

NASDAQ Futures, Inc. (NFX) TradeGuard PTRM Reference Guide

Version 1.03 | 2016-12-12



CONFIDENTIALITY/DISCLAIMER

This Reference Guide is being forwarded to you strictly for informational purposes and solely for the purpose of developing or operating systems for your use that interact with systems of NASDAQ Futures, Inc. (NFXSM) and its affiliates (collectively, NFX). This specification is proprietary to NFX.

NFX reserves the right to withdraw, modify, or replace this Reference Guide at any time, without prior notice. No obligation is made by NFX regarding the level, scope or timing of NFX's implementation of the functions or features discussed in this specification. The Reference Guide is provided "AS IS," "WITH ALL FAULTS". NFX makes no warranties to this Reference Guide or its accuracy, and disclaims all warranties, whether express, implied, or statutory related to the Reference Guide or its accuracy. This document is not intended to represent an offer of any terms by NFX. While reasonable care has been taken to ensure that the details contained herein are true and not misleading at the time of publication, no liability whatsoever is assumed by NFX for any incompleteness or inaccuracies. By using this Reference Guide you agree that you will not, without prior written permission from NFX, copy or reproduce the information in this Reference Guide except for the purposes noted above. You further agree that you will not, without prior written permission from NFX, store the information contained in this Reference Guide in a retrieval system, or transmit it in any form or by any means, whether electronic, mechanical, or otherwise except for the purposes noted above. In addition you agree that you will not, without prior written permission from NFX, permit access to the information contained herein except to those with a need-to-know for the purposes noted above.

NFXSM is a servicemark of Nasdaq Futures, Inc.

© Copyright 2016, Nasdaq Futures, Inc. All rights reserved.

TABLE OF CONTENTS

1 EXECUTIVE SUMMARY	4
1.1 INTRODUCTION	4
1.2 TRADEGUARD'S KEY BENEFITS	5
2 TRADEGUARD OVERVIEW	6
3 TRADEGUARD DEFINITIONS AND CONFIGURATION.....	7
3.1 ACCOUNT	7
3.2 ACCOUNT SETUP	7
3.3 AUTHORIZED TRADER	7
3.4 FUTURES AND OPTION CONTRACTS.....	8
3.5 CLEARING FUTURES PARTICIPANT	8
3.6 PRE-TRADE LIMITS GROUP	9
4 TRADEGUARD RISK CHECKS.....	11
4.1 TRADING ACTIVITY RISK CHECKS.....	12
4.1.1 Daily Accumulated Volume/Quantity Checks.....	12
4.1.2 Reaching an Accumulated Volume or Quantity Limit.....	12
4.1.3 Limitations of Accumulated Volume or Quantity Limits	13
4.2 ORDER MANAGEMENT RISK CHECKS	13
4.2.1 Maximum Order Volume/Quantity Check	13
4.2.2 Maximum Trade Report Size	14
4.2.3 Mass Cancel of Open Orders.....	15
4.3 ORDER RATE RISK CHECK.....	16
4.4 TRADING RESTRICTIONS.....	17
4.4.1 Restricted Contracts.....	17
4.4.2 Blocking PTLGs	17
4.5 CONNECTIVITY ISSUES.....	17
4.5.1 Automatic Block at Drop Copy Disconnect Safeguard.....	17
4.6 RISK MANAGER SUPPORT TOOLS	18
4.6.1 Email Notifications.....	18
4.6.2 TradeGuard User Interface	18
4.6.3 Intra-day and Next Day Changes.....	19
5 APPENDIX A – EXAMPLES ON DAILY VOLUME CHECKS	20

1 EXECUTIVE SUMMARY

The Exchange provides Participants with the ability to facilitate volumetric Pre-Trade protection on the Trading System via TradeGuard as a complementary service. Pre-Trade risk management (PTRM) services encompass on-Exchange Orders and off-Exchange trades submitted via FIX. This PTRM Reference Guide (“Reference Guide”) provides an overview of the PTRM system’s functionality as well as detailed descriptions of each risk check, including the manner in which it is configured, maintained and monitored.

1.1 INTRODUCTION

TradeGuard is centered on the establishment of a Pre-Trade Limits Group (PTLG), which is comprised of a single account or a group of accounts connected to the same Trading User ID. Trading Participants can monitor customer exposures and adjust risk limits in real-time via the TradeGuard User Interface (UI).

The following categories of Trading Participants may trade on NFX:

- **Clearing Futures Participant**—an Exchange Participant that clears trades at The Options Clearing Corporation (OCC) and may elect to sponsor other Futures Participants, non-Futures Participants and/or Authorized Customers.
- **Futures Participant**—an Exchange Participant that clears trades through a Clearing Futures Participant.
- **Authorized Customer**—an entity that may access the Trading System upon approval by the Exchange.

