



# **US Options Risk Control – SBE**

**V1.3**

**06/29/23**

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# 1 Overview

US Options Risk Control is a fixed length protocol used by members to manage their risk within the MEMX US Options exchange.

## 2 Architecture

A US Options Risk Control session is a sequenced messaging protocol that uses fixed width binary messages.

The US Options Risk Control wire format uses an [SBE-encoded](#) messages.

US Options Risk Control messages are transported using the MEMX-TCP protocol to provide reliable ordered transmission of messages between clients and servers. Connected clients should always use the streaming mode of MEMX-TCP.

Making MEMX-TCP requests for message replay will result in the client being disconnected, as per the MEMX-TCP specification. Heartbeat and heartbeat timeout intervals for a Risk Control connection may be configured via the Risk Control port support request process.

### 2.1 Active and Passive Controls

A US Options Risk Control session can be configured in an active or passive mode.

The passive checks allow clients to receive updates on preconfigured risk rules specified via the User portal. These settings are configured on the Trading Firm level and are all aggregated into Risk Group '0'. Clients can create sub groupings of risk settings by defining additional Risk Groups, defining the settings for a single Underlier, a single EFID, or an Underlier/EFID pair. Clients can also send risk breach messages to lock out a particular rule.

Active checks are also preconfigured via the User Portal for a specific Underlier and EFID pair. Defining these checks on an Underlier allows the system to atomically trigger should a threshold be breached. Active checks use a rolling volume of contracts executed versus a preconfigured threshold. Users will acknowledge aggregate trade volumes on an Underlier and EFID to keep their available execution volume under the preconfigured threshold. If Active checks are implemented for ContractVolume a Passive check cannot be configured for the ContractVolume.

\*NOTE - any threshold values changed via this API only apply to the current trading day. The User Portal must be used to apply values that persist across future trading days.

Several risk checks track a resource over time (i.e. Cross Port Volume Threshold). These risk checks are configured with a field named PeriodInMilliseconds. The minimum values allowed for the PeriodInMilliseconds is 100 milliseconds, the maximum is 24300000 millisecond (6.75 hours), depending on the risk setting. The tracking of the resource for the specified timeframe will be 'best effort'.

## 3 Encoding

The US Options Risk Control protocol uses the FIX Trading Community's [Simple Binary Encoding \(SBE\)](#) to specify message encoding. More information about SBE can be found at the [FIX SBE XML Primer](#).

Options Risk Control is always encoded in [Big Endian](#) byte order.

### 3.1 SBE Data Types

All encoding and decoding for SBE is centered around a set of basic primitive types.

For more information on primitive type encoding, see the [SBE specification](#).

Type	Length (bytes)	Description	Value Range	Null Value	Null Value (Hex)
CHAR	1	ASCII Character	32 to 126 (printable ASCII)	0	0x00
BOOLEAN	1	Boolean value (true or false)	0 to 1 0 = false 1 = true	255	0xFF
INT8	1	Signed Integer	-127 to 127	-128	0x80
INT16	2	Signed Integer	-32767 to 32767	-32768	0x8000
INT32	4	Signed Integer	$-2^{31} + 1$ to $2^{31} - 1$	$-2^{31}$	0x80000000
INT64	8	Signed Integer	$-2^{63} + 1$ to $2^{63} - 1$	$-2^{63}$	0x8000000000000000
UINT8	1	Unsigned Integer	0 to 254	255	0xFF
UINT16	2	Unsigned Integer	0 to 65534	65535	0xFFFF
UINT32	4	Unsigned Integer	0 to $2^{32}-2$	$2^{32} - 1$	0xFFFFFFFF
UINT64	8	Unsigned Integer	0 to $2^{63} - 1$	$2^{64} - 1$	0xFFFFFFFFFFFFFFFF

The US Options risk control specification does not use the SBE floating point data types.

#### 3.1.1 PriceType

Prices are encoded as a fixed-point scaled decimal, consisting of a unsigned long ([UINT64](#)) mantissa and a constant exponent of -8.

For example, a mantissa of 123456789 (0x75BCD15) with the constant exponent of -8 represents the decimal number 1.23456789, and would appear encoded on the wire as the hex value 00000000075BCD15.

#### 3.1.2 ClOrdID

All ClOrdIDs can be up to 20 characters. They can contain only ASCII printable characters.

### 3.1.3 UTCTimestampNanos

Fields with the UTCTimestampNanos type represent a timestamp in Coordinated Universal Time (UTC), which began on the UNIX epoch (January 1, 1970 at 00:00:00 UTC). UTCTimestampNanos has the time unit of nanoseconds and is encoded as follows:

Type Name	Length	Type	Description
Time	8	<a href="#">UINT64</a>	UTC timestamp since UNIX epoch with nanosecond precision.
Unit	N/A	<a href="#">UINT8</a>	Unit of time. UTCTimestampNanos are represented in nanoseconds. This field is constant (value=9) and as such will not be transferred on the wire.

## 3.2 SBE Header

SBE includes a header for each message. The SBE header is followed by the SBE body for the message.

The SBE message header contains the fields that allows the decoder to identify what codec should be used for a message.

1. **blockLength**: The length of the message. Note: this does not include the header length.
2. **templateID**: The identifier for the template type of the message that is to follow.
3. **schemaID**: The identifier for the schema the message belongs to. SchemaID=12 is used for US Options Risk Control.
4. **version**: The version of the schema allowing for extension. MEMX packs two pieces of information into the (UINT16) version field, a major version and a minor update version. So for example a version of 258 = 0x0102 indicates major version 1, minor update 2.

The US Options Risk Control SBE header appears on the wire as:

Field	Offset	Length	Type	Description
BlockLength	0	2	<a href="#">UINT16</a>	The number of bytes in the message body (does not include the header bytes). Note that Risk Control messages do not use repeating groups or variable-length fields.
TemplateID	2	1	<a href="#">UINT8</a>	Identifier of the message template (ie. the message type)
SchemaID	3	1	<a href="#">UINT8</a>	The identifier of a message schema. SchemaID=12 for US Options Risk Control.
Version	4	2	<a href="#">UINT16</a>	The version number of the message schema that was used to encode a message. MEMX packs two pieces of information into the UNIT16 version field, a major version and a minor update version. So for example a version of 258 = 0x0102 indicates major version 1, minor update 2.



## 4 Message Field Types

All messages are composed of fields. Each field has a type. This section defines the non-primitive field types, their underlying type on the wire, acceptable values, and their descriptions.

### 4.1 RuleType

RuleType represents a particular risk rule being reported.

RuleType is a 1-byte [UINT8](#) value.

