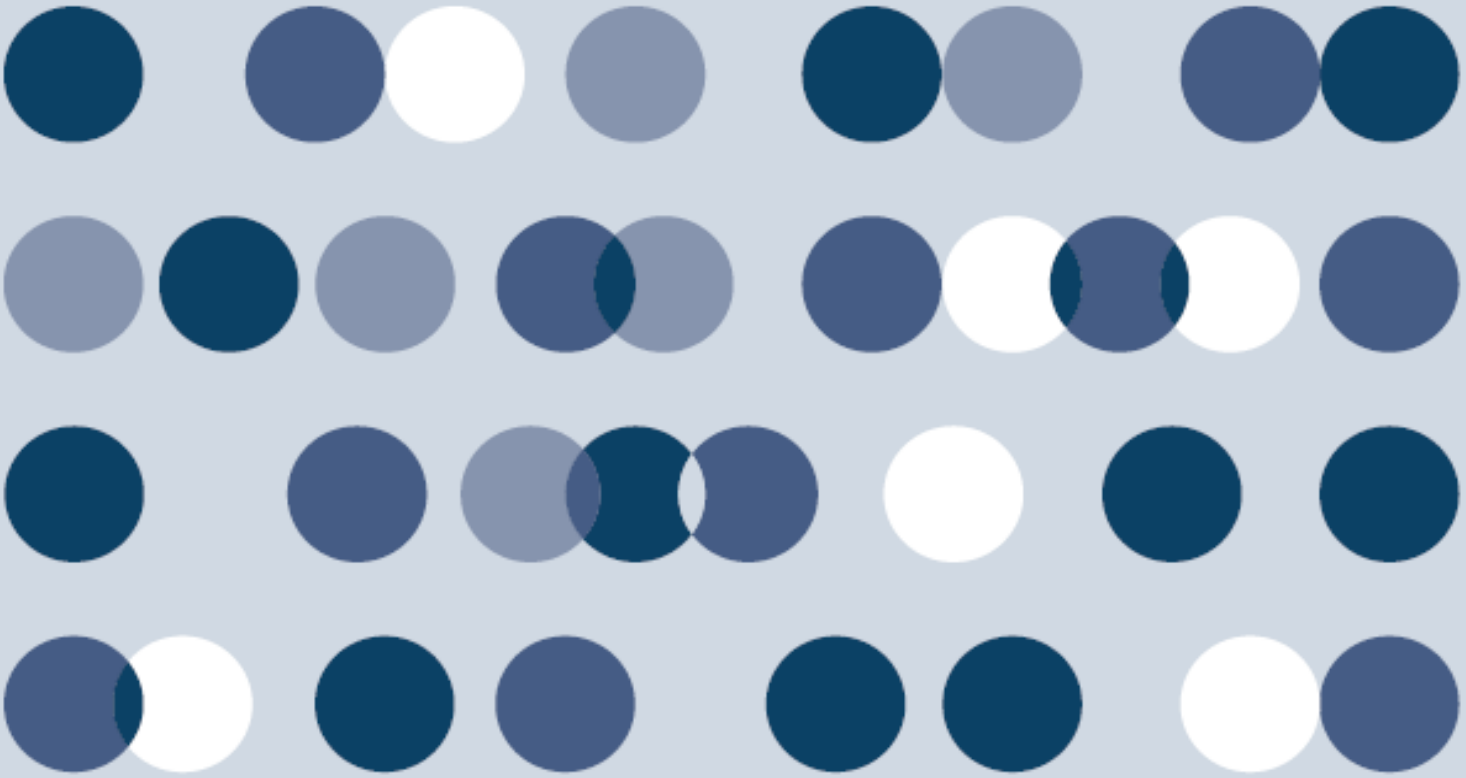
April 2024

HKATS RISK FUNCTIONS USER'S GUIDE



HKATS Risk Functions User's Guide Change History

The following is the summary of the recent changes made to the HKATS Risk Functions User's Guide.

Date	Section	Description Summary
01 November 2021	ALL	First version for HKATS Risk Functions User's Guide.
22 November 2021	Appendix C Example Tradable Table for Maximum Order Size Limits	Introduction of MSCI China (USD) Index Futures and MSCI China Net Total Return (USD) Index Futures Contracts
25 November 2022	Appendix C Example Tradable Table for Maximum Order Size Limits	Introduction of Hang Seng TECH Index Futures Options and Enhancements to Hang Seng TECH Index Futures and Hang Seng TECH Index Options
16 January 2023	Appendix C Example Tradable Table for Maximum Order Size Limits	Revision of Contract Specification for MSCI India (USD) Index Futures
9 April 2024	1.1. PC Specifications Appendix F Audit and Utilization Reports	Best practices for setting up Tradables Clarification for Audit Report records

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Introduction

Purpose

This user's guide serves as a learning tool and provides guidance in the operations of using the HKATS Risk Functions ("PTRM") for participants of the Exchange. Participants can use this platform to monitor and configure Pre-Trade Limit Groups ("PTLG") in order to control pre-trade risks by the Exchange's Prescribed Risk Controls.

Background of HKATS Risk Functions

HKATS Risk Functions is a Java web-based software which operates within HKATS to monitor and control pre-trade risks by the Exchange's Prescribed Risk Controls. This system aims not to replace participants' in-house Pre-Trade Risk Management system, but to provide Participants a back-stop which is complimentary to their own risk controls.

Note:

1. HKATS Risk Functions is mandatory to all Participants.
2. Participants are required to exercise due care in their own trading risk anytime they send orders into HKATS and the Exchange(s) reserves the right to disable HKATS Risk Functions whenever necessary (Section 3.16: Contingency Measures).
3. Participants shall inform their customers about HKATS Risk Functions in Derivatives Market and the possible scenarios of order rejections and cancellations
4. Please be advised that HKATS Risk Functions needs to be installed in a dedicated PC. Performance issues may arise if the Graphical User Interface ("GUI") is installed at the same PC with the trading applications of HKATS.

Responsibility for setting risk limits in HKATS Risk Functions

In the case of a self-clearing Exchange Participant ("EP"), the responsibility of setting risk limits rests with the appropriate function(s) of the firm (e.g. Compliance, Risk or RO).

In the case of a Non-Clearing Exchange Participant ("NCP"), it is the responsibility of their General Clearing Participant ("GCP") to set the risk limits.

Please note that HKATS Risk Functions is mandatory. All Participants are required to set risk limits available in the application as required by the Exchange(s) from time to time.

Scope of HKATS Risk Functions

HKATS Risk Functions provides Risk Limit Manger and Trading Units the following Prescribed Risk Controls:

	Risk Limit Manager[1]		Trading Units[2]	
Functions	View	Edit	View	Edit
Pre-Trade Limit Groups[3]	✓	✓	✓	
Maximum Order Size Limits	✓	✓	✓	
Maximum Block Trade Size Limits	✓	✓	✓	
Maximum Intraday Exposure Limits	✓	✓	✓	
Execution Throttle	✓	✓	✓	
Intraday Position Limits	✓	✓	✓	
Order Exposure Reference	✓	N/A	✓	N/A
Product Type/Class Tradables	✓	✓	✓	
Trading ID(s) Assignment	✓	✓	✓	
Execute “Stop”	✓	✓	✓	✓
Execute “Mass Order Cancellation”	✓	✓	✓	✓
Execute “Kill Switch”	✓	✓	✓	✓
Execute “Unstop”	✓	✓		
Manually unblock PTLGs	✓	✓		
Import Limits	✓	✓		
Export Limits	✓	✓	✓	✓
Setup Audible Alerts	✓	✓	✓	✓
Setup Email Notifications	✓	✓	✓	

Further details of each risk functions will be discussed in the remaining sections.

[1] Risk Limit Manager is a person being assigned or authorized by a Participant to define, maintain and monitor PTLGs and their corresponding risk limits.

[2] Trading Units cannot make any changes except executing Stop / Mass Order Cancellation / Kill Switch, setting the audible alerts, exporting the risk limits and changing passwords

[3] Operations on Pre-Trade Limits Groups include Trading ID assignment and creating/deleting PTLGs.

Reference Documents

1. Information Paper on Pre-Trade Risk Management (PTRM) System in Derivative Market (June 2015)
2. Information Paper on HKATS Risk Functions (PTRM 2.0) Enhancement (March 2021)
3. Presentation Materials of Briefings on HKATS Risk Functions Enhancement ("PTRM 2.0")
4. Presentation Materials of Trainings on HKATS Risk Functions Enhancement ("PTRM 2.0")

Getting Started

1.1. PC Specifications

To Launch the HKATS Risk Functions, participants must install Windows Google Chrome Browser and Java 8 on a PTRM dedicated PC. The connection is done through existing HKATS production networks (SDNET/2 or HKEX Service Network circuits). The IP address of the dedicated PC must be configured into one of those being allowed at production.