TradeGuard is intended to provide backstop risk functionality, addressing the risks associated with:

- **Automated Trading Systems** (Automated Order Generators or AOG)
 - High frequency and algorithmic systems
 - “Runaway” AOG risk
- **Access** to the Trading System sponsored by a Clearing Futures Participant
 - Customers using their own direct connectivity
 - Customers indirectly access the Trading System using proprietary applications via API access to the NFX trading platform through another Futures Participant
- **Catastrophic Risk**
 - Provide protections against any type of adverse execution activity
 - Mitigate the infinity risk associated with operations

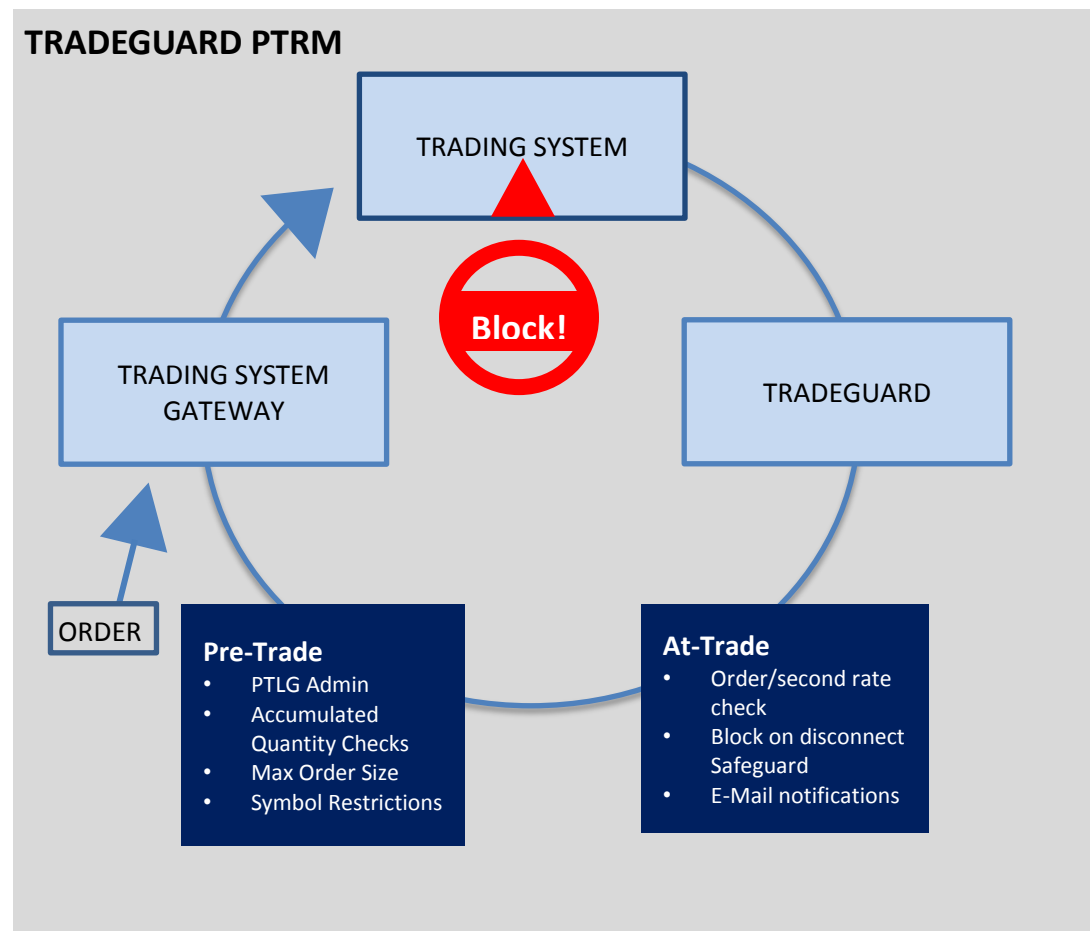
1.2 TRADEGUARD'S KEY BENEFITS

TradeGuard provides the following benefits to NFX Participants:

- **Accuracy** - TradeGuard's functionality includes real-time market information to ensure that the most accurate information is available for validating Orders prior to admittance to the matching engine.
- **Integrated** - TradeGuard provides an integrated Pre-Trade risk solution for electronically executed as well as off -exchange, trade reported transactions.
- **Flexibility** - TradeGuard is flexible and manages protection on one or multiple account levels.
- **Speed** – TradeGuard is fast, adding virtually no latency to Order roundtrip time.

2 TRADEGUARD OVERVIEW

Trading Participants (Participant) can set various Pre-Trade risk limits to control their house trading activity and the trading activity of their clients at the Participant account level, including prevention of potentially erroneous transactions and Pre-Trade checks of trade reported transactions.



TradeGuard consists of a number of Pre-Trade risk checks that can be combined in a flexible way, to validate Orders prior to allowing them into the Trading System. When Orders (including Quotes) are rejected, TradeGuard provides customers with clearly defined reasons for the rejection via a FIX message.