Value	Name	Description
1	ContractVolume	Cross Port Control: volume of contracts executed.
2	NotionalExecuted	Cross Port Control: notional value of executions.
3	TotalTradesExecuted	Cross Port Control: count of Trades.
4	PercentExecuted	Cross Port Control: number of contracts executed as a percentage of the contracts quoted.
5	NumberOfBreaches	Cross Port Control: number of times the limits above are breached.
6	AllowISOOrders	Single Order: allow ISO Orders.
7	AllowOrdersInCrossedMarket	Single Order: allow orders in crossed market.
8	MaxNotional	Single Order: max notional value of the order.
9	MaxContracts	Single Order: max number of contracts of the order.
10	GrossNotional	Cross Port Control: gross notional threshold
11	MarketOrderGrossNotional	Cross Port Control: market order gross notional threshold
12	NetNotional	Cross Port Control: net notional threshold
13	MarketOrderNetNotional	Cross Port Control: market order net notional threshold
14	DuplicateOrder	Cross Port Control: duplicate order threshold
15	OrderRate	Cross Port Control: order rate threshold
254	TriggeredBreach	Breach Trigger and Lockout.

### 4.2 RiskRejectReason

RiskRejectReason indicates the reason a risk message was rejected.

RiskRejectReason is a 2-byte [UINT16](#) value.

Value	Name	Description
0	Other	Other internal reason
1	MissingClOrdID	The request did not supply a ClOrdID.
2	InvalidClOrdID	The request supplied an invalid ClOrdID.
3	DuplicateClOrdID	The user entered a duplicate request identifier
4	MissingTimePeriod	The request did not supply a time period.
5	InvalidTimePeriod	The request supplied an invalid time period.
6	MissingRiskGroupID	The request did not supply a risk group ID.
7	InvalidRiskGroupID	The request supplied an invalid risk group ID.
8	MissingUnderlier	The request did not supply an Underlier.
9	InvalidUnderlier	The request supplied an invalid Underlier.
10	MissingEFID	The request did not supply an EFID.
11	InvalidEFID	The request supplied an invalid EFID.
12	MissingThreshold	The request did not supply the threshold value.
13	InvalidThreshold	The request supplied an invalid threshold value.

Value	Name	Description
14	MissingQuantity	The request did not supply a quantity.
15	InvalidQuantity	The request supplied an invalid quantity.
16	MissingBreachID	The request did not supply a breachID.
17	InvalidBreachID	The request supplied an invalid breachID.
18	MissingVolume	The request did not supply a volume.
19	InvalidVolume	The request supplied an invalid volume.
20	MissingPeriodInMilliseconds	The request did not supply a period in milliseconds.
21	InvalidPeriodInMilliseconds	The request supplied an invalid period in milliseconds.
22	MissingPriceInDollars	The request did not supply a price in dollars.
23	InvalidPriceInDollars	The request supplied an invalid price in dollars.
24	MissingTotalExecutions	The request did not supply a total executions.
25	InvalidTotalExecutions	The request supplied an invalid total executions.
26	MissingPercent	The request did not supply a percent.
27	InvalidPercent	The request supplied an invalid percent.
28	MissingCount	The request did not supply a count.
29	InvalidCount	The request supplied an invalid count.
30	MissingAllowISOOrders	The request did not supply the allow ISO orders flag.
31	InvalidAllowISOOrders	The request supplied an invalid ISO orders flag.
32	MissingAllowOrders	The request did not supply the allow orders flag.
33	InvalidAllowOrders	The request supplied an invalid allow orders flag.
34	MissingMaxNotionalInDollars	The request did not supply the max notional in dollars.
35	InvalidMaxNotionalInDollars	The request supplied an invalid max notional in dollars.
36	MissingMaxContracts	The request did not supply the max contracts.
37	InvalidMaxContracts	The request supplied an invalid max contracts.
38	OverConfirm	Requested Quantity exceeds UnAckedQuantity.
39	InvalidRiskCombination	Not an allowed combination or risk attributes.
40	UnknownRiskRule	The risk rule for an update is unknown.
41	MissingMaxDupOrders	The request did not supply the maximum amount of duplicate orders allowed
42	InvalidMaxDupOrders	The request supplied an invalid maximum duplicate order count
43	MissingMaxOrderMsgs	The request did not supply a maximum order rate message threshold
44	InvalidMaxOrderMsgs	The request supplied an invalid maximum order rate message threshold
45	BreachInProgress	Request was rejected because a prior Breach with the same semantics is in progress.
100	ExchangeClosed	The request was rejected because the exchange is closed.

### 4.3 SideType

Defines the side of an order.

SideType is a [CHAR](#) value.

Value	Name
'1'	Buy
'2'	Sell

## 5 Messages

### 5.1 Client To Server

#### 5.1.1 Risk Settings Query

The Risk Settings Query message allows clients to request a list of their current risk settings. The response to the Risk Threshold Query message is a set of 0 or more of the following messages, followed by a Risk Settings Query Done message.

- Active Risk Threshold State
- Cross Port Volume Threshold State
- Cross Port Executed Notional Threshold State
- Cross Port Total Executions Threshold State
- Cross Port Percentage Of Outstanding Contracts Threshold State
- Cross Port Breach Count Threshold State
- Cross Port Gross Notional Threshold State
- Cross Port Market Order Gross Notional Threshold State
- Cross Port Net Notional Threshold State
- Cross Port Market Order Net Notional Threshold State
- Cross Port Duplicate Order Threshold State
- Cross Port Order Rate Threshold State
- Single Order Allow ISO Orders State
- Single Order Allow Orders In Crossed Market State
- Single Order Max Notional Threshold State
- Single Order Max Contracts Threshold State

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 1
CIOrdID	6	20	<a href="#">CHAR</a>	Y	Unique identifier of the confirm as assigned by the client.

#### 5.1.2 Active Risk Threshold Change Request

The Active Risk Threshold Change Request allows clients to specify the quantity of unacknowledged contracts per Underlier and EFID available for execution before a Risk Breach Event is triggered.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 2
CIOrdID	6	20	<a href="#">CHAR</a>	Y	Unique identifier of the confirm as assigned by the client.

Field	Offset	Length	Type	Req'd	Description
Underlier	26	6	<a href="#">CHAR</a>	Y	The Underlier of the Symbol for the request.
EFID	32	4	<a href="#">CHAR</a>	Y	EFID for the request.
ThresholdQuantity	36	4	<a href="#">UINT32</a>	Y	Maximum allowable UnAckedQuantity (e.g. contracts) on the specified Underlier and EFID before an Active Risk Breach Event is triggered.

### 5.1.3 Active Risk Acknowledgement Request

The Active Risk Acknowledgement Request allows clients to acknowledge a quantity of contracts traded that are reported via Active Risk Quantity Update Notification messages. Acknowledging quantity on an Underlier releases that quantity for further trades.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 3
CIOrdID	6	20	<a href="#">CHAR</a>	Y	Unique identifier of the acknowledgement as assigned by the client.
Underlier	26	6	<a href="#">CHAR</a>	Y	The Underlier of the Symbol for the request.
EFID	32	4	<a href="#">CHAR</a>	Y	EFID for the request.
Quantity	36	4	<a href="#">UINT32</a>	Y	Quantity (e.g. contracts) to acknowledge and release for further trading.