HKATS Risk Functions PC Specifications	
Processor	Intel Core i3 6th Generation 3.2GHz or Higher
RAM	4GB
Storage	10GB
Network adapter	100Mbps full-duplex
Operating System (OS)	Microsoft Windows 10 (64 bit)
Layered Software	JAVA 8 See Java System Requirements: https://java.com/en/download/help/sysreq.html
	Anti-virus software
Supporting Browser	Windows Google Chrome browser (Version to be advised and notified by HKEX to EPs from time to time)[4]
Bandwidth Usage	Approximately 1 Mbps of existing SDNET/2 or HKEX Service Network circuit per session **Note**: Higher bandwidth consumption per PTRM GUI connection is estimated when more than 200 tradables are defined in the PTLG EPs are reminded to note that Intraday Position Limits consume a higher amount of bandwidth for updating the relevant risk limits and counters if a large number of Instrument Tradables is created for more granular controls. **It is not advised to leave the "Edit Limits" or the "Position Limits" tabs open to avoid unnecessary consumption in the bandwidth.** The more the Instrument Tradables being added, the higher the PTRM GUI bandwidth consumption and display latency will be observed. It is estimated that an extra of 1Mbps of bandwidth per 40 Instrument Tradables defined per PTLG will be consumed when leaving the "Edit Limits" or the "Position Limits" tab open. **From the abovementioned factors on bandwidth usage, Participants are reminded to refrain from setting up more than 400 Instrument Tradables per PTLG.**

Note:

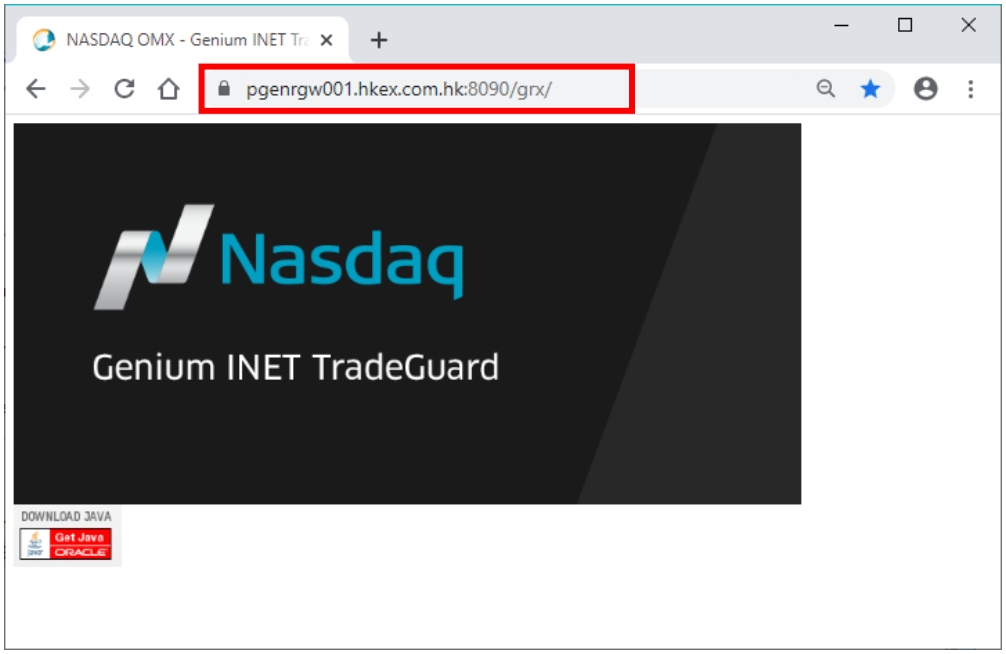
Please be advised that HKATS Risk Functions needs to be installed in a dedicated PC. Performance issues may arise if the GUI is installed at the same PC with the trading applications of HKATS.

[4] HKEX will announce the supported Google Chrome version from time to time. Please refer to our webpage for details.

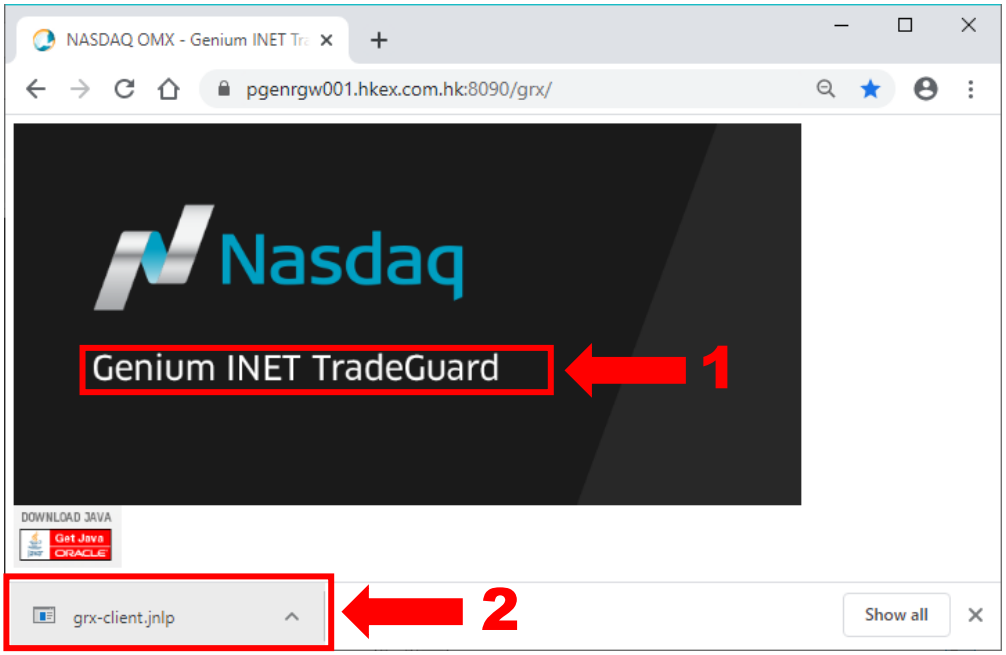
1.2. Installing the Application

Participants should ensure that the host table, Java and Google Chrome are setup properly before downloading the application. Regarding the general settings for Google Chrome and Java, please refer to Appendix E.

Step 1: Open Google Chrome and access the launch page.



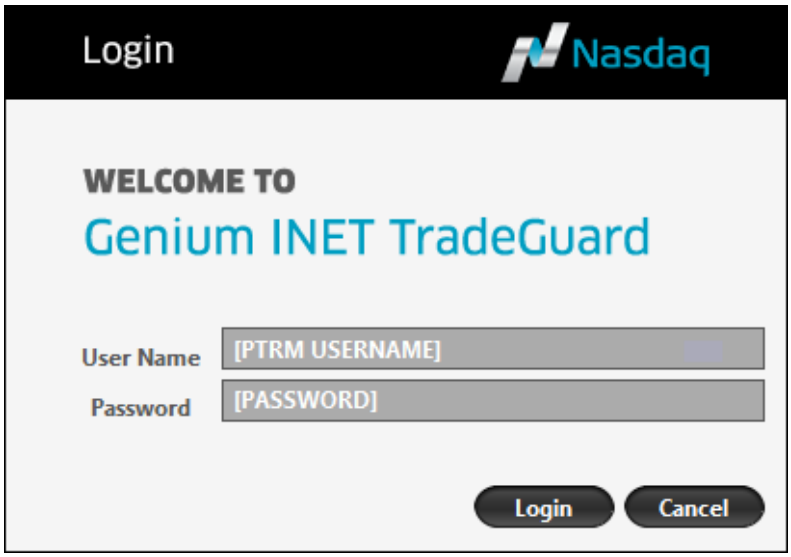
Step 2: Click on the screen of Genium INET TradeGuard, and open the downloaded file



Step 3: The JNLP file will be downloaded to launch PTRM GUI, and the login prompt displays.

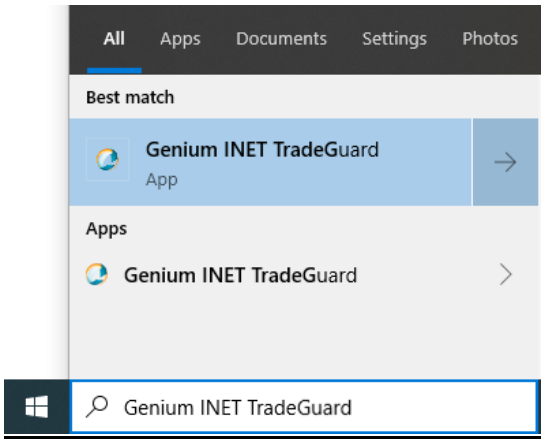
(Please refer to Appendix A – Common Problem if you encountered any error.)

Step 4: Click the "Login" button after entering the PTRM login ID and the password.



1.3. Launching the Application after Installation

A shortcut will be created in the start-up menu and Desktop after installation. By clicking the icon, GUI Users can launch the application directly using the URL in the last login session. Alternatively, GUI Users can also access by entering other URLs by repeating the login procedures above.



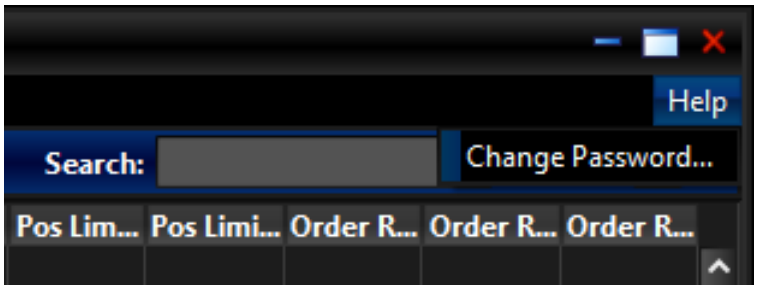
Note:

Please be advised that the deletion of JAVA Temporary Internet File is needed if a new version of PTRM is released. For details, please refer to the Appendix A – "Troubleshoot PTRM Connectivity Problems" for connectivity issue.