The TradeGuard User Interface provides Clearing Futures Participants with the ability to directly control and update all risk limits at the account level, including the ability to quickly mass cancel Orders (including Quotes) and block Order flow.

Notifications via e-mail are generated by TradeGuard to alert Clearing Futures Participants and their clients as threshold levels are breached. When Pre-Trade risk parameters have been met or exceeded, the Exchange's Trading System will reject all new Orders (including Quotes) for the Futures Participant, Authorized Trader or Authorized Customer until the Authorized Risk Officer adjusts the Pre-Trade risk parameters.

3 TRADEGUARD DEFINITIONS AND CONFIGURATION

This section defines the key terms and configurations that are vital to TradeGuard, its setup, and efficient operations.

3.1 ACCOUNT

An account is unique to a Participant and contains House or customer trades and positions. Each account will have a unique account number per Participant.

3.2 ACCOUNT SETUP

Accounts and their associated Authorized Traders will be configured via NFX Exchange staff and added to the TradeGuard User Interface for configuration into new or existing Pre-Trade Limits Groups (PTLG), both of which are described in more detail below and throughout this document.

3.3 AUTHORIZED TRADER

The Exchange requires that each trader physically submitting an Order to the Trading System through the FIX interface be identified by a unique Authorized Trader ID (using Party Role 11= Order Originating Trader as outlined in the Exchange FIX specification).

A Participant accessing the Trading System will be assigned one or many unique User IDs as basis for login to the Trading System. The User ID issued by the Exchange will also be used for populating Tag 50 (SenderSubID) of the Exchange FIX specification.

There can be multiple traders accessing the Trading System via one individual User ID as long as the necessary tags identifying the Authorized Trader IDs are included, to further identify the individual.

The Trading System supports verification of specific access to one or multiple accounts. Each User ID will be assigned access rights to a specific account or set of accounts registered in the Trading System.

3.4 FUTURES AND OPTION CONTRACTS

All risk checks, except the maximum Orders/sec rate, are configurable at the Instrument Class, Futures and Options on Futures Contracts level. Each NFX Futures Contract, or Option on Futures Contract, will have its own risk limits (Options on Futures Contracts will have individual limits for Calls and Puts). See examples below:

Contract Risk Limits	
Crude Oil Futures	<ul style="list-style-type: none">• NFX WTI Crude Oil Futures (CLQ)• NFX Brent Crude Futures (BFQ)
WTI Crude Oil Options on Futures	<ul style="list-style-type: none">• NFX WTI Crude Oil CALL Options (LOQ)• NFX WTI Crude Oil PUT Options (LOQ)
Refined Product Futures	<ul style="list-style-type: none">• NFX RBOB Gasoline Futures (RBQ)• NFX Heating Oil Futures (HOQ)
Natural Gas Futures	<ul style="list-style-type: none">• NFX Henry Hub Futures - 10,000 (HHQ)• NFX Henry Hub Futures - 2,500 (NNQ)

Trade at Settlement (TAS) Orders and transactions will be allocated to their related delivery Contracts and associated risk checks.

3.5 CLEARING FUTURES PARTICIPANT

Clearing Futures Participants (CFPs) will use TradeGuard to set Pre-Trade risk limits for their Customers.

The NFX Rulebook at Chapter IV, Section 7 requires that the Clearing Futures Participant’s Authorized Risk Officer to initially set and thereafter adjust, as appropriate, Pre-Trade risk parameters to a level that is appropriate for the trading activity of a Futures Participant, Authorized Trader or Authorized Customer for which the Clearing Futures Participant is the designated Clearing Futures Participant. The Pre-Trade risk controls must be appropriate for the level of trading engaged in by the Futures Participant, Authorized Trader or Authorized Customer.

An Authorized Risk Officer must initially set and thereafter adjust the following Pre-Trade risk parameters:

- Maximum Order/Quote Size
- Total Net Buy/Sell
- Restricted Contract

» Maximum Order/Quote Size – Maximum allowable Order or Quote size, based on volume, which may be sent to the Exchange for a given Group, Firm or Trader ID. Each bid and offer of a Quote is considered independent of one another.

» Total Net Buy/Sell – Traded Net plus open buy/sell per Instrument

» Restricted Contract – List of Contracts that cannot be traded.

Each Clearing Futures Participant will be required to provide two Authorized Risk Officer contacts to the Exchange's Membership Department in a form prescribed by the Exchange. The Exchange will not authorize a Trader ID if an Authorized Risk Officer has not set Pre-Trade risk parameters for a specific Futures Participant, Authorized Trader or Authorized Customer.