### 5.1.4 Cross Port Volume Threshold Change Request

The Cross Port Volume Threshold Change Request allows clients to request an update to their cross port volume of contracts executed threshold.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 4
CIOrdID	6	20	<a href="#">CHAR</a>	Y	Unique identifier of the confirm as assigned by the client.
Underlier	26	6	<a href="#">CHAR</a>	Y*	The Underlier of the Symbol for the request.
EFID	32	4	<a href="#">CHAR</a>	Y*	EFID for the request.
RiskGroupID	36	2	<a href="#">UINT16</a>	Y*	Unique identifier of a custom risk control set to set the volume threshold for.
Volume	38	8	<a href="#">UINT64</a>	Y	New volume of contracts executed threshold.
PeriodInMilliseconds	46	4	<a href="#">UINT32</a>	Y	The time period (in milliseconds) for the risk control.

\*If RiskGroupID is populated Underlier and EFID must be empty. EFID or Underlier may be populated alone or in combination.

### 5.1.5 Cross Port Executed Notional Threshold Change Request

The Cross Port Executed Notional Threshold Change Request allows clients to request an update to their cross port notional value of executions threshold.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 5
ClOrdID	6	20	<a href="#">CHAR</a>	Y	Unique identifier of the confirm as assigned by the client.
Underlier	26	6	<a href="#">CHAR</a>	Y*	The Underlier of the Symbol for the request.
EFID	32	4	<a href="#">CHAR</a>	Y*	EFID for the request.
RiskGroupID	36	2	<a href="#">UINT16</a>	Y*	Unique identifier of a custom risk control set to set the price and time period thresholds for.
PriceInDollars	38	4	<a href="#">UINT32</a>	Y	New notional value of executions threshold, in dollars.
PeriodInMilliseconds	42	4	<a href="#">UINT32</a>	Y	The time period (in milliseconds) for the risk control.

\*If RiskGroupID is populated Underlier and EFID must be empty. EFID or Underlier may be populated alone or in combination.

### 5.1.6 Cross Port Total Executions Threshold Change Request

The Cross Port Total Executions Threshold Change Request allows clients to request an update to their cross port total executions threshold.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 6
ClOrdID	6	20	<a href="#">CHAR</a>	Y	Unique identifier of the confirm as assigned by the client.
Underlier	26	6	<a href="#">CHAR</a>	Y*	The Underlier of the Symbol for the request.
EFID	32	4	<a href="#">CHAR</a>	Y*	EFID for the request.
RiskGroupID	36	2	<a href="#">UINT16</a>	Y*	Unique identifier of a custom risk control set to set the volume threshold for.
TotalExecutions	38	4	<a href="#">UINT32</a>	Y	New total number of executions threshold.
PeriodInMilliseconds	42	4	<a href="#">UINT32</a>	Y	The time period (in milliseconds) for the risk control.

\*If RiskGroupID is populated Underlier and EFID must be empty. EFID or Underlier may be populated alone or in combination.

### 5.1.7 Cross Port Percentage Of Outstanding Contracts Threshold Change Request

The Cross Port Percentage Of Outstanding Contracts Threshold Change Request allows clients to request an update to their cross port percent of outstanding number of contracts executed as a percentage of the number of contracts outstanding. Note this threshold is on a per Underlier basis.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 7
ClOrdID	6	20	<a href="#">CHAR</a>	Y	Unique identifier of the confirm as assigned by the client.
Underlier	26	6	<a href="#">CHAR</a>	Y*	The Underlier of the Symbol for the request.

Field	Offset	Length	Type	Req'd	Description
EFID	32	4	<a href="#">CHAR</a>	Y*	EFID to which the rule applies.
Percent	36	4	<a href="#">INT32</a>	Y	Percent of number of contracts executed as a percentage of the number of contracts outstanding.
PeriodInMilliseconds	40	4	<a href="#">UINT32</a>	Y	The time period (in milliseconds) for the risk control.

\*EFID or Underlier may be populated alone or in combination.

### 5.1.8 Cross Port Breach Count Threshold Change Request

The Cross Port Breach Count Threshold Change Request allows clients to request an update to their cross port breach count threshold. This risk rule limits the number of times the client breaches the following thresholds:

- Cross Port Volume Threshold
- Cross Port Notional Threshold
- Cross Port Total Executions Threshold
- Cross Port Percentage Of Outstanding Contracts Threshold

If the total times the above risk rules are breached is greater than the breach count, the Cross Port Breach Count risk rule breaches.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 8
CIOrdID	6	20	<a href="#">CHAR</a>	Y	Unique identifier of the order as assigned by the client.
Underlier	26	6	<a href="#">CHAR</a>	Y*	The Underlier to which the rule applies.
EFID	32	4	<a href="#">CHAR</a>	Y*	EFID to which the rule applies.
RiskGroupID	36	2	<a href="#">UINT16</a>	Y*	Unique identifier of a custom risk control to set the count for.
Count	38	4	<a href="#">UINT32</a>	Y	New total number of breaches threshold.
PeriodInMilliseconds	42	4	<a href="#">UINT32</a>	Y	The time period (in milliseconds) for the risk control.

\*If RiskGroupID is populated Underlier and EFID must be empty. EFID or Underlier may be populated alone or in combination.

### 5.1.9 Manual Cross Port Breach Trigger Request

The Manual Cross Port Breach Trigger Request allows clients to request triggering a risk breach within the exchange. When a breach is triggered orders/quotes are canceled (cancel messages are sent out the clients memo ports if requested). Also new orders/quotes matching the breach criteria are blocked/rejected. A session unique BreachID is returned to the client in the Manual Cross Port Breach Trigger Pending message. The breach can be cleared by specifying the BreachID in the Cross Port Clear Breach Request.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 9
CIOrdID	6	20	<a href="#">CHAR</a>	Y	Unique identifier of the order as assigned by the client.
Underlier	26	6	<a href="#">CHAR</a>	Y*	The Underlier of the Symbol for the request.

Field	Offset	Length	Type	Req'd	Description
EFID	32	4	<a href="#">CHAR</a>	Y*	EFID to which the rule applies.
RiskGroupID	36	2	<a href="#">UINT16</a>	Y*	Unique identifier of a custom risk control to trigger the breach on.
SendCancels	38	1	<a href="#">BOOLEAN</a>	N	If set to true, the exchange will send an ExecutionReport_Canceled message for each order/quote canceled. If set to false the exchange will NOT send an ExecutionReport_Canceled resulting from this request. The default if this field is not supplied is true.

\*If RiskGroupID is populated Underlier and EFID must be empty. EFID or Underlier may be populated alone or in combination.

