXML> contains five attributes that define the version of the message. The FIXML root element is defined in the fixml-components-base schema file.

Attribute Description Format Example

Attribute	Description	Format	Example
v	FIX Version	N.N	4.4
r	FIX Version release date (used to designate errata releases between FIX versions)	YYYYMMDD	20030618
s	Schema Release (used to designate schema releases between errata releases)	YYYYMMDD	20040109
xv	FIXML Extensions Version	N.N	1
xr	FIXML Extensions Originator	String	FIA

```
<FIXML r="20030618" s="20040109" v="4.4" xr="FIA" xv="1"
xmlns="http://www.fixprotocol.org/FIXML-4-4">
... Message ...
</FIXML>
```

For On-Demand Positions, the following FIXML root element is used.

```
<FIXML r="20030618" s="20040109" v="4.4" xr="FIA" xv="1.1"
xmlns="http://www.fixprotocol.org/FIXML-4-4" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="http://www.fixprotocol.org/FIXML-4-4
https://www.theocc.com/getmedia/11f77dc2-98cf-4d31-898a-a95eb91abc9b/fixml-main-4-4-FIA-1-1.xsd">
```

Comparing FIXML for Batch Files and Real Time Transmissions

Real time FIXML messages transmitted via MQ treat each message as a separate event. Therefore, each message transmitted via MQ includes the previously referenced FIXML tag.

Batch files pulled via SFTP follow a different process. A batch file includes an additional tag to communicate to the XML parser that multiple messages are contained in the file. An example of the tag used in batch files follows:

```
<FIXML r="20030618" s="20040109" v="4.4" xr="FIA" xv="1"
xmlns="http://www.fixprotocol.org/FIXML-4-4">
  <Batch>
    ... Message ...
    ... Message ...
    ... Message ...
  </Batch>
</FIXML>
```

FIX Concepts

The FIX protocol includes several concepts that are repeated in many of the message types. This section provides specific detail on these concepts.

CFI Codes

The CFI Code field provides a standards-based source of security type values by using values defined in the ISO 10962 standard: Classification of Financial Instruments (CFI) code. The CFI code appears in every transmission that contains the Instrument block, which contains product, series, and contract information.

A subset of ISO 10962 values applicable to FIX usage appears below. The official standard and set of possible values are maintained in the ISO 10962 standard. Any discrepancies below should be considered typographical errors. To obtain the ISO 10962 standard, please contact the ISO 10962 secretariat or visit the ISO website at <https://www.iso.org/home.html>.

The ISO 10962 standard defines a six-character CFI code in which each character's position value carries a special significance (attribute) and set of values. Note that "X" represents an unspecified or unknown attribute, thus it is not always necessary to specify every attribute (character position value).

A detailed subset of possible values applicable to FIX usage appears below. The following tables contain CFI code mapping and default data values for options, futures, and underlyings.

CFI Codes Definitions for Options

Position 1 – Category	Position 2 – Group	Position 3 – Scheme	Position 4 – Underlying Asset	Position 5 – Delivery	Position 6 – Standardized/ Non-Standardized
O – Options	C – Call P – Put X – Unknown (N/A)	A – American E – European X – Unknown (N/A)	B – Basket C – Currencies D – Interest rate/notional debt securities F – Futures I – Indices M – Other O – Options S – Stocks, equities T – Commodities W – Swaps X – Unknown (N/A)	C – Cash P – Physical X – Unknown (N/A)	N – Non-standardized terms S – Standardized terms (maturity date, strike price, contract size) X – Unknown (N/A)

The following table lists CFI code examples for options.

CFI Code Example	Usage
OCXXXS	Standardized call option
OPXXXS	Standardized put option
OCXFXS	Standardized call option on a future
OPXFXS	Standardized put option on a future
OCEFCN	Non-standard call option on future with European style expiration and cash delivery
OPASPN	Non-standard put option on stock with American style expiration and physical delivery
OCEICN	Non-standard call option on an index with European style expiration and cash delivery

The Non-Standard designation uses the OCC definition of this term: Non-Standard terms of settlement or multiple deliverables.