Futures Participants are encouraged to also employ all other necessary Pre-Trade risk controls in their order management systems to secure the financial integrity of the markets and the clearing system, to avoid systemic risk, and to protect Customer funds. Futures Participants and Authorized Traders are reminded that they remain ultimately responsible for the appropriate execution of Orders on the Exchange in accordance with Commission Regulations and Exchange Rules. The Exchange makes no warranty that the Pre-Trade risk parameters required by the Exchange alone will place a Futures Participant or Authorized Trader in compliance with CFTC Rule 1.73. Clearing Futures Participants should consult with their compliance, regulatory, and legal departments or advisers to ensure their policies and procedures are compliant with CFTC Rule 1.73

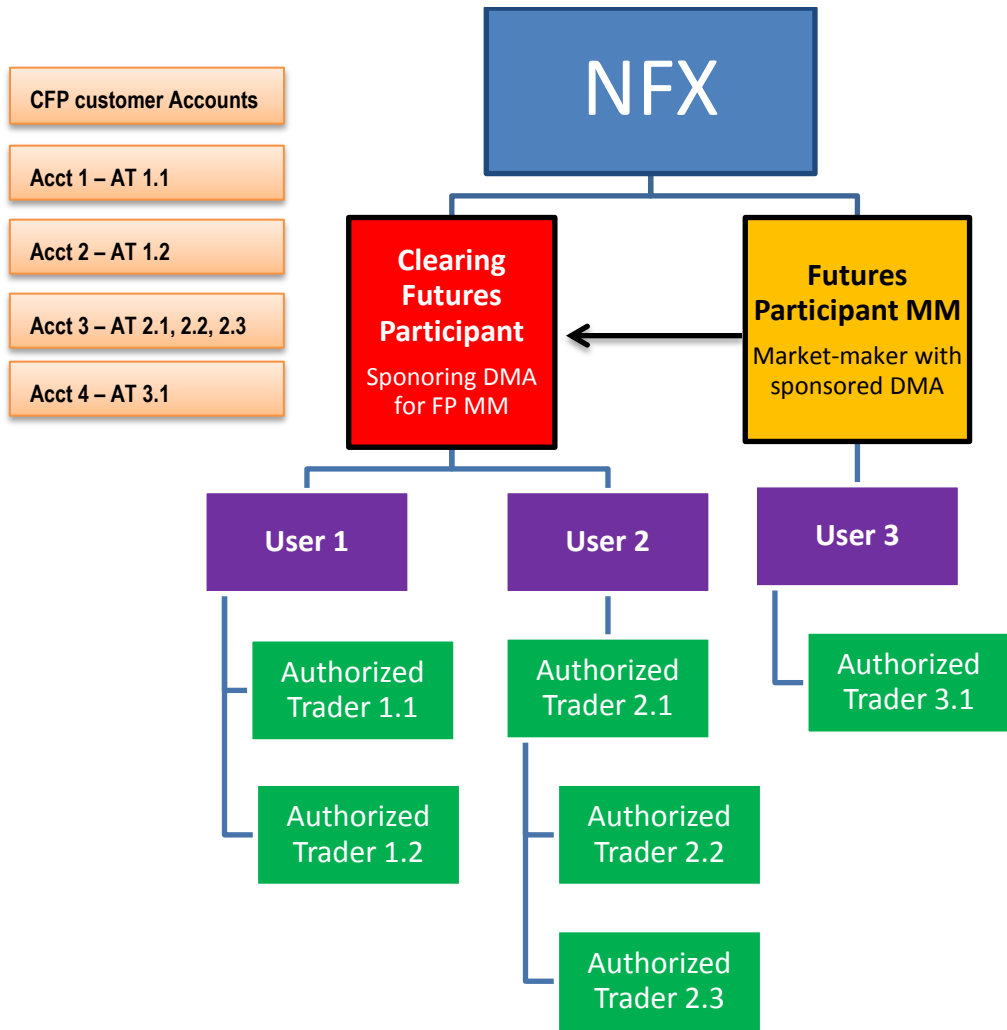
As noted above, Authorized Risk Officers will be required to adjust any Pre-Trade risk parameters. Such parameters may be set at the Futures Participant level, per Authorized Trader or per Authorized Customer. If the Pre-Trade risk parameters have been met or exceeded, the parameters must be adjusted prior to the commencement of trading.

3.6 PRE-TRADE LIMITS GROUP

As previously mentioned, PTLG is comprised of a single account or a group of accounts connected to the same User ID. A PTLG can therefore encompass the entire Order flow of a Participant or simply Orders submitted by a single account or a group of accounts. A PTLG may only be connected to one User ID and an account may only be associated with one PTLG. PTLGs may consist of either accounts or User IDs, but not both.

Active risk checks and their limits are configured per PTLG as described in the sections that follow. It is not possible to create and activate a PTLG intra-day nor is it possible to add or remove accounts from a PTLG intra-day (any intra-day change request will be held for overnight processing).

Account information is not included in a mass quote (bunched) message. Participants that will be making markets using the mass quote functionality will have their mass quote consumption accumulate in a default PTLG. Each Participant can have only one default PTLG, and additional, standard accounts can be included in a Default PTLG.



