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Overview

The purpose of MexDer Gateway is to provide order routing and the ability to retrieve market data from the Chicago Mercantile Exchange (CME) using FIX protocol. The Financial Information Exchange (FIX) Protocol is a message standard developed to facilitate the electronic exchange of information related to securities transactions. It is intended for use between trading partners wishing to automate communications. The MexDer Gateway API is based on the FIX 4.4 standard, adjusted to conform to MexDer specifications when possible. It uses the TCP/IP protocol for exchanging messages. All data in the messages consists of printable ASCII characters (except the field delimiter and the data type "Raw Data"). For further details refer to <http://www.fixprotocol.org>.

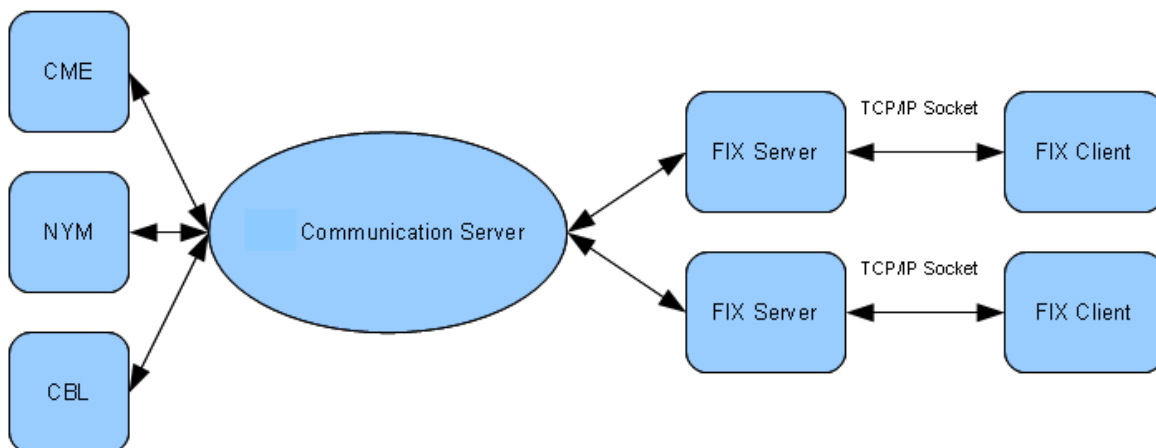
The purpose of this document is to supplement the MexDer exchange specification. Highlighted points will refer to changes that may be required for systems currently connected directly to MexFix to alter to connect to MexDer Gateway or to be able to route orders to and receive market data from external exchanges. Additional details of MexDer Gateway can be found in the complete MexDer Gateway API Specification.

Architecture

The MexDer Gateway Server is providing all the services that are offered by an exchange. It can be used to

- retrieve security data
- retrieve market data
- send orders to any configured exchange
- retrieve fill information.

Clients using the FIX protocol can connect to the MexDer Gateway Server. It is responsible for the session handling and provides all data available in the MexDer system. Different FIX clients can connect to one Communication Server. For each client an own FIX Server has to be started.



Generic Application Messages

Network Counterparty System Status Request (Msg Type = BC)

This message type is not supported in MexDer Gateway or CME.

Network Counterparty System Status Response (Msg Type = BD)

This message type is not supported in MexDer Gateway or CME.

Business Level Reject (Msg Type = j)

MexDer is using business level reject messages to reject application level messages.

Market Information

Trading Session Status Request (Msg Type = g)

This message type is not supported in MexDer Gateway or CME.

Trading Session Status (Msg Type = h)

This message type is not supported in MexDer Gateway or CME.

Security List Request (Msg Type = x)

Used by the client to request contract definition and status.

[Message] SecurityListRequest (Type: x)				
Name	Tag	Type	Required	Phrase
StandardHeader				
SecurityReqID	320	String	yes	
SecurityListRequestType	559	int	yes	
Instrument				
Symbol	55	String	yes	[N/A] subscribes to all securities for exchange specified in tag 207.
SecurityExchange	207	Exchange	no	Contracts for specific exchange can be specified with 207. See Exchange Codes . If not sent, contracts for all available exchanges will be requested.
SecurityID	48	String	no	
SecurityIDSource	22	String	no	
CFIcode	461	String	no	
MaturityMonthYear	200	MonthYear	no	
END Instrument				
				Subscription for security status is optional by setting this tag. Status will be delivered in 35=f messages. 0=Snapshot 1=Updates 2=Unsubscribe
SubscriptionRequestType	263	char	no	
NewSecuritySubscription	5682	char	no	
StandardTrailer				
CheckSum	10	String	yes	
END StandardTrailer				

Security List (Msg Type = y)

The Security List message is used to return a list of securities that matches the criteria specified in a Security List Request.