### 5.1.10 Cross Port Clear Breach Request

The Cross Port Clear Breach Request message allows clients to clear a breach that has occurred within the exchange.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 10
CIOrdID	6	20	<a href="#">CHAR</a>	Y	Unique identifier of the order as assigned by the client.
BreachID	26	8	<a href="#">UINT64</a>	Y	The breach identifier received from the exchange in a Manual Cross Port Breach Trigger Done message.

### 5.1.11 Single Order Allow ISO Orders Change Request

The Single Order Allow ISO Orders Change Request allows clients to request an update to their trading firm's allow ISO orders flag.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 11
CIOrdID	6	20	<a href="#">CHAR</a>	Y	Unique identifier of the confirm as assigned by the client.
Underlier	26	6	<a href="#">CHAR</a>	Y*	The Underlier of the Symbol for the request.
EFID	32	4	<a href="#">CHAR</a>	Y*	EFID for the request.
RiskGroupID	36	2	<a href="#">UINT16</a>	Y*	Unique identifier of a custom risk control to set the allow ISO orders flag for.
AllowISOOrders	38	1	<a href="#">BOOLEAN</a>	Y	If true, ISO orders are allowed. If false, ISO orders will be rejected.

\*If RiskGroupID is populated Underlier and EFID must be empty. EFID or Underlier may be populated alone or in combination.

### 5.1.12 Single Order Allow Orders In Crossed Market Change Request

The Single Order Allow Orders in Crossed Market Change Request allows clients to request an update to their trading firm's allow orders in a crossed market flag.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 12
ClOrdID	6	20	<a href="#">CHAR</a>	Y	Unique identifier of the confirm as assigned by the client.
Underlier	26	6	<a href="#">CHAR</a>	Y*	Underlier of the Symbol for the request.
EFID	32	4	<a href="#">CHAR</a>	Y*	EFID for the request.
RiskGroupID	36	2	<a href="#">UINT16</a>	Y*	Unique identifier of a custom risk control to set the allow orders flag for.
AllowOrders	38	8	<a href="#">BOOLEAN</a>	Y	If true, orders are allowed in a crossed market. If false, orders in a crossed market will be rejected.

\*If RiskGroupID is populated Underlier and EFID must be empty. EFID or Underlier may be populated alone or in combination.

### 5.1.13 Single Order Max Notional Change Request

The Single Order Max Notional Change Request allows clients to request an update to their trading firm's max notional value per order threshold.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 13
ClOrdID	6	20	<a href="#">CHAR</a>	Y	Unique identifier of the confirm as assigned by the client.
Underlier	26	6	<a href="#">CHAR</a>	Y*	The Underlier of the Symbol for the request.
EFID	32	4	<a href="#">CHAR</a>	Y*	EFID for the request.
RiskGroupID	36	2	<a href="#">UINT16</a>	Y*	Unique identifier of a custom risk control to set the max notional dollars for.
MaxNotionalInDollars	38	8	<a href="#">UINT32</a>	Y	The max notional value (in dollars) for an individual order.

\*If RiskGroupID is populated Underlier and EFID must be empty. EFID or Underlier may be populated alone or in combination.

### 5.1.14 Single Order Max Contracts Change Request

The Single Order Max Contracts Change Request allows clients to request an update to their trading firm's max contracts per order threshold.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 14
ClOrdID	6	20	<a href="#">CHAR</a>	Y	Unique identifier of the confirm as assigned by the client.
Underlier	26	6	<a href="#">CHAR</a>	Y*	The Underlier of the Symbol for the request.
EFID	32	4	<a href="#">CHAR</a>	Y*	EFID for the request.
RiskGroupID	36	2	<a href="#">UINT16</a>	Y*	Unique identifier of a custom risk control to set the max contracts for.
MaxContracts	38	4	<a href="#">UINT32</a>	Y	The max number of contracts allowed for an individual order.

\*If RiskGroupID is populated Underlier and EFID must be empty. EFID or Underlier may be populated alone or in combination.



### 5.1.15 Cross Port Gross Notional Threshold Change Request

The Cross Port Gross Notional Threshold Change Request allows clients to request an update to their cross port gross notional value threshold.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 18
CIOrdID	6	20	<a href="#">CHAR</a>	Y	Unique identifier of the confirm as assigned by the client.
Underlier	26	6	<a href="#">CHAR</a>	Y*	The Underlier of the Symbol for the request.
EFID	32	4	<a href="#">CHAR</a>	Y*	EFID for the request.
RiskGroupID	36	2	<a href="#">UINT16</a>	Y*	Unique identifier of a custom risk control set to set the price and time period thresholds for.
PriceInDollars	38	4	<a href="#">UINT32</a>	Y	New gross notional value, in dollars.

\*If RiskGroupID is populated Underlier and EFID must be empty. EFID or Underlier may be populated alone or in combination.

### 5.1.16 Cross Port Market Order Gross Notional Threshold Change Request

The Cross Port Market Order Gross Notional Threshold Change Request allows clients to request an update to their cross port market order gross notional value threshold. Upon this rule breach the system shall reject incoming market orders and cancel resting orders as configured.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 19
CIOrdID	6	20	<a href="#">CHAR</a>	Y	Unique identifier of the confirm as assigned by the client.
Underlier	26	6	<a href="#">CHAR</a>	Y*	The Underlier of the Symbol for the request.
EFID	32	4	<a href="#">CHAR</a>	Y*	EFID for the request.
RiskGroupID	36	2	<a href="#">UINT16</a>	Y*	Unique identifier of a custom risk control set to set the price and time period thresholds for.
PriceInDollars	38	4	<a href="#">UINT32</a>	Y	New market order gross notional value, in dollars.

\*If RiskGroupID is populated Underlier and EFID must be empty. EFID or Underlier may be populated alone or in combination.

### 5.1.17 Cross Port Net Notional Threshold Change Request

The Cross Port Net Notional Threshold Change Request allows clients to request an update to their cross port net notional value threshold.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 20

Field	Offset	Length	Type	Req'd	Description
CIOrdID	6	20	<a href="#">CHAR</a>	Y	Unique identifier of the confirm as assigned by the client.
Underlier	26	6	<a href="#">CHAR</a>	Y*	The Underlier of the Symbol for the request.
EFID	32	4	<a href="#">CHAR</a>	Y*	EFID for the request.
RiskGroupID	36	2	<a href="#">UINT16</a>	Y*	Unique identifier of a custom risk control set to set the price and time period thresholds for.
PriceInDollars	38	4	<a href="#">UINT32</a>	Y	New net notional value, in dollars.

\*If RiskGroupID is populated Underlier and EFID must be empty. EFID or Underlier may be populated alone or in combination.