CFI Code Definitions for Futures

Position 1 – Category	Position 2 – Group	Position 3 – Underlying Asset	Position 4 – Delivery	Position 5 – Standardized/ Non-Standardized	Position 6 – Not Applicable/ Undefined
F – Futures	F – Financial Futures C – Commodity Futures M – Others X – Unknown (N/A)	B – Basket C – Currencies D – Interest rate/notional debt sec F – Futures I – Indices (for financial futures) or industrial products (for commodities futures) M – Other O – Options S – Stocks, equities (for financial futures) or services (for commodities futures) W – Swaps X – Unknown (N/A)	P – Physical C – Cash X – Unknown (N/A)	S – Standardized terms (maturity date, strike price, contract size) N – Non-standardized terms X – Unknown (N/A)	X – N/A, undefined

The following table lists CFI code examples for futures.

CFI Code Example	Usage
FFICSX	Standardized future
FFICNX	Non-standard financial future on an index with cash delivery

The Non-Standard designation uses the OCC definition of this term: Non-Standard terms of settlement or multiple deliverables.

CFI Code Definitions for Underlying Block

Position 1 – Category	Position 2 – Group	Position 3 – Classification	Position 4 – Not applicable	Position 5 – Not applicable	Position 6 – Not applicable
D – Debt E – Equities F – Futures M – Misc., others	R – Referential Instrument X – Unknown, N/A	C – Currency I – Indices X – N/A	X – N/A	X – N/A	X – N/A

The following table lists CFI code examples for Underlying Block.

CFI Code Example	Usage
DXXXXX	Debt
EXXXXX	Equity shares
MRCXXX	Misc., referential instrument, currency
MRIXXX	Misc., referential instrument, index

Market Identifier Codes (MIC)

As of FIX 4.3, exchange codes used in FIX are those defined in the ISO 10383 standard: Market Identifier Code (MIC). A MIC value is used whenever exchange information is included in a message. The official standard and set of values are maintained by the ISO 10383 standard and any discrepancies below should be considered typographical errors. Always refer to the ISO 10383 standard for the correct set of values. As of the time of this publication the website link to view a current list of MIC values is: <https://www.iso20022.org/market-identifier-codes>

Note Refer to the current ISO 10383 standard for the complete list. The following list is a subset of the complete list and is designed primarily to support trade sources that interact with OCC.

Each of the following exchange names and their related exchange acronyms are mapped to a MIC.

Exchange/MIC Mapping

Exchange Name	Exchange Acronym	Market Identifier Code (MIC)
BOX Options Exchange, LLC	BOX	XBOX
Cboe BZX Options Exchange	BATS	BATO
Cboe C2 Options Exchange	C2	C2OX
Cboe EDGX Options Exchange	EDGX	EDGO
Cboe Futures Exchange	CFE	XCBF
Cboe Options Exchange	CBOE	XCBO
MEMX, LLC	MEMX	MXOP
MIAX Emerald, LLC	EMLD	EMLD
MIAX Options Exchange	MIAX	XMIO
MIAX PEARL, LLC	MPRL	MPRL
MIAX Sapphire, LLC	SPHR	SPHR
Nasdaq BX Options	NOBO	XBXO
Nasdaq GEMX	GEM	GMNI
Nasdaq ISE	ISE	XISX
Nasdaq MRX	MCRY	MCRY
Nasdaq Options Market	NSDQ	XNDQ
Nasdaq PHLX, LLC	PHLX	XPHO
NYSE American Options	AMEX	XASE
NYSE Arca Options	ARCA	XPSE
Small Exchange, Inc.	SML	SMFE

Product Multipliers

This section explains how product multiplier tags are used in DDS messages.

Product Multiplier Tags

Strike Multiplier (tag name StrkMult)

A strike multiplier identifies where a decimal should be in a strike price.

Strike Value (tag name StrkValu):

A strike value defines one unit of strike value. For example, if a strike value equals 100, then a strike of \$17 equals \$1,700. This field is used for calculating extended strike values.

The number of units represented by the strike value is composed of:

- Number of shares for equity options
- Dollar amount for index options

The typical strike value for equity and index options is 100.

The strike value in DDS is used for products with multiple delivery components.

Trade Value (tag name Mult):

A trade value defines one unit of trade premium value. For example, if a trade value equals 100, then a premium of \$1.50 equals \$150. This field is used for calculating premium money extensions.