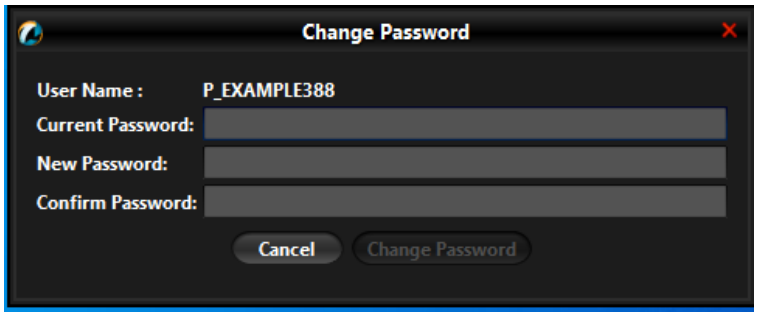
1.4. Changing Password

A GUI user may change their password at any time by clicking the Change Password button under “Help” on the main screen.

Step 1: Click the Change Password button under “Help” on the top right corner.



Step 2: Enter the current password in the “Current Password” field and the new password in the “New Password” field.



Step 3: Confirm the new password in the “Confirm Password” field.

Step 4: Click “Change Password” to activate the new password.

Note:

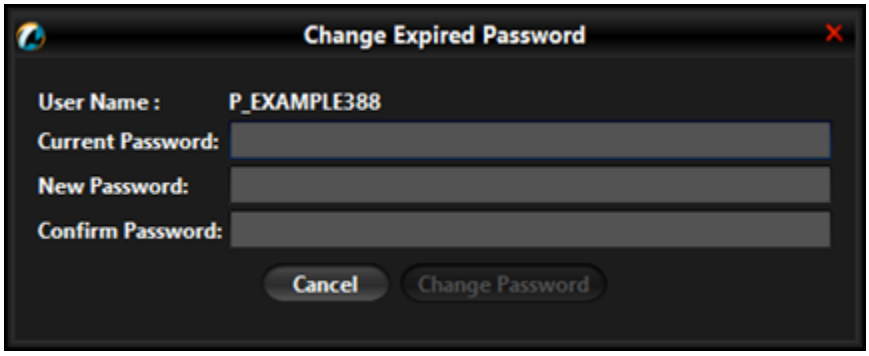
1. Password should contain at least 8 and at most 16 characters.
2. Password should contain a combination of: at least 1 letter; at least 1 numerical digit (0-9); and at least 1 special character.
3. The acceptable special characters are:

!	“	#	$	&	(	)	*	+	,
-	.	/	:	;	<	=	>	?	@
[	]	^	_	`	{	|	}	~	

Please note that “space”, percent “**%**” and backslash “****” are NOT allowed

1.5. Password Expired

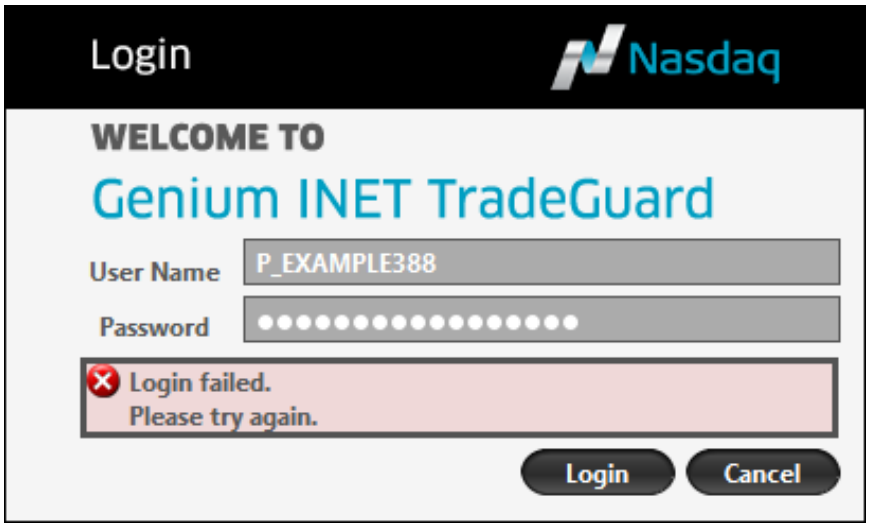
The expiration time of the password is currently set as 90 days. Password should be different from the previous passwords in the past 365 days. When GUI User attempts to log on while the password expired, the following pop-up window will appear:



To change an expired password, complete the steps from **Section 1.4 – Changing Password**.

1.6. Incorrect Password

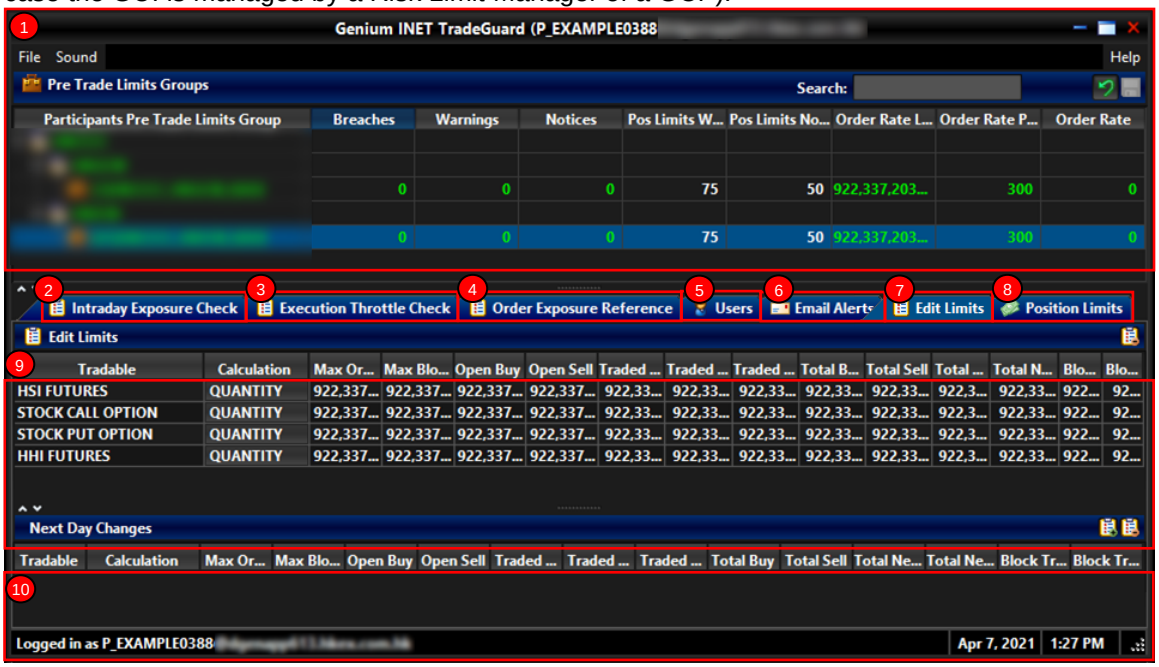
The following message will appear when users enter an incorrect password.



Users who have entered an incorrect password(s) for 10 consecutive times will have their account(s) locked and must contact the HKATS Hotline at +852 2211 6360 to unlock and reset their password(s).

1.7. General Layout

The GUI of HKATS Risk Functions shows the PTLG information of a given EP (or multiple EPs in case the GUI is managed by a Risk Limit Manager of a GCP).



Layout of HKATS Risk Functions GUI

Item	Description
1	*PTLGs Panel:* This panel displays a hierarchy of CP, EP and the PTLG(s) assigned to each EP.
2	*Intraday Exposure Tab:* The Intraday Exposure tab displays the current limits setting on Maximum Intraday Exposure as the real-time consumption of those limits in aggregated basis including both outstanding orders and executed trades for the whole day.
3	*Execution Throttle Check Tab:* The Execution Throttle Check tab displays the current limits setting on Execution Throttle Check as the real-time consumption of those limits including executed trades only, over a shorter and configurable time period.
4	*Order Exposure Reference Tab:* The Order Exposure Reference tab shows the real-time consumption in aggregated basis including outstanding orders only.
5	*Users Tab:* The Users tab lets you add, remove, and view which Trading ID(s) is/are assigned to a PTLG.
6	*Email Alerts Tab:* The Email Alerts tab shows the alert notification list for the PTLG, and lets you set the email address(es) in the list for receiving alert notification email(s).
7	*Edit Limits Tab:* The Edit Limits tab lets you add, remove, view and edit product level limits for a pre-trade limit group by their respective Product Type/Class on Maximum Order Size, Maximum Combo Size, Maximum Block Trade Size and 11 risk limits from Intraday Position Limits.
8	*Position Limits Tab:* The Position Limits tab shows the usage of instrument-level limits for each pre-trade limit group.
9	*Intraday Changes Panel:* The Intraday Changes panel shows changes that are applied immediately when saved.