### 5.1.18 Cross Port Market Order Net Notional Threshold Change Request

The Cross Port Market Order Net Notional Threshold Change Request allows clients to request an update to their cross port market order net notional value threshold. Upon this rule breach the system shall reject incoming market orders and cancel resting orders as configured.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 21
CIOrdID	6	20	<a href="#">CHAR</a>	Y	Unique identifier of the confirm as assigned by the client.
Underlier	26	6	<a href="#">CHAR</a>	Y*	The Underlier of the Symbol for the request.
EFID	32	4	<a href="#">CHAR</a>	Y*	EFID for the request.
RiskGroupID	36	2	<a href="#">UINT16</a>	Y*	Unique identifier of a custom risk control set to set the price and time period thresholds for.
PriceInDollars	38	4	<a href="#">UINT32</a>	Y	New market order net notional value, in dollars.

\*If RiskGroupID is populated Underlier and EFID must be empty. EFID or Underlier may be populated alone or in combination.

### 5.1.19 Cross Port Duplicate Order Threshold Change Request

The Cross Port Duplicate Order Threshold Change Request allows clients to request an update to their cross port maximum amount of duplicate orders allowed for the given time period. A duplicative order is one having the same EFID, side, price, size, and symbol. A participant can set the count and time window (1-15 seconds) used to track and trigger this control.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 22
CIOrdID	6	20	<a href="#">CHAR</a>	Y	Unique identifier of the confirm as assigned by the client.
Underlier	26	6	<a href="#">CHAR</a>	Y*	The Underlier of the Symbol for the request.
EFID	32	4	<a href="#">CHAR</a>	Y*	EFID for the request.

Field	Offset	Length	Type	Req'd	Description
RiskGroupID	36	2	<a href="#">UINT16</a>	Y*	Unique identifier of a custom risk control set to set the price and time period thresholds for.
MaxDupOrders	38	4	<a href="#">UINT32</a>	Y	Maximum duplicate order threshold
UseOrderPriceInDupCheck	42	1	<a href="#">BOOLEAN</a>	N	If true, Order Price will be included in the duplicate order check. Otherwise, order price will not be used. The default if this field is not supplied is true.
PeriodInMilliseconds	43	4	<a href="#">UINT32</a>	Y	The time period (in milliseconds) for the risk control.

\*If RiskGroupID is populated Underlier and EFID must be empty. EFID or Underlier may be populated alone or in combination.

### 5.1.20 Cross Port Order Rate Threshold Change Request

The Cross Port Order Rate Threshold Change Request allows clients to request an update to their cross port maximum order rate allowed for the given time period. A participant can set the maximum order rate and time window (1-15 seconds) used to track and trigger this control.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 23
ClOrdID	6	20	<a href="#">CHAR</a>	Y	Unique identifier of the confirm as assigned by the client.
Underlier	26	6	<a href="#">CHAR</a>	Y*	The Underlier of the Symbol for the request.
EFID	32	4	<a href="#">CHAR</a>	Y*	EFID for the request.
RiskGroupID	36	2	<a href="#">UINT16</a>	Y*	Unique identifier of a custom risk control set to set the price and time period thresholds for.
MaxOrderMsgs	38	4	<a href="#">UINT32</a>	Y	Maximum order rate threshold
PeriodInMilliseconds	42	4	<a href="#">UINT32</a>	Y	The time period (in milliseconds) for the risk control.

\*If RiskGroupID is populated Underlier and EFID must be empty. EFID or Underlier may be populated alone or in combination.

## 5.2 Server To Client

### 5.2.1 Risk Settings Query Done

The Risk Settings Query Done message is sent in response to the Risk Settings Query message. It is sent after all of the Threshold State messages have been sent. This message marks the completion of the query and the end of the set of Threshold State messages.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 48
ClOrdID	6	20	<a href="#">CHAR</a>	Y	Unique identifier of the confirm as assigned by the client.
NumberMsgsSent	26	4	<a href="#">UINT32</a>	Y	The number of messages sent to the client in response to this query. Does not include this Query Done message.

### 5.2.2 Risk Settings Query Rejected

The Risk Settings Query Rejected message is sent in response to an invalid Risk Settings Query message. It indicates the Risk Settings Query has been rejected.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 49
ClOrdID	6	20	<a href="#">CHAR</a>	Y	Unique identifier of the confirm as assigned by the client.
RejectReason	40	2	RiskRejectReason	Y	The reason the request was rejected.

### 5.2.3 Active Risk Threshold State

The Active Risk Threshold State returns the current state of the active risk threshold. This message is sent in response to the Active Risk Threshold Change Request message, and the Risk Settings Query message.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 30
ClOrdID	6	20	<a href="#">CHAR</a>	N	As stated in the request.
Underlier	26	6	<a href="#">CHAR</a>	Y	The Underlier of the symbol from the request.
EFID	32	4	<a href="#">CHAR</a>	Y	EFID to which the rule applies.
ThresholdQuantity	36	4	<a href="#">UINT32</a>	Y	Maximum allowable UnAckedQuantity (e.g. contracts) on the specified Underlier and EFID before an Active Risk Breach Event is triggered.

### 5.2.4 Active Risk Threshold Change Rejected

The Active Risk Threshold Change Rejected message informs the client of the reason their change request was rejected. When an Active Risk Threshold Change is rejected the threshold remains *unchanged* from the previous setting.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 31
ClOrdID	6	20	<a href="#">CHAR</a>	Y	As stated in the request.
Underlier	26	6	<a href="#">CHAR</a>	Y	As stated in the request.
EFID	32	4	<a href="#">CHAR</a>	Y	As stated in the request.
ThresholdQuantity	36	4	<a href="#">UINT32</a>	Y	As stated in the request.

Field	Offset	Length	Type	Req'd	Description
RejectReason	40	2	<a href="#">RiskRejectReason</a>	Y	The reason the change was rejected.

### 5.2.5 Active Risk Acknowledged

Active Risk Acknowledged message confirms the exchange has released the Quantity specified by the client for execution before a Risk Breach Event is triggered. If the exchange cannot acknowledge the quantity the client will receive an Active Risk Acknowledge Reject message.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 32
CIOrdID	6	20	<a href="#">CHAR</a>	Y	As stated in the request.
Underlier	26	6	<a href="#">CHAR</a>	Y	The Underlier of the Symbol sent on the request.
EFID	32	4	<a href="#">CHAR</a>	Y	EFID sent on the request.
Quantity	36	4	<a href="#">UINT32</a>	Y	Quantity (in contracts) which was released for further trading.
UnAckedQuantity	40	4	<a href="#">UINT32</a>	Y	Total current unacknowledged quantity for Underlier on specified EFID.

### 5.2.6 Active Risk Acknowledge Rejected

The Active Risk Acknowledge Rejected message informs the client of the reason their risk acknowledgement request was rejected.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 33
CIOrdID	6	20	<a href="#">CHAR</a>	Y	As stated in the request.
Underlier	26	6	<a href="#">CHAR</a>	Y	The Underlier of the Symbol sent on the request.
EFID	32	4	<a href="#">CHAR</a>	Y	EFID sent on the request.
ThresholdQuantity	36	4	<a href="#">UINT32</a>	Y	Maximum allowable UnAckedQuantity (e.g., contracts) on the specified Underlier and EFID before an Active Risk Breach Event is triggered.
RejectReason	40	2	<a href="#">RiskRejectReason</a>	Y	The reason the request was rejected.