[Message] SecurityList (Type: y)				
Name	Tag	Type	Required	Phrase
StandardHeader				
SecurityReqID	320	String	yes	
SecurityResponseID	322	String	yes	
SecurityRequestResult	560	int	yes	
UnsolicitedIndicator	325	Boolean	no	
TotNoRelatedSym	393	int	no	
LastFragment	893	Boolean	no	
NoRelatedSym	146	int	no	
Instrument				
Symbol	55	String	yes	
SecurityExchange	207	Exchange	no	Referential contracts (461=MRXXXX) will not contain tag 207. See Exchange Codes .
SecurityID	48	String	no	Tags are not included in 35=y message when using source ID SYM3. Alternate Security IDs and their sources are listed in the repeating group SecurityAltID. SecurityIDSouce=8 and corresponding SecurityID is available in this data.
SecurityIDSource	22	String	no	
NoSecurityAltID	454	NumInGrp	no	
SecurityAltID				
SecurityAltID	455	String	no	
SecurityAltIDSource	456	String	no	
END SecurityAltID				
CFICode	461	String	no	
MaturityMonthYear	200	MonthYear	no	
IssueDate	225	UTCDate	no	Not supported.
StrikePrice	202	Price	no	
ContractMultiplier	231	float	no	
SecurityDesc	107	String	no	
TickSize	6138	Price	no	
END Instrument				
NoUnderlyings	711	int	no	
UnderlyingInstrument				
UnderlyingSymbol	311	String	yes	
END UnderlyingInstrument				
Currency	15	Currency	no	
NoLegs	555	NumInGrp	no	
Instrument Leg				
LegSymbol	600	String	no	
LegRatioQty	623	float	no	
LegSide	624	Char	no	
END Instrument Leg				
StandardTrailer				

Name	Tag	Type	Required	Phrase
Checksum	10	String	yes	
END StandardTrailer				

Security Status Request (Msg Type = e)

The Security Status Request message provides for the ability to request the status of a security.

[Message] SecurityStatusRequest (Type: e)

Name	Tag	Type	Required	Phrase
StandardHeader				
SecurityStatusReqID	324	String	yes	
Instrument				
Symbol	55	String	yes	
SecurityExchange	207	Exchange	no	Contracts for specific exchange can be specified with 207. See Exchange Codes . If not sent, contracts for all available exchanges will be requested.
SecurityID	48	String	no	
SecurityIDSource	22	String	no	
CFICode	461	String	no	
MaturityMonthYear	200	MonthYear	no	
END Instrument				
SubscriptionRequestType	263	char	yes	
StandardTrailer				
Checksum	10	String	yes	
END StandardTrailer				

Security Status (Msg Type = f)

The Security Status message provides for the ability to report changes in status to a security.

[Message] SecurityStatus (Type: f)

Name	Tag	Type	Required	Phrase
StandardHeader				
SecurityStatusReqID	324	String	no	
Instrument				
Symbol	55	String	yes	
SecurityExchange	207	Exchange	yes	Indicates the exchange that the security is listed at. See Exchange Codes .
END Instrument				
UnsolicitedIndicator	325	Boolean	no	
SecurityTradingStatus	326	int	no	See Security Trading States .
HighPx	332	Price	no	Not supported
LowPx	333	Price	no	Not supported
Text	58	String	no	
StandardTrailer				
Checksum	10	String	yes	
END StandardTrailer				

Market Data Request (Msg Type = V)

A Market Data Request is a general request for market data.

[Message] MarketDataRequest (Type: V)

Name	Tag	Type	Required	Phrase
StandardHeader				
MDReqID	262	String	yes	
SubscriptionRequestType	263	char	yes	
MarketDepth	264	int	yes	
MDUpdateType	265	int	no	
MDReqGrp				
NoMDEntryTypes	267	NumInGrp	yes	
MDEntryType	269	char	no	
END NoMDEntryTypes				
END MDReqGrp				
InstrmtMDReqGrp				
NoRelatedSym	146		yes	
Instrument				
Symbol	55	String	yes	
SecurityExchange	207	Exchange	no	Contracts for specific exchange can be specified with tag 207. See Exchange Codes . If not sent, contracts for all available exchanges will be requested.
SecurityID	48	String	no	
SecurityIDSource	22	String	no	
CFICode	461	String	no	
MaturityMonthYear	200	MonthYear	no	
END Instrument				
END NoRelatedSym				
END InstrmtMDReqGrp				
StandardTrailer				
Checksum	10	String	yes	
END StandardTrailer				

Market Data Snapshot (Msg Type = W)

The Market Data messages are used in response to the market data request messages and provide certain market information.