The number of units represented by the trade value is composed of:

- Number of shares for equity options
- A dollar amount for index options

The typical trade value for equity and index options is 100. In most cases, the trade premium has to be extended to the same base as the strike price. Therefore, the trade value is usually the same as the strike value.

Product Multipliers in Extended Value Calculations

Extended value calculations are explained below.

Extended Strike Calculation

The DDS method of calculating an extended strike is:

extended strike price = strike price * strike multiplier * strike value

Extended Trade Premium Calculation

The DDS method of calculating an extended premium is:

extended trade premium per contract = trade premium * trade value * number of contracts

Product Examples

Example 1: Standard Equity Option

The example conditions are:

- Strike price = \$75
- Trade premium = \$3.25
- Number of contracts = 25
- Strike multiplier (StrkMult) = 1.0
- Strike value (StrkValu) = 100
- Trade value (Mult) = 100

The extended strike price calculation in DDS is:

$$\text{strike price} * \text{strike multiplier} * \text{strike value} = \$75 * 1.0 * 100 = \$7,500$$

The extended trade premium calculation in DDS is:

$$\text{trade premium} * \text{trade value} * \text{no. of contracts} = \$3.25 * 100 * 25 = \$8,125$$

Example 2 – Equity Option After a 3-for-2 Stock Split

The example conditions are:

- Strike Price = \$35
- Trade Premium = \$2.75
- No. of contracts = 25
- Strike Multiplier (StrkMult) = 1.0
- Strike Value (StrkValu) = 150
- Trade Value (Mult) = 150

The extended strike price calculation in DDS is:

$$\text{strike price} * \text{strike multiplier} * \text{strike value} = \$35 * 1.0 * 150 = \$5,250$$

The extended trade premium calculation in DDS is:

$$\text{trade premium} * \text{trade value} * \text{no. of contracts} = \$2.75 * 150 * 25 = \$10,312.50$$

Party Component Block

The Party component block is used in all applicable messages to represent OCC account information. Below is a sample of how this block is used and the corresponding translations:

<Pty ID="OCC" R="21"/>	→ Clearing group
<Pty ID="00352" R="4">	→ Clearing member number
<Sub ID="M" R="26"/>	→ Account type
</Pty>	
<Pty ID="XYZ" R="38"/>	→ Account ID

Occasionally, additional information is listed in the Party component block when applicable. For example, in the Trade Capture Report for a CMTA trade, the take up information is listed in the block. In this case, the block looks like the following example:

<Pty ID="OCC" R="21"/>	→ Clearing group
<Pty ID="00551" R="4"/>	→ Clearing member number
<Sub ID="M" R="26">	→ Account type
</Pty>	
<Pty ID="XYZ" R="38"/>	→ Account ID
<Pty ID="00792" R="14"/>	→ Take up clearing firm

Instrument Component Block

The Instrument component block is used in all applicable messages to describe OCC cleared products. Below are samples of this block and the corresponding translations.

Option Example

```

<Instrmt
  Sym="IBM"           → Product symbol
  CFI="OCASPS"       → CFI code.
  MMY="20220518"     → Series/contract date
  MatDt="2022-05-18" → Expiration date
  StrkPx="47.5"      → Strike price
  StrkCcy="USD"      → Strike currency
  StrkMult="1"       → Strike multiplier
  StrkValu="1"       → Strike value
  Mult="100"         → Contract multiplier
/>

```

Future Example

```

<Instrmt
  Sym="VX"           → Product symbol
  ID=" VX"           → Product symbol
  Src="8"            → FIX enumeration for exchange symbol
  CFI="FFICSX"      → CFI code
  MMY="20220518"    → Series/contract date
  MatDt="2022-05-18" → Expiration date
  Mult="100"        → Contract multiplier
/>

```

In some messages, such as the Security Definition Report and Security Update Report, additional fields are included in the Instrument block to further describe the option or futures product.

The StrkMult and Mult fields are provided in the Instrument component block because they are often used by OCC to calculate settlement values and moneyness values.