### 5.2.7 Active Risk Quantity Update Notification

The Active Risk Quantity Update Notification is an unsolicited response message which is triggered as a result of a trade on the exchange against an order with active risk protection enabled. One such message will be received per execution against any applicable active risk protected order. This message contains details of the execution which has updated the `UnAckedQuantity`. In the event that both sides of the execution are tracked by this risk control port, you will receive two notifications, one for each side of the trade.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 34
SendingTime	6	8	<a href="#">UTC Timestamp Nanos</a>	Y	The time the ExecutionReport was sent. UTC timestamp since unix epoch with nanosecond precision.
TransactTime	14	8	<a href="#">UTC Timestamp Nanos</a>	Y	The time at which the transaction occurred. UTC timestamp since epoch with nanosecond precision.
OrderID	22	8	<a href="#">UINT64</a>	Y	The exchange order ID of the executed order.
TrdMatchID	30	8	<a href="#">UINT64</a>	Y	Unique identifier of the execution message as assigned by the exchange. Uniqueness is guaranteed within a single trading day.
EFID	38	4	<a href="#">CHAR</a>	Y	EFID associated with the order.
Underlier	42	6	<a href="#">CHAR</a>	Y	The Underlier of the Symbol of the trade.
OptionSecurityID	48	8	<a href="#">CHAR</a>	Y	The options security for the trade.
Side	56	1	<a href="#">SideType</a>	Y	The side of the trade.
LastPx	57	8	<a href="#">PriceType</a>	Y	Price of this (last) fill.
LastQty	65	4	<a href="#">UINT32</a>	Y	Quantity (in contracts) bought/sold on this (last) fill.
UnAckedQuantity	69	4	<a href="#">UINT32</a>	Y	Total unacknowledged quantity for Underlier on specified EFID.

### 5.2.8 Cross Port Volume Threshold State

The Cross Port Volume Threshold State returns the current state of the cross port volume of contracts executed threshold. This message is sent in response to the Cross Port Volume Threshold Change Request message, and the Risk Settings Query message.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 35
CIOrdID	6	20	<a href="#">CHAR</a>	N	As stated in the request.
Underlier	26	6	<a href="#">CHAR</a>	N	The Underlier to which the rule applies.
EFID	32	4	<a href="#">CHAR</a>	N	EFID to which the rule applies.
RiskGroupID	36	2	<a href="#">UINT16</a>	N	Unique identifier of a custom risk control to which the rule applies.
Volume	38	8	<a href="#">UINT64</a>	Y	New volume of contracts executed threshold.
PeriodInMilliseconds	46	4	<a href="#">UINT32</a>	Y	The time period (in milliseconds) for the risk control.

### 5.2.9 Cross Port Executed Notional Threshold State

The Cross Port Executed Notional Threshold State returns the current state of the cross port notional value of executions threshold. This message is sent in response to the Cross Port Notional Threshold Change Request message, and the Risk Settings Query message.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 36
CIOrdID	6	20	<a href="#">CHAR</a>	N	As stated in the request.
Underlier	26	6	<a href="#">CHAR</a>	N	The Underlier to which the rule applies.
EFID	32	4	<a href="#">CHAR</a>	N	EFID to which the rule applies.
RiskGroupID	36	2	<a href="#">UINT16</a>	N	Unique identifier of a custom risk control to which the rule applies.
PriceInDollars	38	4	<a href="#">UINT32</a>	Y	New notional value of executions threshold, in dollars.
PeriodInMilliseconds	42	4	<a href="#">UINT32</a>	Y	The time period (in milliseconds) for the risk control.

### 5.2.10 Cross Port Total Executions Threshold State

The Cross Port Total Executions Threshold State returns the current state of the cross port total executions threshold. This message is sent in response to the Cross Port Total Executions Threshold Change Request message, and the Risk Settings Query message.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 37
CIOrdID	6	20	<a href="#">CHAR</a>	N	As stated in the request.
Underlier	26	6	<a href="#">CHAR</a>	N	The Underlier to which the rule applies.
EFID	32	4	<a href="#">CHAR</a>	N	EFID to which the rule applies.
RiskGroupID	36	2	<a href="#">UINT16</a>	N	Unique identifier of a custom risk control to which the rule applies.
TotalExecutions	38	4	<a href="#">UINT32</a>	Y	New total number of executions threshold.
PeriodInMilliseconds	42	4	<a href="#">UINT32</a>	Y	The time period (in milliseconds) for the risk control.

### 5.2.11 Cross Port Percentage Of Outstanding Contracts Threshold State

The Cross Port Percentage Of Outstanding Contracts Threshold State returns the current state of the cross port percentage of outstanding contracts threshold. This message is sent in response to the Cross Port Percentage Of Outstanding Contracts Threshold Change Request message, and the Risk Settings Query message.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 38
CIOrdID	6	20	<a href="#">CHAR</a>	N	As stated in the request.
Underlier	26	6	<a href="#">CHAR</a>	N	The Underlier to which the rule applies.
EFID	32	4	<a href="#">CHAR</a>	N	EFID to which the rule applies.
Percent	36	4	<a href="#">UINT32</a>	Y	Percent of outstanding number of contracts executed as a percentage of the number of contracts outstanding.
PeriodInMilliseconds	40	4	<a href="#">UINT32</a>	Y	The time period (in milliseconds) for the risk control.

### 5.2.12 Cross Port Breach Count Threshold State

The Cross Port Breach Count Threshold State returns the current state of the cross port breach count threshold. This message is sent in response to the Cross Port Breach Count Threshold Change Request message, and the Risk Settings Query message.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 39
CIOrdID	6	20	<a href="#">CHAR</a>	N	As stated in the request.
Underlier	26	6	<a href="#">CHAR</a>	N	The Underlier to which the rule applies.
EFID	32	4	<a href="#">CHAR</a>	N	EFID to which the rule applies.
RiskGroupID	36	2	<a href="#">UINT16</a>	N	Unique identifier of a custom risk control to which the rule applies.
Count	38	4	<a href="#">UINT32</a>	Y	New total number of breaches threshold.
PeriodInMilliseconds	42	4	<a href="#">UINT32</a>	Y	The time period (in milliseconds) for the risk control.

### 5.2.13 Risk Threshold Update Rejected

The Risk Threshold Update Rejected message indicates the exchange has rejected a clients risk threshold update request. It provides the reason the request was rejected.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 42
CIOrdID	6	20	<a href="#">CHAR</a>	Y	As stated in the request.
RiskType	26	1	<a href="#">RuleType</a>	Y	The type of risk request that was rejected.
RejectReason	27	2	<a href="#">RiskRejectReason</a>	Y	The reason for rejecting the update request.