10	*Next Day Changes Panel:* The “Next Day Changes” panel shows changes that when saved in the interface, are sent to the exchange database, and become effective when the system is started the next day.

Window Buttons and Commands

Icon	Command
	From left to right: *Minimize:* Minimizes the application to the taskbar. *Maximize:* Maximizes the application to fill the entire screen. *Close:* Closes the application.
	From left to right: *Revert:* Undo any unsaved changes. *Save:* Save your current changes.
	Add: Add a new Tradable, Email Recipient, or Trading ID.
	Remove: Remove an existing Tradable, Email Recipient, or Trading ID.
	From left to right: *Add:* Add a new PTLG. *Remove:* Remove an existing PTLG.

Item Status

Icon	Command
	Removed: Indicates that this item has been saved and is marked for removal in a next day change.
	Added: Indicates that this item has been saved and is marked to be added in a next day change.
	Unsaved: Indicates that this item has not yet been saved. You must click “Save” if you want this item to be saved.

1.8. Default Setup

There will be **one and only one** Base PTLG created by the Exchange(s) for each EP's Mnemonic. All Trading IDs of that Mnemonic will be assigned to the User Picker List (Section 2.4) by default and the default risk parameters of Base PTLG are set as follow:

Risk Parameter	Value
Warning % (Intraday Exposure Check, Execution Throttle Check & Intraday Position Limits)	75
Notice % (Intraday Exposure Check, Execution Throttle Check & Intraday Position Limits)	50
Execution Throttle Period	600
Order Rate Period	300
Options Order Coefficient (%)	100
Futures Order Coefficient (%)	100
At-Trade Risk Checks (Order Rate, Intraday Exposure Check, Execution Throttle Check & Intraday Position Limits)	922,337,203,685,477
Pre-Trade Risk Limits (Maximum Order Size, Maximum Combo Size & Maximum Block Trade Size)	922,337,203,685,477

Pre-trade Limit Group (PTLG) Settings

2.1 Structure of Pre-Trade Limit Group (PTLG)

PTLG refers to a group of Trading IDs of the same EP Mnemonic. PTLGs are set up by Risk Limit Managers so as to control the risk of a group of Trading IDs with the same EP Mnemonic.

Risk Limit Managers can apply risk limits on a PTLG to achieve PTRM checks on the Trading IDs assigned to that PTLG. Emergency Buttons can be executed per PTLG thus on all the Trading IDs contained in that PTLG.

Base PTLG is the first PTLG created by HKEX containing Trading IDs of the same EP Mnemonic. Base PTLG cannot be deleted by Risk Limit Managers.

Risk Limit Manager Login Session (Username: P_CABCXXXXX)	**Trading Unit Login Session (Username: P_ABCXXXXX or P_ABCMMXXXXX)**
General Clearing Participant (GCP): - Access the PTLGs of its EP Mnemonic **Clearing Participant (CP):** - Access all the PTLGs of EPs cleared by its company.	**Non-Clearing Participant (NCP):** - Access the PTLGs of its EP Mnemonic only

In general, Risk Limit Managers can carry out the following actions through HKATS Risk Functions:

1. Create/Delete PTLGs for their Trading IDs
2. Setting risk limits on PTRM GUI
   (Maximum Order Rate Limit, Intraday Position Limits, Maximum Intraday Exposure Limits, Maximum Order Size Limits and Execution Throttle Limits)
3. Create/Delete Email Notifications
4. Assign/Remove Trading IDs to/from PTLGs
5. Execute Unstop

Both Risk Limit Managers and Trading Units can carry out the following actions:

1. Execute Stop to stop order flow of a PTLG
2. Execute Mass Order Cancellation
3. Execute Kill Switch (combination of Stop and Mass Order Cancellation).

Responsibility for setting risk limits:

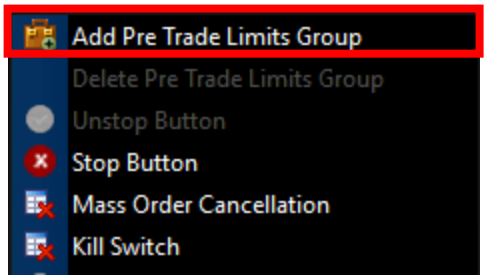
1. In the case of a self-clearing EP, the responsibility of setting risk limits on the PTLGs rests with the appropriate function(s) of the EP (e.g., Compliance, Risk or Responsible Officer, etc.).
2. In the case of a Non-Clearing Participant (NCP), it is the responsibility of their GCP's Risk Limit Manager to set risk limits on the NCP's PTLGs.

2.2 Creation of PTLG

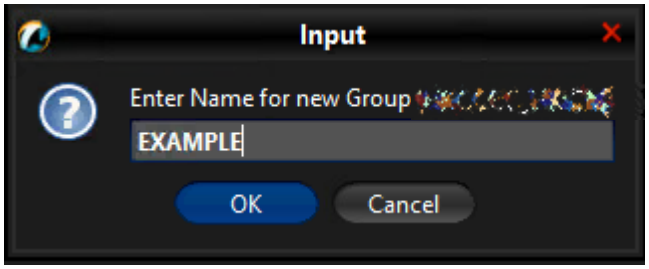
Non-Base PTLG creation requires at least 1 Trading ID while Base PTLG can be emptied with no Trading IDs assigned. Base PTLG cannot be deleted by Risk Limit Manager and there will only be one and only on Base PTLG for each EP Mnemonic. Any unassigned Trading ID will be assigned automatically to the User Picker List and thus belong to the Base PTLG.

To create a new Non-Base PTLG, the following main actions must be fulfilled. These include (1) naming and (2) assigning Trading IDs.

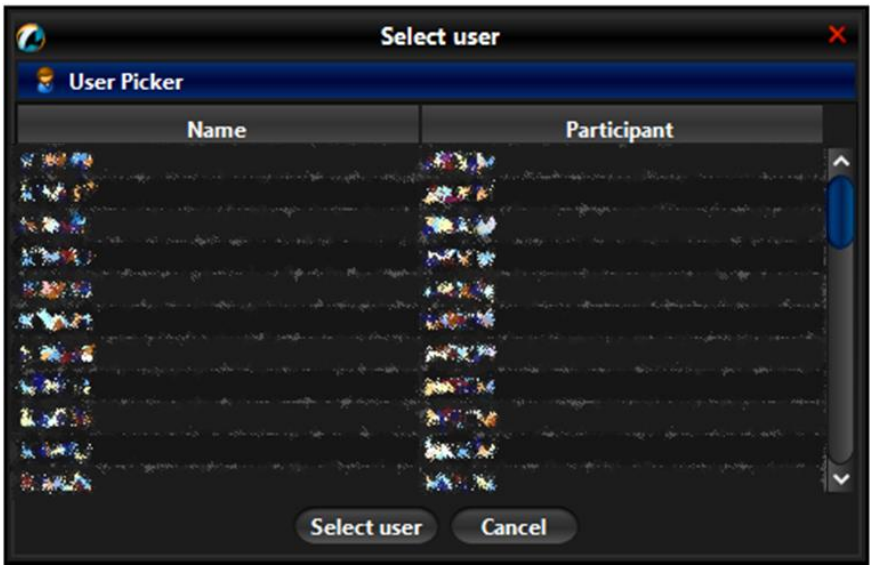
Step 1: Right click an EP Mnemonic from the PTLGs Pane and then select "Add Pre Trade Limits Group" from the menu.



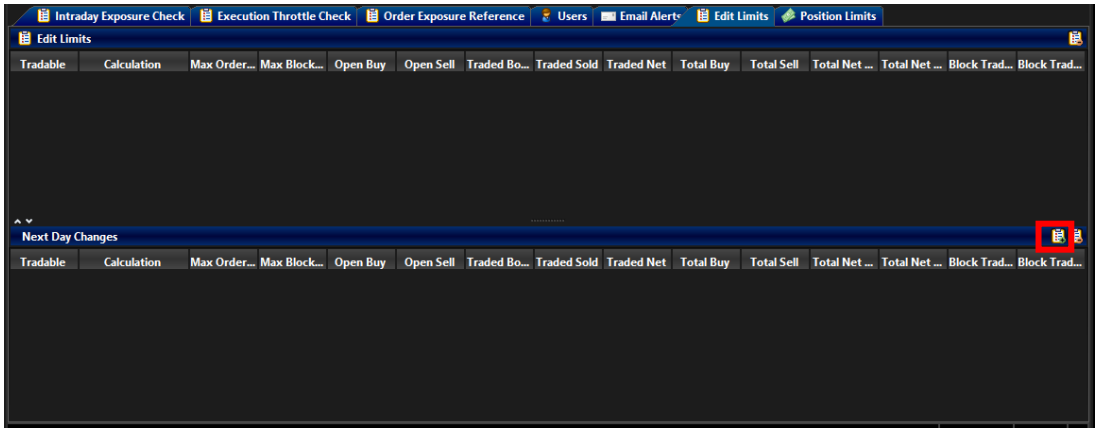
Step 2: Enter the name[NOTE1] of the new group and click "OK" to confirm.



Step 3: Select the User tab of the new PTLG, add at least one or multiple Trading IDs from the User Picker List by clicking the Add User button.
(Please refer to Section 2.4 for more details).