[Message] MarketDataSnapshotFullRefresh (Type: W)

Name	Tag	Type	Required	Phrase
StandardHeader				
MDReqID	262	String	no	Not supported.
Instrument				
Symbol	55	String	yes	
SecurityExchange	207	Exchange	yes	Indicates the exchange that the security is listed at. See Exchange Codes .
END Instrument				
MDFullGrp				
NoMDEntries	268		yes	

Name	Tag	Type	Required	Phrase
MDEntryType	269	char	yes	Type of market date entry Additional values: a-Upper Threshold Price b-Lower Threshold Price
MDEntryPx	270	Price	no	
MDEntrySize	271	Qty	no	
MDEntryTime	273	UTCTimeOnly	no	Not supported.
TickDirection	274	char	no	Not supported.
OpenCloseSettlFlag	286	MultipleValueString	no	Not supported.
MDEntryPositionNo	290	int	no	
PriceDelta	811	float	no	Not supported.
END NoMDEntries				
END MDFullGrp				
StandardTrailer				
Checksum	10	String	yes	
END StandardTrailer				

Indication of Interest (Msg Type = 6)

This message type is not supported in MexDer Gateway or CME.

Order Management

Message sent by client to request the entry of an order into the system. The most notable differences between MexDer Gateway and MexFIX for order management are that Party information is not required in MexDer Gateway and SecurityExchange is required. Party information will be ignored by FIX server and tags will not be returned.

New Order (Msg Type = D)

The new order message type is used by institutions wishing to electronically submit orders for execution. See [Order Types](#) for additional information.

[Message] NewOrderSingle (Type: D)				
Name	Tag	Type	Required	Phrase
StandardHeader				
ClOrdID	11	String	yes	
Parties				
NoPartyIDs	453		no	Party tags are not required for MexDer Gateway.
Gateway.				
PartyID	448	String	no	
PartyIDSource	447	char	no	
PartyRole	452	int	no	
END NoPartyIDs				
Account	1	String	no	
HandlInst	21	char	yes	
ExecInst	18	MultipleValueString	no	Not applicable on CME
Instrument				
Symbol	55	String	yes	
TickSize	6138	Price	no no	
SecurityIDSource	22	String	Required tag for MexDer Gateway. See	
SecurityExchange	207	Exchange	yes	Exchange Codes.
Side	54	char	yes	
TransactTime	60	UTCTimestamp	yes	
OrderQtyData				
OrderQty	38	Qty	yes	
OrdType	40	char	yes	
StopPx	99	Price	no	
TimeInForce	59	char	no	
Text	58	String	no	
StandardTrailer				
Checksum	10	String	yes	

Order Cancel Request (Msg Type = F)

The order cancel request message requests the cancelation of all of the remaining quantity of an existing order.

[Message] OrderCancelRequest (Type: F)				
Name	Tag	Type	Required	Phrase
StandardHeader				
OrigClOrdID	41	String	yes	
ClOrdID	11	String	yes	
Parties				
NoPartyIDs	453	String char int	no	Party tags are not required for MexDer Gateway.
PartyID	448		no	
PartyIDSource	447		no	
PartyRole	452		no	
END NoPartyIDs				
END Parties				
Instrument				
Symbol	55	String	yes	
SecurityIDSource	22	String	no	
SecurityExchange	207	Exchange	yes	Required tag for MexDer Gateway. See Exchange
END Instrument				
Side	54	char	yes	
TransactTime	60	UTCTimestamp	yes	
StandardTrailer				
Checksum	10	String	yes	
END StandardTrailer				

Order Modification Request (Msg Type = G)

The order cancel/replace request is used to change the parameters of an existing order. Please note: Order cancel/replace requests are normalized with the MexDer system. No special action is required when changing SMART or SENTRA contracts.