4 TRADEGUARD RISK CHECKS

TradeGuard provides Clearing Futures Participants with the following risk checks and support tools:

Trading Activity

- Daily Total Net Buy Checks (Traded Net + Open Buy Orders) per PTLG and Contract
- Daily Total Net Sell Checks (Traded Net + Open Sell Orders) per PTLG and Contract

Order Management

- Maximum Order Volume or Quantity per PTLG, Contract, and Combination Class
- Maximum Trade Report (Block and EFRP) Size per PTLG, Contract, and Combination Instrument Class
- Mass Cancellation of open Orders (including Quotes) per PTLG

Order Rates

- Order Rate Checks per PTLG

Trading Restrictions

- PTLG defined Trading Restrictions (per symbol)
- Manual blocking of Order flow per PTLG

Connectivity Issues

- Automatic blocking of Order flow at drop copy disconnect safeguard

Risk Manager Support Tools

- Notifications via e-mail for risk limit notification and warning levels.
- TradeGuard User Interface for administering risk limits, accounts and e-mail alerts, view risk checks consumption, mass cancel Orders (including Quotes) and block Order flow.

All configured risk checks are active during all Trading Sessions. NFX will operate 22x5 hours/days basis, which, for example, may be 7PM EPT to 5PM EPT Sunday through Friday. All risk checks will be reset for the Pre-Open Session prior to Open Session that starts at 7PM EPT Sunday, and each night through and including Thursday and will remain in force until the completion of the Open Session at 5PM EPT the following business day.

4.1 TRADING ACTIVITY RISK CHECKS

4.1.1 Daily Accumulated Volume/Quantity Checks

The daily accumulated checks are Pre-Trade risk checks that involve monitoring of a series of counters for each Contract. These risk checks will count transactions executed via the Order Book as well as off-Order Book (Block and EFRP) transactions via a single limit.

Different checks can be set on different PTLGs for the same User ID. Therefore, different limits can be assigned to different accounts within a User ID as long as the accounts are assigned to different PTLGs.

Limits are individually configured for each Contract and PTLG for the following risk limits:

Total Net Buy	Total Net Buy = Traded Bought – Traded Sold + Open Buy Orders per Contract
Total Net Sell	Total Net Sell = Traded Sold – Traded Bought + Open Sell Orders per Contract

The limit quantifier can be based on either the number of contracts (Quantity Calculation) or the underlying units of the specific Contract (Volume Calculation).

4.1.2 Reaching an Accumulated Volume or Quantity Limit

Since all accumulated volume or quantity Order (excluding Quotes) limits are Pre-Trade limits, they can never equal to or exceed the limits, except for Quotes. The Trading System may accept a portion of new Quotes if the entire Quote would cause the Pre-Trade risk parameters to be met or exceeded. A pre-trade accumulated volume or quantity Order (excluding Quotes) limit can be breached if a Clearing Futures Participant were to lower a limit below the existing consumption for a Contract. Thus when an Order (excluding Quotes) is entered that will equal or exceed an accumulated volume or quantity limit for a Contract, the Order would be ejected. The Trading System would reject all new Orders in their entirety, and accept the portion of new Quotes that permit the Pre-Trade risk parameters to not be met or exceeded. Likewise, if a Participant were to enter an Off-Exchange (i.e. Block or EFRP) transaction on behalf of a PTLG that will equal or exceed an accumulated volume or quantity limit for a Contract, the entire trade report would be rejected. The PTLG could re-enter a new Order or trade reported transaction in the same Contract up to the amount of any unused consumption, but any Order/trade equal to or larger (excluding Quotes) than the unused consumption will always lead to a rejection. Any non-cancelling, open Order modifications for the affected Contract that would equal or exceed the same accumulated volume or quantity limit would also be rejected. The PTLG can increase capacity (unused consumption) under a rejected limit by entering offsetting trades and/or canceling open Orders for the specific Contract. Regardless, Authorized Traders connected to the PTLG will still be allowed to enter Orders on Order Books traded on other Contract until their respective accumulated volume or quantity limits are reached.

For more information on how the accumulated volume or quantity checks work, please refer to Appendix A of this Reference Guide— Examples on Daily Accumulated Quantity Checks.

Please note that if no action is taken by the Clearing Futures Participant when a limit is reached, on the next trading day, the PTLG will be able to enter Orders (including Quotes) in the concerned Contract up to the full amount of the existing limit as the limits reset to zero for each trading day.

Please be advised that PTRM is NOT designed to automatically cancel open Orders (including Quotes) and thereby prevent future executions of Orders already residing on the Order Book once a limit is reached. PTRM will only prevent new Orders from being accepted; previous Orders in the matching engine before the limit was reached may still be executed or cancelled.

4.1.3 Limitations of Accumulated Volume or Quantity Limits

Clearing Futures Participants are encouraged to consider the limitations stated below when defining the limits for the volume or quantity based checks:

All the accumulated volume or quantity limits are counted for each individual Contract only and therefore there are no global cross-Contract counters available.