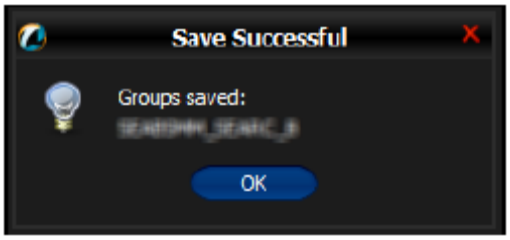


Step 4: Assign one or multiple tradables to the new PTLG by clicking the "Add New Tradable button" under "Edit Limits" tab. This is optional for creating a new PTLG. (Please refer to Section 3.4.4 for more details).



Step 5: Click "Save" of PTLGs Panel to save your changes.

The Save Successful dialogue box appears confirming your changes for the new PTLG.



Note:

1) The name of a PTLG must be unique and set within [A-Z], [a-z], [0-9]. The naming convention is given as below:
   Clearing Participant Mnemonic_Exchange_Participant Mnemonic_PTLG Name
   Example: HKCABC_HKABC_1

2) Creation of a PTLG is a Next Day Change, meaning that changes will be sent to the Exchange database and become effective when the system starts up next day.

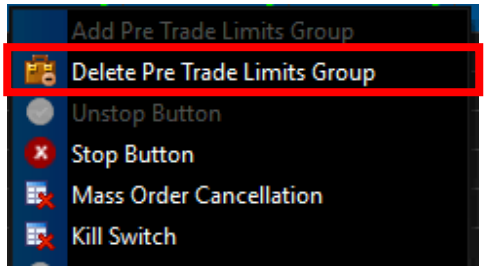
3) To delete a newly added Tradable on the same day, remove it from the Next Day Changes panel and add a new one.

2.3 Deleting a PTLG

Only Non-Base PTLG can be deleted by Risk Limit Manager. Upon the deletion, any unassigned Trading ID will be assigned automatically to the User Picker List and thus belong to the Base PTLG.

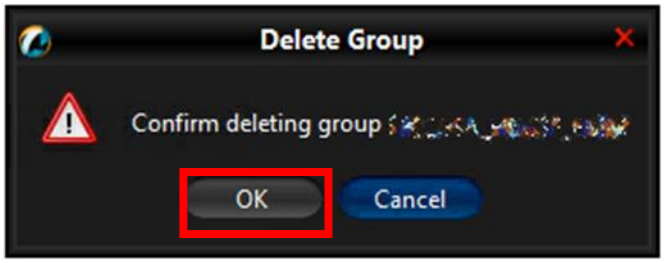
To delete an existing Non-Base PTLG, the following actions must be completed:

Step 1: Right click an existing Non-Base PTLG from the PTLGs Pane and then select "Delete Pre Trade Limits Group" from the menu.



Step 2: Click "Save" in the top right corner to confirm the action.

Step 3: Click "OK" on the confirmation window to delete the PTLG.

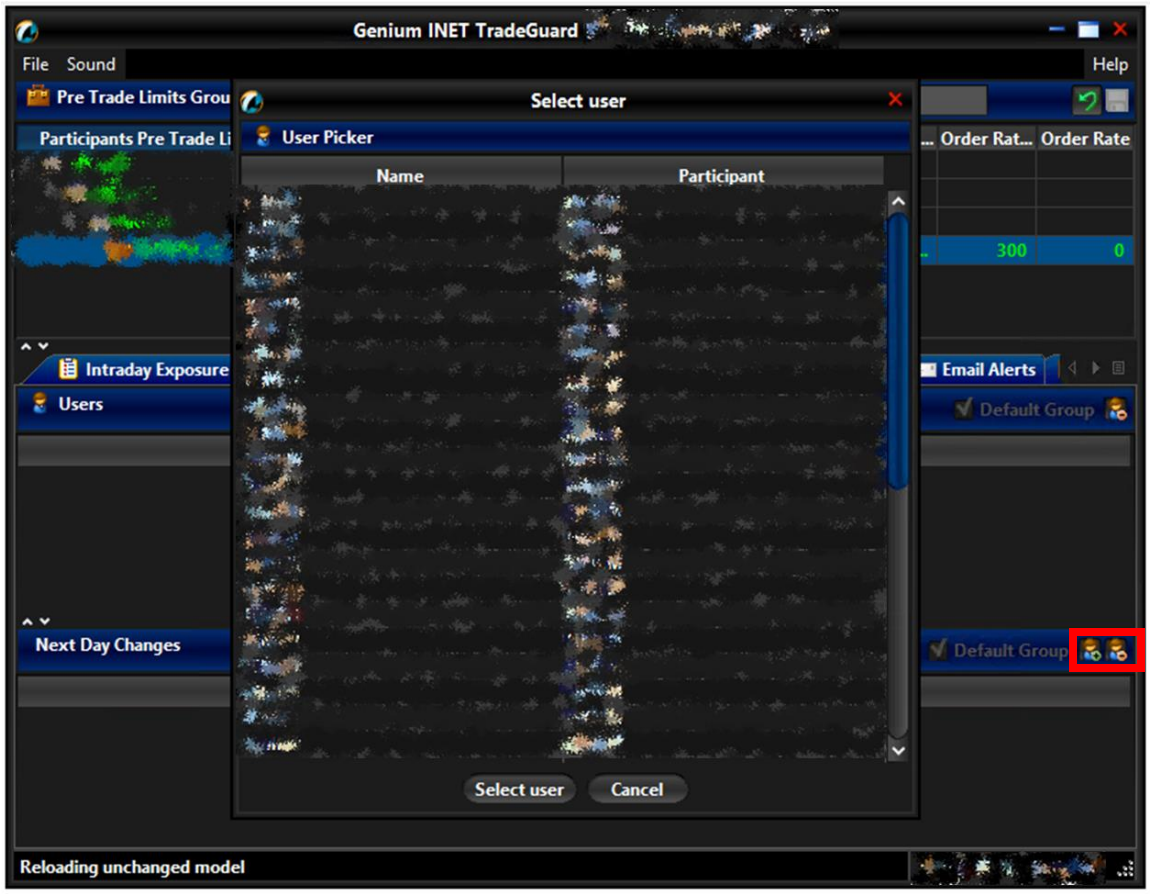


Note:

1) Base PTLG cannot be deleted.
2) HKATS Risk Functions does not provide an option to rename a PTLG. Risk Limit Manager has to delete the PTLG and create another one with a desired name.
3) Trading IDs of a deleting PTLG will be assigned to the corresponding Base PTLG next day.
4) Intraday limit change is still possible on a deleting PTLG before the deletion being effective next day.

2.4 User Picker List

Any new Trading IDs or unassigned Trading ID will be assigned automatically to the Base PTLG. They can be found in the User Picker List. However, View-only Trading IDs will not be shown as they cannot be added into PTLG.



2.4.1 User Reference Counter

On PTLG Panel, both Risk Limit Manager and Trading Unit can tell the number of active Trading IDs in that PTLG the value within the square brackets next to each PTLG.

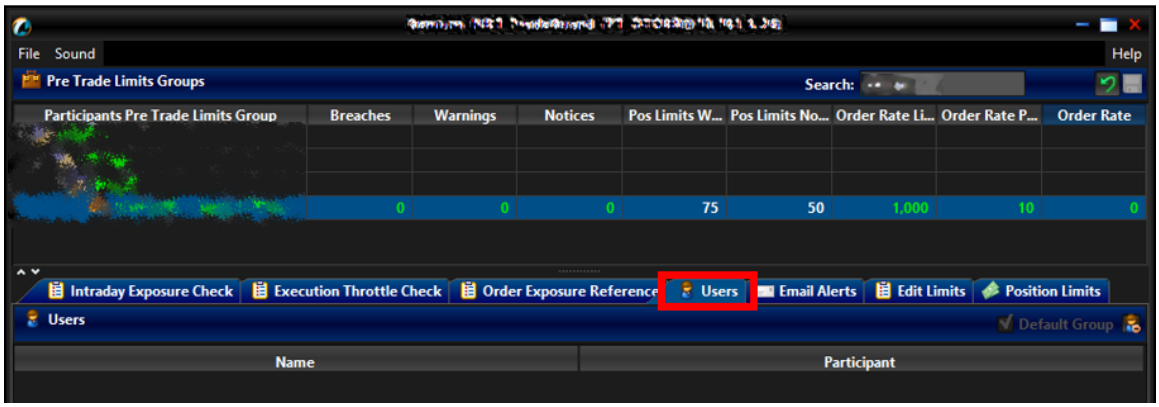
*Note: Trading IDs being reassigned on next day effective basis will not be counted here.