FIXML Data Types (as used by OCC)

FIX Data Type	FIX Definition	OCC Definition	Example
Integer	Sequence of digits without commas or decimals and optional sign character. Integer values may contain leading zeros.	Leading zeros are removed.	723
Float	Sequence of digits with optional decimal point and sign character. Float values may contain leading and trailing zeros.	Leading and trailing zeros are removed. The number of decimal points is limited to six.	245.3967
Qty	Float field capable of storing either a whole number of "shares" or a decimal value containing decimal places for non-share quantity asset classes.	Whole numbers only	25
Price	Float field representing a price. The number of decimal places can vary, and prices may be negative values.		3.12
Amt	Float field typically representing a Price times a Qty.		392785.23
Percentage	Float field typically representing a percentage. The number of decimal places can vary.		0.95
Char	Single character value that can include any alphanumeric character or punctuation except the delimiter. All character fields are case sensitive.		Y
String	Alphanumeric free format strings that can include any character or punctuation except the space delimiter. All character fields are case sensitive.		GUI
MultipleValue String	Alpha-numeric free format strings that can include any character or punctuation. Can contain one or more space-delimited values. All character fields are case sensitive.		Q W X
Currency	String field representing a currency type using ISO 4217 Currency code (three character) values.		USD
Exchange	String field representing a market or exchange using ISO 10383 Market Identifier Code (MIC).	Four-character MIC is used.	XASE
Month-Year	String field representing a month of a year. An optional day of the month can be appended or an optional week code. Valid formats are: YYYYMM, YYYYMMDD, and YYYYMMWW.	Only valid format is YYYYMMDD.	20220518
UTCTimestamp	Time/date combination represented in UTC. The format is YYYY-MM-DDThh:mm:ss-hh:mm	Only valid format is YYYY-MM-DDThh:mm:ss-hh:mm.	2022-05-17T07:48:13

FIX Data Type	FIX Definition	OCC Definition	Example
UTCTimeOnly	Time-only represented in UTC The format is <i>HH:MM:SS-hh:mm</i> .	Only valid format is <i>HH:MM:SS-hh:mm</i> .	03:45:23
UTCDateOnly	Date represented in UTC The format is <i>YYYY-MM-DD</i>		2022-05-18
LocalMktDate	Date of local market (vs. UTC) in <i>YYYY-MM-DD</i> format. This is the “normal” date field used by the FIX protocol.		2022-05-18

UTC Timestamp

All FIX reports that include transaction times, creation times, update times, and so on, are reported in a time/date combination that includes UTC (Coordinated Universal Time, also known as GMT). The UTC Timestamp is represented by the format `YYYY-MM-DDThh:mm:ss-hh:mm`.

For example:

To indicate 3:45:23 A.M. on November 25, 2022 for Eastern Standard Time which is five (5) hours behind Coordinated Universal Time (UTC), the timestamp is:

`2022-11-25T07:45:23`

Empty Values

Any attributes which are omitted from a FIXML message should be considered empty or as having no value. The example FIXML message below illustrates this concept for an option instrument:

```
<Instrmt
  Sym="IBM"           → Product Symbol
  CFI="OCASPS"       → CFI code
  MMY="2022-05-18"   → Series/Contract Date
  MatDt="2022-05-18" → Expiration Date
  StrkPx="47.5"      → Strike Price (Decimal format)
  StrkCcy="USD"      → Strike Currency
  StrkMult="1.0"     → Strike Multiplier
  Mult="100"         → Contract Multiplier
/>
```

Futures instruments have no Strike attributes. Therefore, whenever possible the attributes are omitted and should be considered to have no value.

```
<Instrmt
  Sym="IBM1C"        → Product Symbol
  CFI="FFSPSX"      → CFI code
  MMY="2022-05-18"  → Series/Contract Date
  MatDt="2022-05-18" → Expiration Date
  Mult="100"        → Contract Multiplier
/>
```

FIX Reference Materials

Information on current FIX 4.4 specification can be found at:

- [FIX 4.4 Specification - FIX Trading Community](#)

OCC DDS guides include FIX tag numbers in the message layout tables for ease of reference to FIX documentation. This data is not included or referenced in the FIXML schema provided by OCC.

Revision History

Edition	Date	Edition Updates
1.0	11/28/2022	Initial edition.
1.1	6/1/2023	Added MEMX exchange content.
1.2	2/1/2024	Added MIAX Sapphire exchange.
1.3	2/16/2024	Removed reference to treatment of insignificant white space characters from the "What's New With the Ovation Platform?" table