- Combination Orders only affect the counters as described below:
 - Combination Orders are broken down into their individual legs and the size of the individual legs shall be added to the counters of the individual Contract legs.
 - For Combination Orders where the same Contract is both bought and sold in different legs, the buy and sell volume or quantity shall be netted and only the surplus shall be added to the Open Order Buy/Sell and traded bought/sold counters.
 - Combination Order risk checks can be configured and set for combinations where Contracts in the same Products are bought and sold, providing flexible risk management of time spreading.
- Already resting Stop Orders can be triggered and traded after a PTLG has been blocked.

4.2 ORDER MANAGEMENT RISK CHECKS

4.2.1 Maximum Order Volume/Quantity Check

The Maximum Order Volume or Quantity Check is a Pre-Trade risk check that provides Clearing Futures Participants with the ability to check Central Limit Order Book (CLOB) Order volume or quantity against a pre-set volume or quantity limit per Contract or Combination Order. The Order quantifier can be based on either the number of contracts (quantity calculation) or the underlying units of the specific Contract (volume calculation). For example, if the max Order quantity is set to calculate based on the quantity limit methodology and is set to 200 for the number of WTI futures contracts and an Order equals or exceeds 200 contracts, it will be rejected. Likewise, if the max Order limit is set to calculate based on the volume limit methodology and is set to 200,000 for the number of WTI barrels and an Order equals or exceeds 200,000 barrels, it will be rejected.

Different maximum Order volume or quantity checks can be set on different PTLG for the same Participant. Therefore, it is possible for a Clearing Futures Participant to assign different limits to different accounts for a Participant as long as the accounts are assigned to different PTLGs.

Different maximum Order volume or quantity thresholds can be specified per Contract. As an example, Clearing Futures Participants could request that the CLOB maximum Order size for WTI Crude should be less than 1,000 contracts while for Brent Crude the CLOB limit should be less than 250 contracts.

For Mass Quotes the maximum Order quantity check is performed per transaction. This means that the maximum quantity a user can add via one mass quote transaction is always $2 * \text{MaxSize} * \text{Maximum Number of Quote Items}$. E.g., with a Max CLOB Order Limit of 2, an optimized mass quote (NFX caps the

max number of Instruments at 37), it's possible to add 1,776 (2*24*37) contracts regardless of any active daily accumulated quantity checks.

Orders in Combination Order Books are handled differently depending of the composition of the leg contracts.

Type of Combination	Examples	Max Order Volume or Quantity Check
All leg contracts are of the same Instrument class.	WTI Crude combo: CLQM5/N5 RBOB Combo: RBQZ5/F6	Net exposure is validated against the specified limit in the applicable Instrument. If zero net exposure no validation is done.
Leg contracts are not of the same Instrument class.	Combo Contracts combining Crude Oil futures: WTI vs Brent Crude- CLQM5/BFQM5 Combo Contracts combining different commodities: Crack: RBOB versus WTI Crude RBQZ5/CLQZ5	The exposure in each leg contract is validated against the corresponding limit for the Instrument.

4.2.2 Maximum Trade Report Size

Maximum Trade Report (Block and EFRP) Size is a Pre-Trade risk tool that permits Participant to place an upper limit on the volume or quantity for trade reporting of Off-Exchange transactions. If the trade report volume or quantity is equal to or greater than the pre-set limit, the off-exchange trade report will be rejected. Similar to other risk tools, the Maximum Trade Report Size can be set at the Product, and PTLG, or Combination level.

For multi-leg trade report transactions, each leg will be validated individually against the Maximum Trade Report Size limit. If at least one leg exceeds the pre-set limit, the entire transaction will be rejected.

The Max Trade Report Size limit, along with the Max Order Quantity Check (for CLOB Orders), will allow Participants to manage both Orders within the CLOB and Block Trade transactions using a combined volumetric position limit. Participants will be able to manage max order/trade sizes in both CLOB and trade reported transactions independently at significantly different levels.

The Max Trade Report Size will also allow Participants to restrict accounts from transacting certain trade reported transactions, which meet or exceed the limit, by instrument class. Participants may set the Max Trade Report Size below the specific product Block Trade threshold (note that minimum threshold allowable for EFRPs is 1 contract). Setting the Max Trade Report Size limit to zero will allow for an “unlimited” trade report size.

4.2.3 Mass Cancel of Open Orders

Risk Managers can quickly and easily cancel ALL open Orders, including Quotes, (“Kill Switch”) for a PTLG via the TradeGuard User Interface.

This feature will immediately cancel ALL open, active and inactive Orders for ALL of the accounts associated with the respective PTLG.

This mass Cancel functionality can be executed with two mouse clicks via the UI, but can only be executed for a single PTLG.

4.3 ORDER RATE RISK CHECK

The maximum Order rate/sec limit is defined as new Orders/second-time-interval and is set per PTLG and is measured as the combined Order flow sent to the Trading System for all Users connected to that PTLG.

The Order rate is based on information received after Order insertion (post Order validation). Thus, it is possible that Orders that are above the configured limit will be accepted and inserted to the Order Book.