2.4.2 Assigning Trading IDs to a PTLG

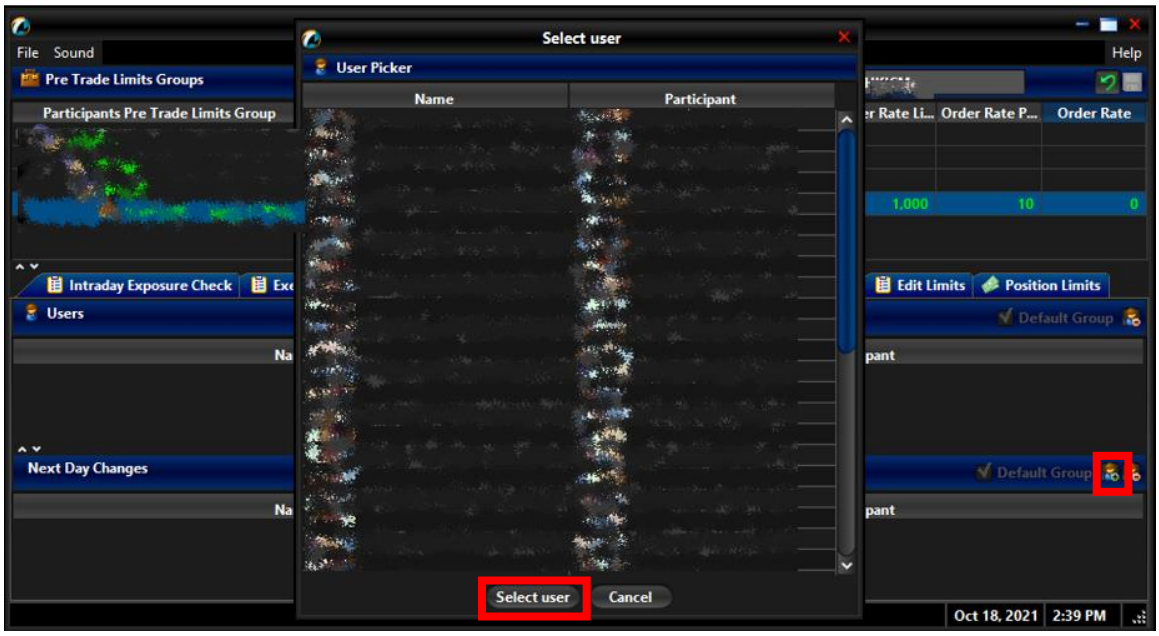
To assign Trading IDs into a PTLG, complete the following steps:

Please note that User Assignment on Base PTLG is not necessary.

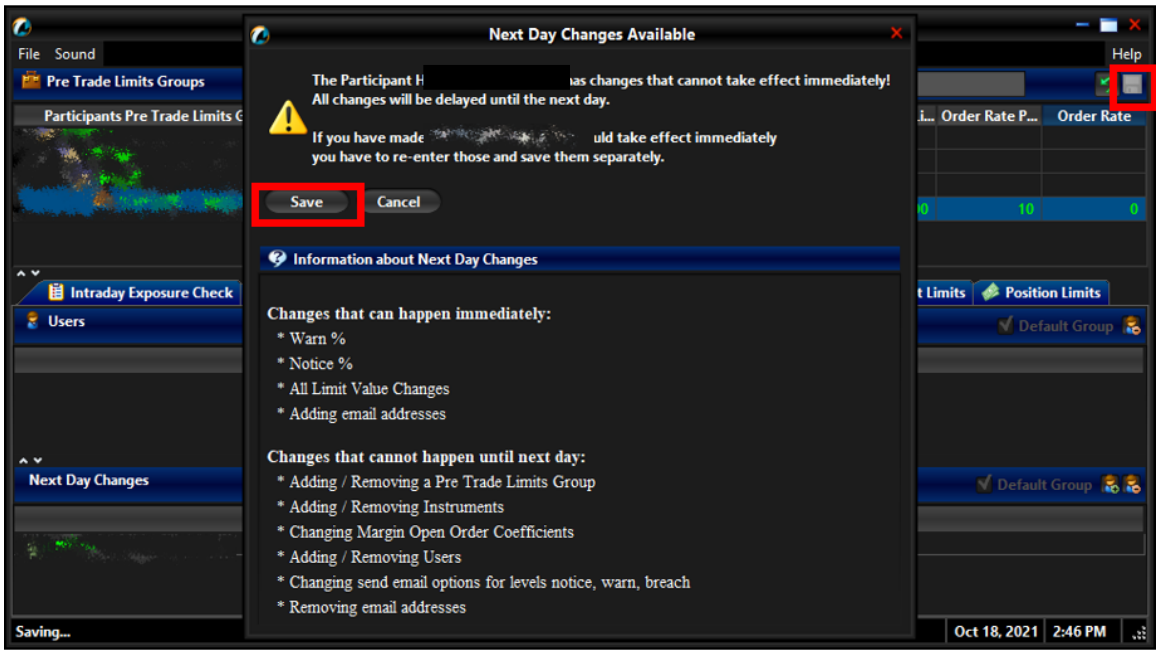
Step 1: Select a Non-Base PTLG from the PTLGs Panel and the click on “Users” Tab.



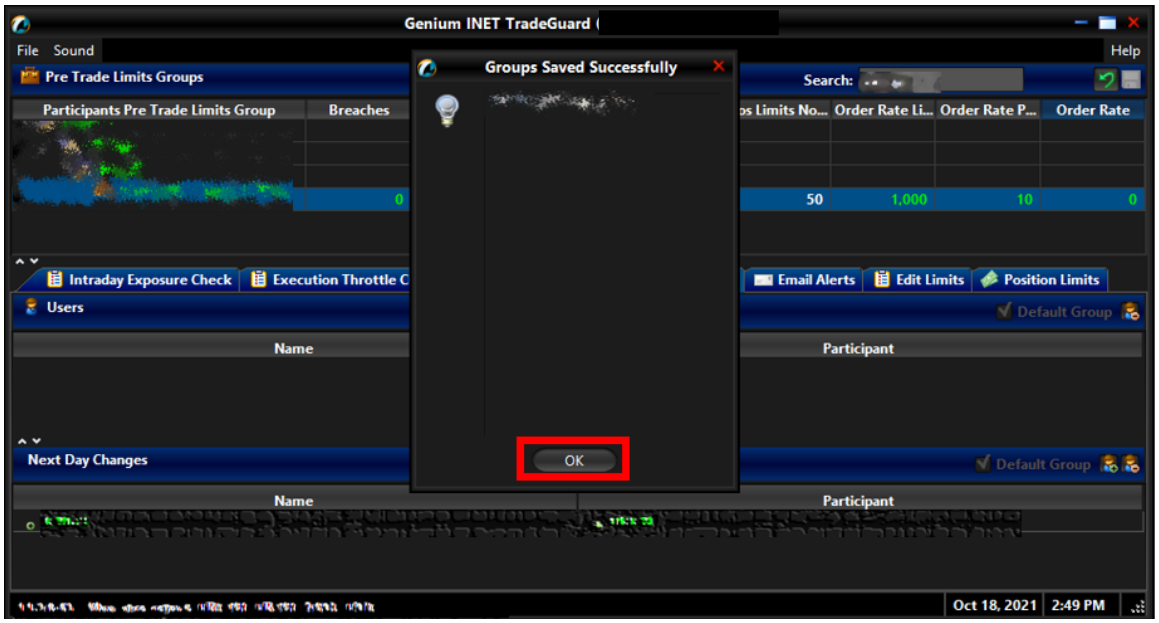
Step 2: Click on the “Add Users” button an you shall see the User Picker List. Highlight the Trading IDs you want and press “Select user”



Step 3: Click Save and confirm on the “Next Day Changes Available” window.



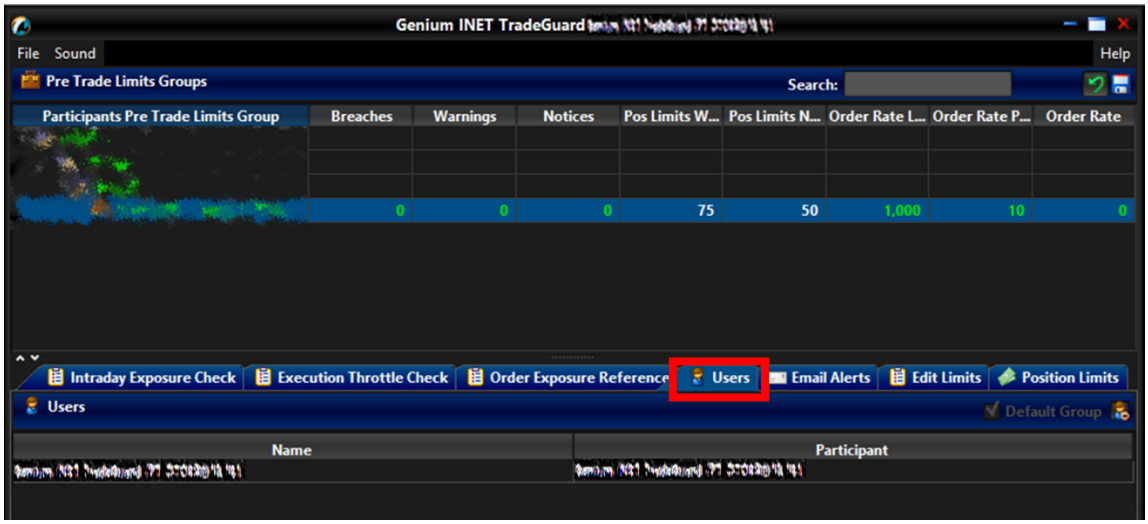
Step 4: Added Trading IDs will be effective next day. They will be displayed under the Next Day Changes section and green in color.