[Message] OrderCancelReplaceRequest (Type: G)				
Name	Tag	Type	Required	Phrase
StandardHeader				
Parties				
NoPartyIDs	453	String char int	no	Party tags are not required for MexDer Gateway.
PartyID	448		no	
PartyIDSource	447		no	
PartyRole	452		no	
END NoPartyIDs				
END Parties				
OrigClOrdID	41	String	yes	
ClOrdID	11	String	yes	
Account	1	String	yes	Required tag
HandlInst	21	char	yes	
Instrument				
Symbol	55	String	yes	

Name	Tag	Type	Required	Phrase
SecurityIDSource	22	String	no	
SecurityExchange	207	Exchange	yes	<i>Required tag for MexDer Gateway. See Exchange</i>
END Instrument				
Side	54	char	yes	
TransactTime	60	UTCTimestamp	yes	
OrderQtyData				
OrderQty	38	Qty	no	
END OrderQtyData				
OrdType	40	char	yes	
Price	44	Price	no	
StopPx	99	Price	no	
Text	58	String	no	
StandardTrailer				
Checksum	10	String	yes	
END StandardTrailer				

Execution Report (Msg Type = 8)

The execution report message is used to:

1. Confirm the receipt of an order
2. Confirm changes to an existing order (i.e. accept cancel and replace requests)
3. Relay order status information
4. Relay fill information on working orders
5. Relay fill information on tradeable or restricted tradeable quotes
6. Reject orders
7. Report post-trade fees calculations associated with a trade

[Message] ExecutionReport (Type: 8)

Name	Tag	Type	Required	Phrase
StandardHeader				
END Parties				
OrderID	37	String	yes	
SecondaryOrderID	198	String	no	
SecondaryExecID	527	String	no	
ClOrdID	11	String	no	
OrigClOrdID	41	String	no	
ExchangeTradeType	5681	String	no	<i>Not supported.</i>
OrdStatusReqID	790	String	no	
MassStatusReqID	584	String	no	<i>Not supported.</i>
TotNumReports	911	int	no	<i>Not supported.</i>
LastRptRequest	912	Boolean	no	<i>Not supported.</i>
Parties				
NoPartyIDs	453		no	<i>Party tags are not required for MexDer Gateway.</i>
PartyID	448	String	no	
PartyIDSource	447	char	no	
PartyRole	452	int	no	
END NoPartyIDs				
END Parties				
CrossID	548	String	no	

Name	Tag	Type	Required	Phrase
CrossType	549	int	no	
ExecID	17	String	yes	
ExecType	150	char	yes	
OrdStatus	39	char	yes	
WorkingIndicator	636	Boolean	no	<i>Not supported.</i>
OrdRejReason	103	int	no	
Account	1	String	yes	
Instrument				
Symbol	55	String	yes	
SecuritySource			no	
SecurityExchange	207	Exchange	yes	<i>Indicates the exchange that the security is listed at. See Exchange Codes.</i>
NoLegs	555	int	no	
Instrument Leg				<i>Present when execution is multi-leg report.</i>
LegSymbol	600	String	no	<i>Present when execution is multi-leg report.</i>
LegRatioQty	623	float	no	
LegSide	624	Char	no	
END Instrument Leg				
END Instrument				
Side	54	char	yes	
OrderQtyData				
OrderQty	38	Qty	yes	
END OrderQtyData				
OrdType	40	char	no	
Price	44	Price	no	
StopPx	99	Price	no	
TimeInForce	59	char	no	
ExecInst	18	MultipleValueString	no	
LastQty	32	Qty	no	
LastPx	31	Price	no	
LeavesQty	151	Qty	yes	
CumQty	14	Qty	yes	
AvgPx	6	Price	yes	
TransactTime	60	UTCTimestamp	no	
Text	58	String	no	
MultiLegReportingType	442	char	no	
StandardTrailer				
Checksum	10	String	yes	
END StandardTrailer				

Order Cancel Reject (Msg Type = 9)

The order cancel reject message is issued by the broker upon receipt of a cancel request or cancel/replace request message which cannot be honored.

[Message] OrderCancelReject (Type: 9)				
Name	Tag	Type	Required	Phrase
StandardHeader				
OrderID	37	String	yes	
Parties				
NoPartyIDs	453		no	Party tags are not required for MexDer Gateway.
PartyID	448	String	no	
PartyIDSource	447	char	no	
PartyRole	452	int	no	
END NoPartyIDs				
END Parties				
ClOrdID	11	String	yes	
OrigClOrdID	41	String	yes	
OrdStatus	39	char	yes	
TransactTime	60	UTCTimestamp	no	
CxlRejResponseTo	434	char	yes	
CxlRejReason	102	int	no	
Text	58	String	no	
StandardTrailer				
Checksum	10	String	yes	
END StandardTrailer				

Order Status Request (Msg Type = H)

The order status request message is used by the institution to generate an order status message back from the broker.