The limit shall be expressed as an Order per 0.1 second to 5.0 second-time-interval (configurable at a minimum increment of 0.1 second by the user). If the Order rate equals or exceeds the configured Order rate limit when the TradeGuard check is done, a breach will occur and the PTLG group is blocked on all Contracts. For example, with a time interval setting at 2.0 seconds and a corresponding Order rate limit set at 50 Orders, TradeGuard will accept a maximum number of 49 Orders every 2.0 seconds.

The goal with this control is to capture abnormal aggregated Order/sec rates resulting from Orders submitted via a PTLG.

It is not possible to set different max Order/sec limit per Contract.

Should the limit be breached, the following actions will be taken:

- The affected PTLG will be blocked and all new Orders will be rejected; and
- It will still be possible to cancel open Orders(including Quotes), which remain in the Order Book and are not canceled.

A block of a PTLG as a result of an Order rate breach must be unblocked manually by the Clearing Futures Participant or the Exchange, once the root cause of the excessive Order generation has been identified and resolved.

The Order Rate Check is based on new Orders inserted into the book. If an Order is traded at entry it will also count towards the Order Rate limit. The following examples will be ignored by the Order Rate Check:

- Order cancel requests;
- Time in Force Conditions that do not stay in the Order Book, such as Immediate or Cancel Orders (IOC) or Fill or Kill Orders (FOK) (except in auctions where they do stay in the Order Book);
- rejected Orders; and
- Order modifications.

For Mass Quotes the maximum Orders/sec check is done per item and side, meaning that a limit of 100 Orders/second will only allow the user to enter 49 double sided items per transaction without being blocked.

Stop Orders are validated against the maximum Orders/sec when triggered, and not at entry.

4.4 TRADING RESTRICTIONS

4.4.1 Restricted Contracts

Enabling restricted Contracts in the PTLG overrides the default setting. Once enabled, Users will be allowed to trade only the Contracts based on limits that have been configured.

The Restricted Contract check is performed Pre-Trade within the matching engine.

4.4.2 Blocking PTLGs

Clearing Futures Participants are able to manually block/unblock a PTLG using the TradeGuard UI.

Users of a blocked PTLG are:

- Not permitted to enter new Orders nor alter existing Orders;
- Able to delete existing Orders;
- Permitted to login; and
- Able to view the market, receive broadcasts, and send queries.

A manually blocked PTLG can be unblocked intra-day manually with the TradeGuard UI by a Clearing Futures Participant, or if nothing is done then the PTLG will be unblocked automatically the next day.

4.5 CONNECTIVITY ISSUES

4.5.1 Automatic Block at Drop Copy Disconnect Safeguard

The NFX Drop Copy service allows Participants to receive real-time copies of execution reports and acknowledgement messages as they are sent from the Trading System on a separate, dedicated path.

The TradeGuard Drop Copy at Disconnect safeguard monitors a User's drop copy connection, which if a disconnection is detected an event is generated to block all PTLGs associated with the User as if they were blocked manually. The affected PTLGs must then be manually unblocked by the Clearing Futures Participant when the monitored User is active again.

4.6 RISK MANAGER SUPPORT TOOLS

4.6.1 Email Notifications

The PTRM service automatically sends e-mail alerts to a list of pre-defined recipients connected to a PTLG in the following cases:

- For Pre-Trade risk checks there are two levels that can be configured to generate emails:
 - A notice level (percentage of limit) that is configurable per PTLG; and a
 - A warning level (percentage of limit) that is configurable per PTLG.
- When an Order is rejected TradeGuard will send a FIX message to the associated Users. In the event that a limit is lowered by the Clearing Futures Participant below its current consumption and therefore breached, an email notification of the breach will be sent to the configured recipients.

Not more than one of each the notification and warning emails will be generated per day per PTLG, Contract and type of risk check. Thus, no more than one notification and warning mail for every configured limit will be sent per day.

If a limit is changed intra-day by the Clearing Futures Participant, the counter is reset, meaning that one notification and warning and email will be allowed for that specific limit check regardless of what emails have been sent before the limit was adjusted.

Please note, as an Order rate limit breach results in a hard block (i.e. it requires a manual unblock by the sponsor), a new email will be generated each time the Order rate limit is breached.