### 5.2.14 Manual Cross Port Breach Trigger Pending

The Manual Cross Port Breach Trigger Pending message is a response to the Manual Cross Port Breach Trigger Request indicating the request has been received by the exchange and is in the process of being handled.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 40
CIOrdID	6	20	<a href="#">CHAR</a>	Y	As stated in the request.
Underlier	26	6	<a href="#">CHAR</a>	N	The Underlier to which the breach applies.
EFID	32	4	<a href="#">CHAR</a>	N	EFID to which the breach applies.
RiskGroupID	36	2	<a href="#">UINT16</a>	N	Unique identifier of a custom risk control to use for the breach.
BreachID	38	8	<a href="#">UINT64</a>	Y	The session unique breach identifier.



### 5.2.15 Manual Cross Port Breach Trigger Done

The Manual Cross Port Breach Trigger Done message indicates the exchange has triggered a breach and the cancels have been sent. This message is sent to report the number of cancels that occurred as a result of the breach trigger.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 41
CIOrdID	6	20	<a href="#">CHAR</a>	Y	As stated in the request.
Underlier	26	6	<a href="#">CHAR</a>	N	As stated in the request.
EFID	32	4	<a href="#">CHAR</a>	N	As stated in the request.
RiskGroupID	36	2	<a href="#">UINT16</a>	N	As stated in the request.
BreachID	38	8	<a href="#">UINT64</a>	Y	The session unique breach identifier that can be used to clear the breach with a Cross Port Clear Breach Request.
TotalAffectedOrders	46	4	<a href="#">UINT32</a>	Y	The number of orders/quotes canceled by this breach trigger.

### 5.2.16 Manual Cross Port Breach Trigger Rejected

The Manual Cross Port Breach Trigger Rejected message is used by the exchange to indicate a Manual Cross Port Breach Trigger Request cannot be honored as sent.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 50
CIOrdID	6	20	<a href="#">CHAR</a>	Y	As stated in the request.
Underlier	26	6	<a href="#">CHAR</a>	N	As stated in the request..
EFID	32	4	<a href="#">CHAR</a>	N	As stated in the request.
RiskGroupID	36	2	<a href="#">UINT16</a>	N	As stated in the request.
RejectReason	38	2	<a href="#">RiskRejectReason</a>	Y	The reason the request was rejected.

### 5.2.17 Breach Cleared

The Breach Cleared message indicates the exchange has cleared a breach. New orders/quotes matching the breach criteria will no longer be blocked/rejected.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 52
CIOrdID	6	20	<a href="#">CHAR</a>	N	As stated in the request if the breach is cleared by a Cross Port Clear Breach Request.
BreachID	26	8	<a href="#">UINT64</a>	Y	As stated in the request.

### 5.2.18 Breach Clear Rejected

The Breach Clear Rejected message indicates the cross port breach clear request has been rejected.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 51

Field	Offset	Length	Type	Req'd	Description
CIOrdID	6	20	<a href="#">CHAR</a>	Y	As stated in the request.
BreachID	26	8	<a href="#">UINT64</a>	Y	As stated in the request.
RejectReason	34	2	<a href="#">RiskRejectReason</a>	Y	The reason the request was rejected.

### 5.2.19 Passive Risk Threshold Notification

As orders are placed/executed risk levels change. This message is sent from the Exchange to the Client to indicate how much of each risk group threshold has been consumed.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 43
Underlier	6	6	<a href="#">CHAR</a>	N	The Underlier to which the rule applies.
EFID	12	4	<a href="#">CHAR</a>	N	EFID to which the rule applies.
RiskGroupID	16	2	<a href="#">UINT16</a>	N	Unique identifier of a custom risk control to which the rule applies.
RuleType	18	1	<a href="#">RuleType</a>	Y	The rule type this report pertains to.
LatestPercentage	19	1	<a href="#">UINT8</a>	Y	The percent of the RiskSetting that has been consumed, 0% = no consumption, 50% = half of the client set threshold is consumed, 100% = the full amount of the RiskSetting has been consumed. When this reached 100% it is called a risk rule breach.
BreachID	20	8	<a href="#">UINT64</a>	N	The BreachID is supplied when the LatestPercentage reaches 100% of the threshold and a breach occurs. This BreachID can be used to clear the breach.
TransactTime	28	8	<a href="#">UTC Timestamp Nanos</a>	Y	The time at which the transaction occurred. UTC timestamp since epoch with nanosecond precision.

### 5.2.20 Single Order Allow ISO Orders State

The Single Order Allow ISO Orders State returns the current state of a ports allow ISO orders flag. This message is sent in response to the Single Order Allow ISO Orders Change Request and the Risk Settings Query message.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 44
CIOrdID	6	20	<a href="#">CHAR</a>	N	As stated in the request.
Underlier	26	6	<a href="#">CHAR</a>	N	The Underlier to which the rule applies. Can be combined with an EFID, not compatible with RiskGroupID.
EFID	32	4	<a href="#">CHAR</a>	N	EFID to which the rule applies. Can be combined with Underlier not with RiskGroupID.

Field	Offset	Length	Type	Req'd	Description
RiskGroupID	36	2	<a href="#">UINT16</a>	N	Unique identifier of a custom risk control to which the rule applies.
AllowISOOrders	38	1	<a href="#">BOOLEAN</a>	Y	If true ISO orders are allowed, if false ISO orders are not allowed.

### 5.2.21 Single Order Allow Orders In Crossed Market State

The Single Order Allow Orders In Crossed Market State returns the current state of a ports allow orders in a crossed market flag. This message is sent in response to the Single Order Allow Orders In Crossed Market Change Request and the Risk Settings Query message.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 45
CIOrdID	6	20	<a href="#">CHAR</a>	N	As stated in the request.
Underlier	26	6	<a href="#">CHAR</a>	N	The Underlier to which the rule applies. Can be combined with an EFID, not compatible with RiskGroupID.
EFID	32	4	<a href="#">CHAR</a>	N	EFID to which the rule applies. Can be combined with Underlier not with RiskGroupID.
RiskGroupID	36	2	<a href="#">UINT16</a>	N	Unique identifier of a custom risk control to which the rule applies.
AllowOrders	38	1	<a href="#">BOOLEAN</a>	Y	If true orders are allowed in a crossed market, if false orders are not allowed in a crossed market.