[Message] OrderStatusRequest (Type: H)				
Name	Tag	Type	Required	Phrase
StandardHeader				
END StandardHeader				
ClOrdID	11	String	yes	
Parties				
NoPartyIDs	453		no	Party tags are not required for MexDer Gateway.
PartyID	448	String	no	
PartyIDSource	447	char	no	
PartyRole	452	int	no	
END NoPartyIDs				
END Parties				
OrdStatusReqID	790	String	no	
Instrument				
Symbol	55	String	yes	
SecurityExchange	207	Exchange	yes	
END Instrument				
Side	54	char	yes	

Name	Tag	Type	Required	Phrase
StandardTrailer				
Checksum	10	String	yes	
END StandardTrailer				

Order Mass Cancel Request (Msg Type = q)

This message type is not supported in MexDer Gateway or CME.

Order Mass Cancel Report (Msg Type = r)

This message type is not supported in MexDer Gateway or CME.

Order Mass Status Request (Msg Type = AF)

This message type is not supported in MexDer Gateway or CME.

Information Message (Msg Type = UO)

Information messages are transient notifications disseminated by the components of the MexDer Gateway system.

[Message] InfoMessage (Type: UO)

Name	Tag	Type	Required	Phrase
StandardHeader END StandardHeader				
NewsExchange NewsRecipient	10021 10024	Exchange String(20)	no no	Exchange where the News message was received from.
NewsRecipientScope InfoTxt	10028 10031	String(20) String(200)	no yes	Can be set to specify the scope of the recipient when sending News. Valid Values: Can be set to specify the scope of the recipient when sending a News message. Valid values: 1 - Broker 2 - User 3 - Bulletin Board 4 - Surveillance (END Exch) 5 - Compliance (END Exch) 6 - Observer (END Exch)
InfoType	10032	int	no	Info type. Valid values: 1 - General 2 - Interface shut down 3 - Interface start up complete
InfoLevel	10033	int	no	The severity level of the message. Valid values: 1 - Information 2 - Warning 3 - Severe
StandardTrailer				
Checksum	10	String	yes	
END StandardTrailer				

Account

Account (1) is a required field in MexDer Gateway. In general an external exchange (CME, etc) will assign an end user with a specific account. Each account will have a specific format that should be entered in tag 1.

Exchange	Account Format
CME	H,12345,CME,H
NYM	H,12345,NYM,H

To simplify setup, MexDer Gateway will allow account substitution which will allow the end user to define a single account value that can be translated into one account per destination using the proper format. The configuration must be completed by an administrator. In this example, the user informs the administrator that he will use “ACCOUNT” in field one for multiple exchanges. The administrator completes the configuration with the following results.

Exchange	Defined Account	Account Format used
CME	ACCOUNT	H,12345,CME,H
NYM	ACCOUNT	H,12345,NYM,H

Client Order ID

Client Order ID (ClOrdID, 11) is a unique identifier for orders assigned by the client institution. The format of ClOrdID is not checked by MexDer Gateway. It may contain any value except the FIX delimiter. MexDer Gateway will not alter ClOrdID.

Execution ID

MexDer Gateway assigns a unique value to ExecID (17). When a trade occurs, the exchange value for ExecID is used in the execution report. MexDer Gateway will also append the ExecID generated by the exchange with Gateway order ID to maintain uniqueness because in the event that a user has a self trade, the exchange may deliver identical ExecIDs.

CME Market Data Reporting

CME Group requires that all use of market data be licensed and reported. This includes, but is not limited to, trading applications, analytic tools and automated systems. Any entity connecting to CME Group for market data and/or distributing market data is required to sign the [Market Data License Agreement \(MDLA\)](#). All market data for CME, CBOT, NYMEX, COMEX and DME share the same policy for market data use and must be licensed under the MDLA. Additional information can be found in the CME [Group Market Data Policy FAQ](#) or by contacting a Globex Account Manager.

Exchange Codes

MexDer Gateway server is capable of providing access to multiple exchange gateways. To successfully access these exchanges the proper SecurityExchange ID must be populated in tag 207 of relevant messages.

ID	Symbol	Exchange
359	CME	Chicago Mercantile Exchange
391	CBL	Chicago Board of Trade
639	EMD	Mexican Derivatives Exchange
691	NYM	New York Mercantile Exchange
772	COE	Commodity Mercantile Exchange

Order Types

MexDer Gateway supports multiple order types. The following table displays the necessary tags to send CME Globex supported order types.

	Tag 40	Tag 44	Tag 99	Tag 210	Tag 110	Tag 59
Market	1					
Limit	2	x				
Stop with Protection	3		x			
Stop Limit	4	x	x			
Market to Limit	K					
Hidden (Iceberg)	2	x		x		
Minimum Quantity	2	x			x	3

Security Trading States

Value	Trading State
0	No phase information available
2	Pre-Open
7	Not Available for Trading (end of session)
8	Ready to Trade
10	Trading Halt