Below are examples TradeGuard e-mail notifications:

Breach Event, Group: XXX_XXX, Risk Check: TOTAL_NET_BUY, Time: Fri Feb 15 09:23:16 CET 2013, Event Level: Notice, Consumed: 40, Limit: 50

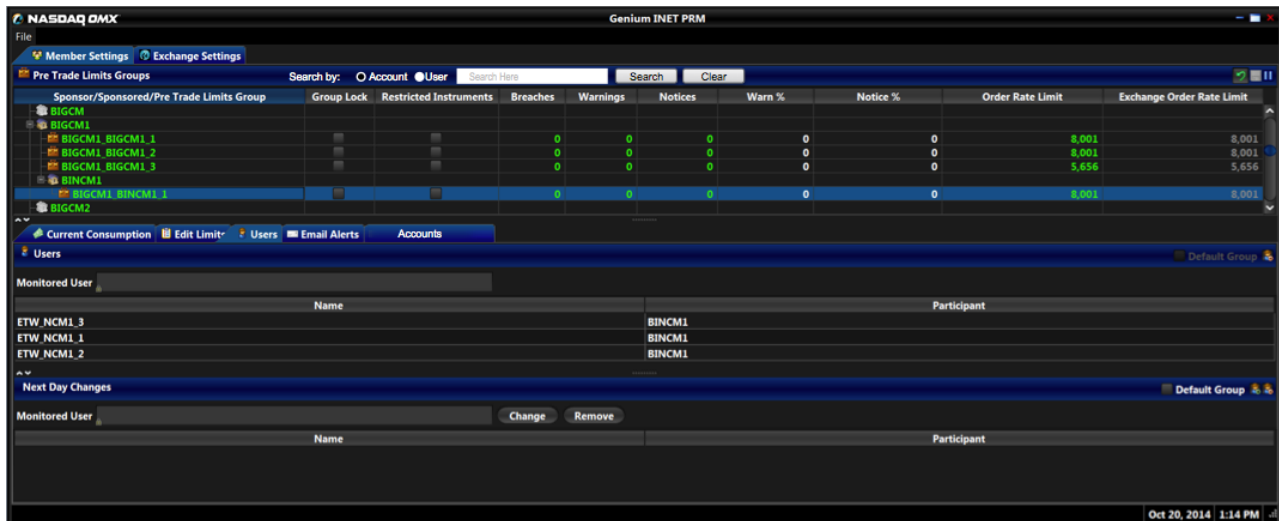
Breach Event, Group: XXX_XXX, Risk Check: TOTAL_NET_BUY, Time: Wed Feb 13 13:17:18 CET 2013, Event Level: Warning, Consumed: 95, Limit: 100

4.6.2 TradeGuard User Interface

The Exchange provides Clearing Futures Participants with a TradeGuard User Interface which allows Clearing Futures Participants to:

- Define PTLG and risk checks;
 - Configure Contracts and the associated limits for each risk check;
 - Define restricted Contracts;
 - Add/remove account to/from a PTLG; and
 - Add or change monitored user for a PTLG.
- View the current consumption level of each risk check in real-time;
- Intra-day emergency block/unblock Order flow for a PTLG;
- Mass cancellation of all active, open Orders, including Quotes, for a PTLG;

- Identify if the maximum Order/sec limit has been breached;
- Unblock a PTLG that has breached the limit for maximum Order/sec; and
- Administrate e-mail addresses to receive alerts and warnings.



The TradeGuard UI may be configured such that a User has write access or read-only access. The scope of information available to a User may also be configured for all Participants (exchange users) or only for the Participant to which the User belongs (Participant users).

The UI is a web-based application accessed via a certificate and user credentials. The requirements to run the application are a Windows PC, at least 512MB of free memory, and Java 7 installed.

4.6.3 Intra-day and Next Day Changes

The following table shows what changes can be made intraday or for the next day.

CHANGE	Intraday	Next Day
Update the quantity or volume check limit values	X	
Update the Order rate limit	X	
Select restricted Instruments	X	
Add an email address to a PTLG notification list	X	
Update an email address of a PTLG notification list	X	
Update the warning and notice percentages on a PTLG	X	
Add/Remove a Contract to/from a PTLG		X
Change the calculation unit on a Contract		X
Remove an e-mail address from a PTLG notification list		X
Create or delete a PTLG		X

5 APPENDIX A – EXAMPLES ON DAILY VOLUME CHECKS

Calculation until: Volume

Risk Limits (in contracts)

MaxSize	TotNetBuy	TotNetSell
61	200	200

The PTLG will neither be able to have a net traded exposure of more than 200 contracts in any direction.

Current Consumption (in contracts)

MaxSize	TotNetBuy	TotNetSell
61	180	180

Presuming for the below examples that the PTLG has three open Orders of 60 contracts on each side of the book.

- Example 1 – PTLG enters a bid of 50 contracts in the Order Book.
 - The Order is rejected as the TotNetBuy (200 contract) limit would be exceeded.
- Example 2 - PTLG enters a bid of 20 contract in the Order Book.
 - The Order is rejected as all Orders are rejected if the resulting consumption is EQUAL TO GREATER THAN the respective limit.
- Example 3 – PTLG cancels two of its three, 60 contract buy Orders and then enters a new Order to buy 100 contracts.
 - The new 100 contract Order is rejected because it exceeds the Max Size limit of 61 contracts.
- Example 4 – PTLG cancels one of its three, 60 contract buy Orders and then enters a market Order to buy 60 contracts.
 - The Order is accepted and executed at the best market price or prices.