2.4.3 Remove Trading IDs from a PTLG

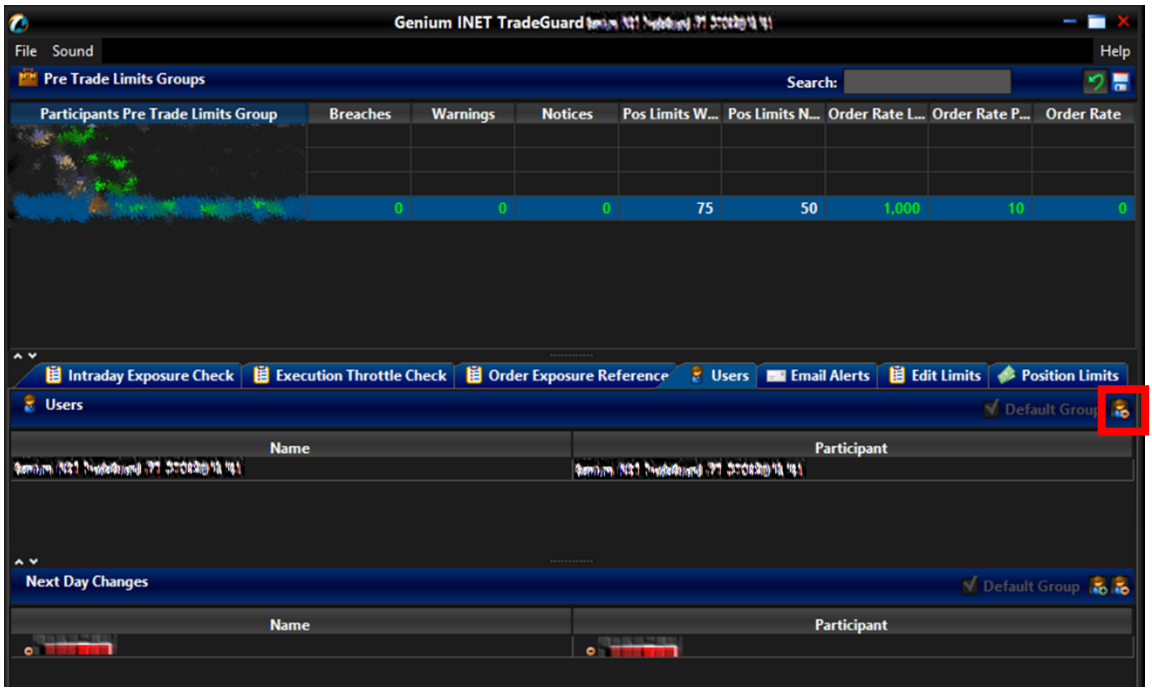
To remove Trading IDs from a particular PTLG, complete the following steps:

Step 1: Select a PTLG from which the Trading IDs are assigned to from the PTLGs Panel

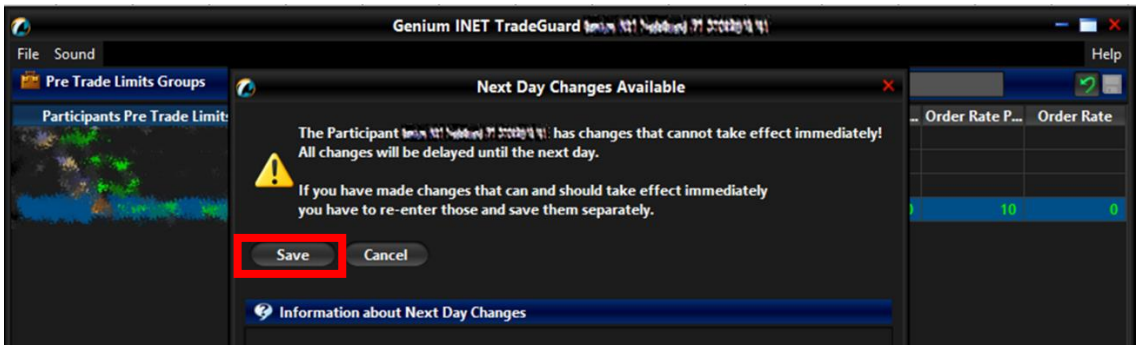


Step 2: Click on “Users” Tab and highlight the Trading IDs that you want to remove.

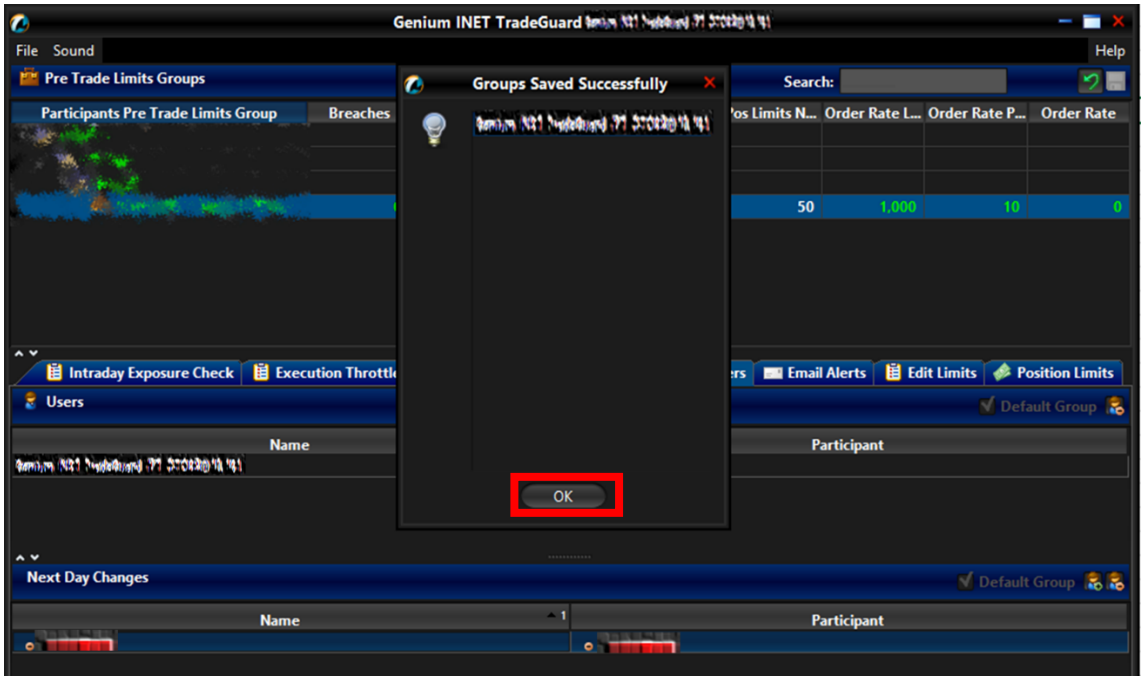
Step 3: Click the “Remove Users” button shown on the screen capture above



Step 4: Click Save and confirm on the “Next Day Changes Available” window.



Step 5: Removed Trading IDs will be effective next day. They are displayed under the Next Day Changes section and red in color. They can also be found on the User Picker List immediately for subsequent Trading ID assignment.



2.4.4 Reassigning Trading IDs to another PTLG

To reassign Trading IDs to another PTLG, complete the following steps:

Step 1: Remove Trading IDs from the original PTLG by following Section 2.4.3.

Step 2: Removed Trading IDs will be shown on the User Picker List.

Step 3: Add the removed Trading IDs to the designated PTLG by following Section 2.4.2

Step 4: Reassigned Trading IDs will be effective next day. They are displayed under the Next Day Changes panel and being red in color in the original PTLG; being green in color in the newly assigned PTLG.

2.5 Email Notification

Another feature of HKATS Risk Functions is email notifications with regards to related events, such as notification, warning, breach or executing emergency buttons. Risk Limit Manager is able to set up a list of email addresses for each PTLG and upon the trigger of a related event, a notification email will be sent to those email addresses. Hence, Participants shall ensure that the email recipients have been configured to receive those alerts sent with the hostname: @ptrm.hkex.com.hk.

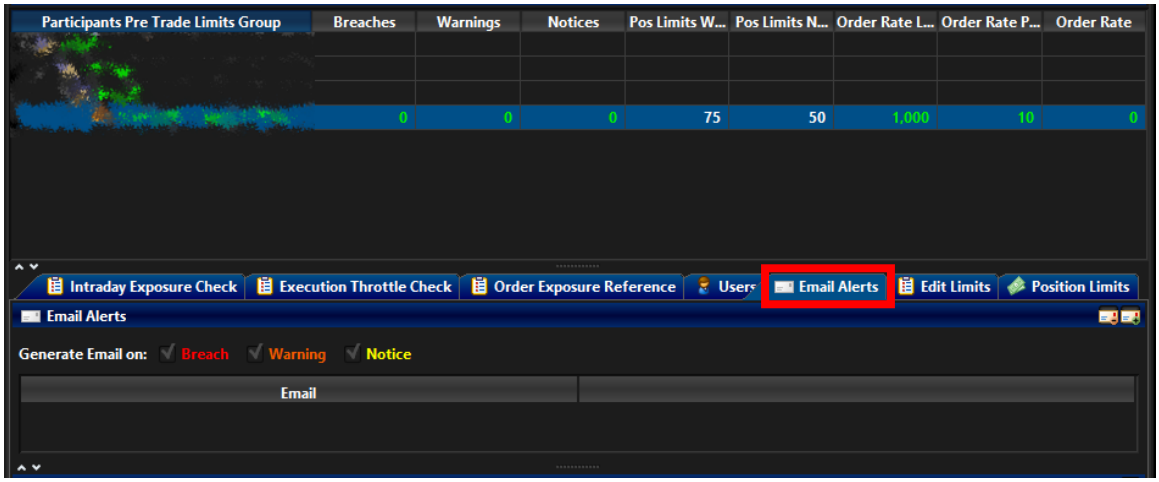
Note:

1) Email notification can only be set up by Risk Limit Managers. Trading Units will **not** be able to set up email notifications by themselves.
2) Participants are recommended to set one email address per PTLG. This email address is best to be an email group that contains all required email recipients.
3) After setting and saving the email alerts, all members of the email alert group will receive notifications when the selected events occur.
4) For receiving notification message, HKATS Risk Functions allows email address to be added in real time. However, deletion of email addresses will be effective next day.