### 5.2.22 Single Order Max Notional Threshold State

The Single Order Max Notional Threshold State returns the current state of a ports max notional order threshold. This message is sent in response to the Single Order Max Notional Change Request and the Risk Settings Query message.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 46
CIOrdID	6	20	<a href="#">CHAR</a>	N	As stated in the request.
Underlier	26	6	<a href="#">CHAR</a>	N	The Underlier to which the rule applies. Can be combined with an EFID, not compatible with RiskGroupID.
EFID	32	4	<a href="#">CHAR</a>	N	EFID to which the rule applies. Can be combined with Underlier not with RiskGroupID.
RiskGroupID	36	2	<a href="#">UINT16</a>	N	Unique identifier of a custom risk control to which the rule applies.
MaxNotionalInDollars	38	8	<a href="#">UINT32</a>	Y	The max notional order threshold in dollars.

### 5.2.23 Single Order Max Contracts Threshold State

The Single Order Max Contracts Threshold State returns the current state of a ports max number of contracts per order threshold. This message is sent in response to the Single Order Max Contracts Change Request and the Risk Settings Query message.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 47
ClOrdID	6	20	<a href="#">CHAR</a>	N	As stated in the request.
Underlier	26	6	<a href="#">CHAR</a>	N	The Underlier to which the rule applies. Can be combined with an EFID, not compatible with RiskGroupID.
EFID	32	4	<a href="#">CHAR</a>	N	EFID to which the rule applies. Can be combined with Underlier not with RiskGroupID.
RiskGroupID	36	2	<a href="#">UINT16</a>	N	Unique identifier of a custom risk control to which the rule applies.
MaxContracts	38	4	<a href="#">UINT32</a>	Y	The max number of contracts per order threshold.

### 5.2.24 Cross Port Gross Notional Threshold State

The Cross Port Gross Notional Threshold State returns the current state of the cross port gross notional value threshold. This message is sent in response to the Cross Port Gross Notional Threshold Change Request message, and the Risk Settings Query message.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 60
ClOrdID	6	20	<a href="#">CHAR</a>	N	As stated in the request.
Underlier	26	6	<a href="#">CHAR</a>	N	The Underlier to which the rule applies.
EFID	32	4	<a href="#">CHAR</a>	N	EFID to which the rule applies.
RiskGroupID	36	2	<a href="#">UINT16</a>	N	Unique identifier of a custom risk control to which the rule applies.
PriceInDollars	38	4	<a href="#">UINT32</a>	Y	New gross notional value, in dollars.

### 5.2.25 Cross Port Market Order Gross Notional Threshold State

The Cross Port Market Order Gross Notional Threshold State returns the current state of the cross port market order gross notional value threshold. This message is sent in response to the Cross Port Market Order Gross Notional Threshold Change Request message, and the Risk Settings Query message.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 61
ClOrdID	6	20	<a href="#">CHAR</a>	N	As stated in the request.
Underlier	26	6	<a href="#">CHAR</a>	N	The Underlier to which the rule applies.
EFID	32	4	<a href="#">CHAR</a>	N	EFID to which the rule applies.
RiskGroupID	36	2	<a href="#">UINT16</a>	N	Unique identifier of a custom risk control to which the rule applies.
PriceInDollars	38	4	<a href="#">UINT32</a>	Y	New market order gross notional value, in dollars.

### 5.2.26 Cross Port Net Notional Threshold State

The Cross Port Net Notional Threshold State returns the current state of the cross port net notional value threshold. This message is sent in response to the Cross Port Net Notional Threshold Change Request message, and the Risk Settings Query message.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 62
CIOrdID	6	20	<a href="#">CHAR</a>	N	As stated in the request.
Underlier	26	6	<a href="#">CHAR</a>	N	The Underlier to which the rule applies.
EFID	32	4	<a href="#">CHAR</a>	N	EFID to which the rule applies.
RiskGroupID	36	2	<a href="#">UINT16</a>	N	Unique identifier of a custom risk control to which the rule applies.
PriceInDollars	38	4	<a href="#">UINT32</a>	Y	New net notional value, in dollars.

### 5.2.27 Cross Port Market Order Net Notional Threshold State

The Cross Port Market Order Net Notional Threshold State returns the current state of the cross port market order net notional value threshold. This message is sent in response to the Cross Port Net Notional Threshold Change Request message, and the Risk Settings Query message.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 63
CIOrdID	6	20	<a href="#">CHAR</a>	N	As stated in the request.
Underlier	26	6	<a href="#">CHAR</a>	N	The Underlier to which the rule applies.
EFID	32	4	<a href="#">CHAR</a>	N	EFID to which the rule applies.
RiskGroupID	36	2	<a href="#">UINT16</a>	N	Unique identifier of a custom risk control to which the rule applies.
PriceInDollars	38	4	<a href="#">UINT32</a>	Y	New market order net notional value, in dollars.

### 5.2.28 Cross Port Duplicate Order Threshold State

The Cross Port Duplicate Order Threshold State returns the current state of the cross port duplicate order threshold. This message is sent in response to the Cross Port Duplicate Order Threshold Change Request message, and the Risk Settings Query message. A duplicative order is one having the same EFID, side, price, size, and symbol. A participant can set the count and time window (1-15 seconds) used to track and trigger this control.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 64
CIOrdID	6	20	<a href="#">CHAR</a>	N	As stated in the request.
Underlier	26	6	<a href="#">CHAR</a>	N	The Underlier to which the rule applies.
EFID	32	4	<a href="#">CHAR</a>	N	EFID to which the rule applies.
RiskGroupID	36	2	<a href="#">UINT16</a>	N	Unique identifier of a custom risk control to which the rule applies.
MaxDupOrders	38	4	<a href="#">UINT32</a>	Y	Maximum duplicate order threshold

Field	Offset	Length	Type	Req'd	Description
UseOrderPriceInDupCheck	42	1	<a href="#">BOOLEAN</a>	N	If true, Order Price will be included in the duplicate order check. Otherwise, order price will not be used. The default if this field is not supplied is true.
PeriodInMilliseconds	43	4	<a href="#">UINT32</a>	Y	The time period (in milliseconds) for the risk control.

### 5.2.29 Cross Port Order Rate Threshold State

The Cross Port Order Rate Threshold State returns the current state of the cross port order rate threshold. This message is sent in response to the Cross Port Order Rate Threshold Change Request message, and the Risk Settings Query message. A participant can set the maximum order rate and time window (1-15 seconds) used to track and trigger this control.

Field	Offset	Length	Type	Req'd	Description
<a href="#">SBE Header</a>	0	6	<a href="#">SBE Header</a>	Y	SBE Header with templateID = 65
CIOrdID	6	20	<a href="#">CHAR</a>	N	As stated in the request.
Underlier	26	6	<a href="#">CHAR</a>	N	The Underlier to which the rule applies.
EFID	32	4	<a href="#">CHAR</a>	N	EFID to which the rule applies.
RiskGroupID	36	2	<a href="#">UINT16</a>	N	Unique identifier of a custom risk control to which the rule applies.
MaxOrderMsgs	38	4	<a href="#">UINT32</a>	Y	Maximum order rate threshold
PeriodInMilliseconds	42	4	<a href="#">UINT32</a>	Y	The time period (in milliseconds) for the risk control.