2.5.1 Define a new Email Notification

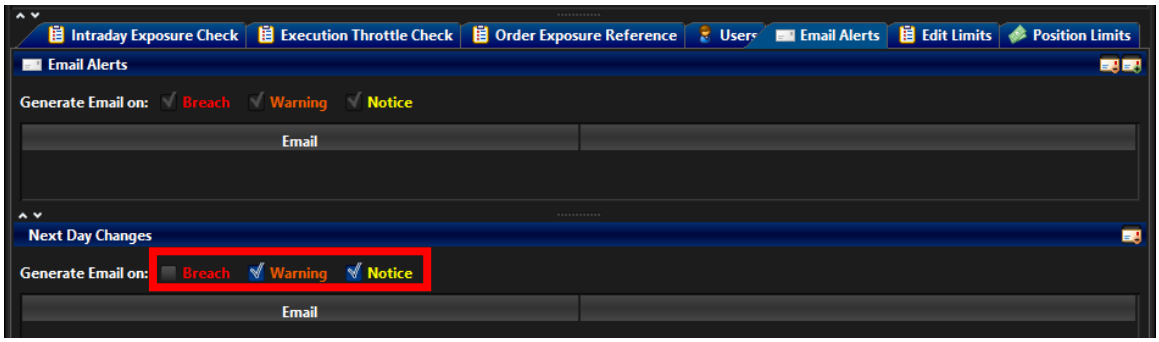
To add an email notification on a PTLG, complete the following steps:

Step 1: Select the PTLG for which you want to define new alerts and click the “Email Alerts” tab.

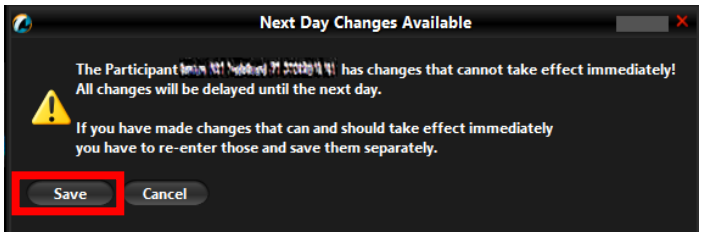


Step 2: Select or deselect the following check boxes to turn them on or off.

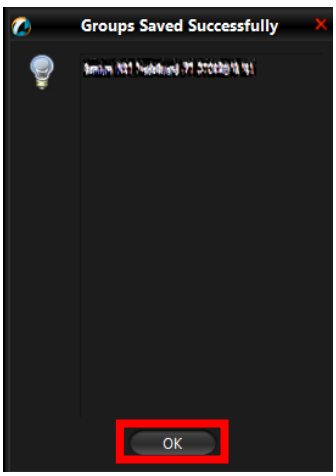
- Breach: Send an email when the PTLG breaches a set limit.
- Warning: Send an email when the PTLG reaches the warning level of a set limit.
- Notice: Send an email when the PTLG reaches the notice level of a set limit.



Step 3: Click “Save” in the PTLG Panel to save changes.



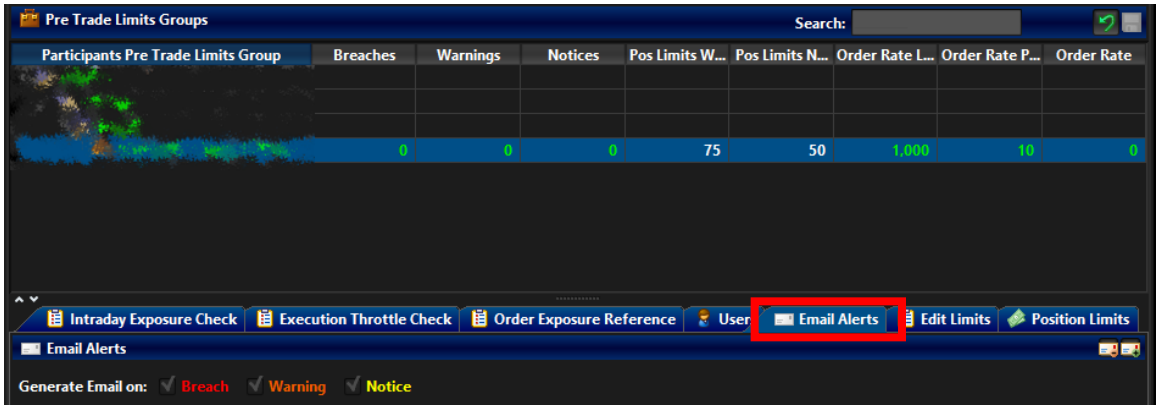
Step 4: Click “Save” again on the Next Day Changes window. The Save Successful dialogue box appears confirming your changes for the PTLG(s).



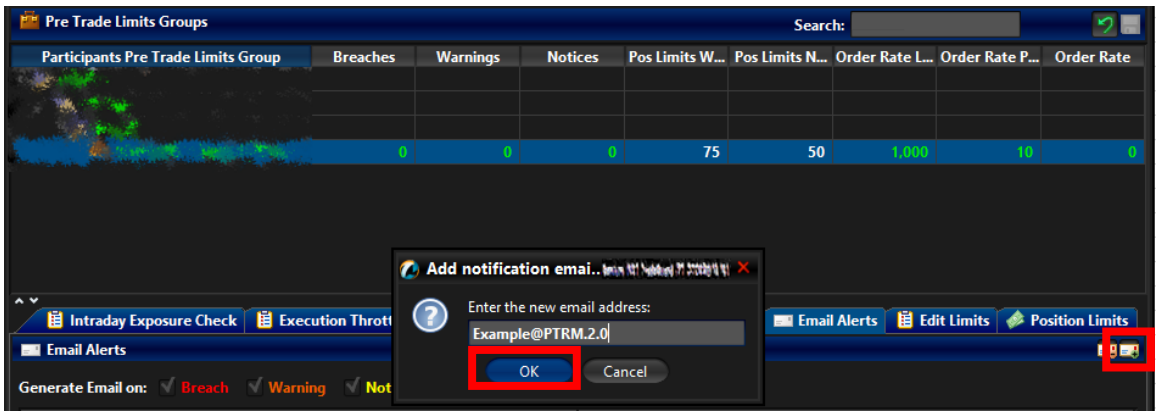
2.5.2 Adding New Email Alert Recipients

In order to add new email alert recipients, complete the following steps:

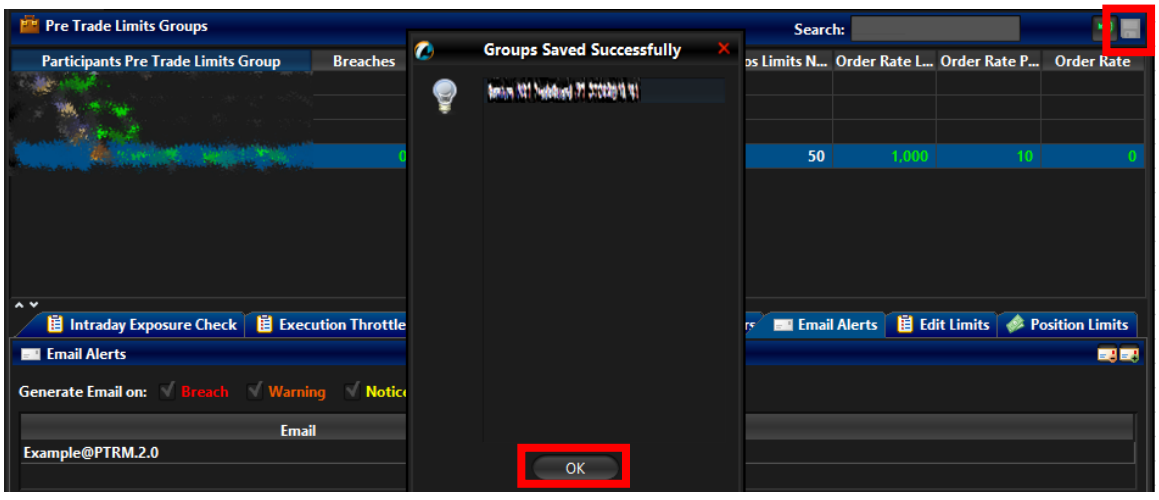
Step 1: Click the “Email Alerts” tab on the PTLG for which you want to define new email alerts..



Step 2: Click the “Add New Email” button and enter the new email address. Click “OK” to confirm.



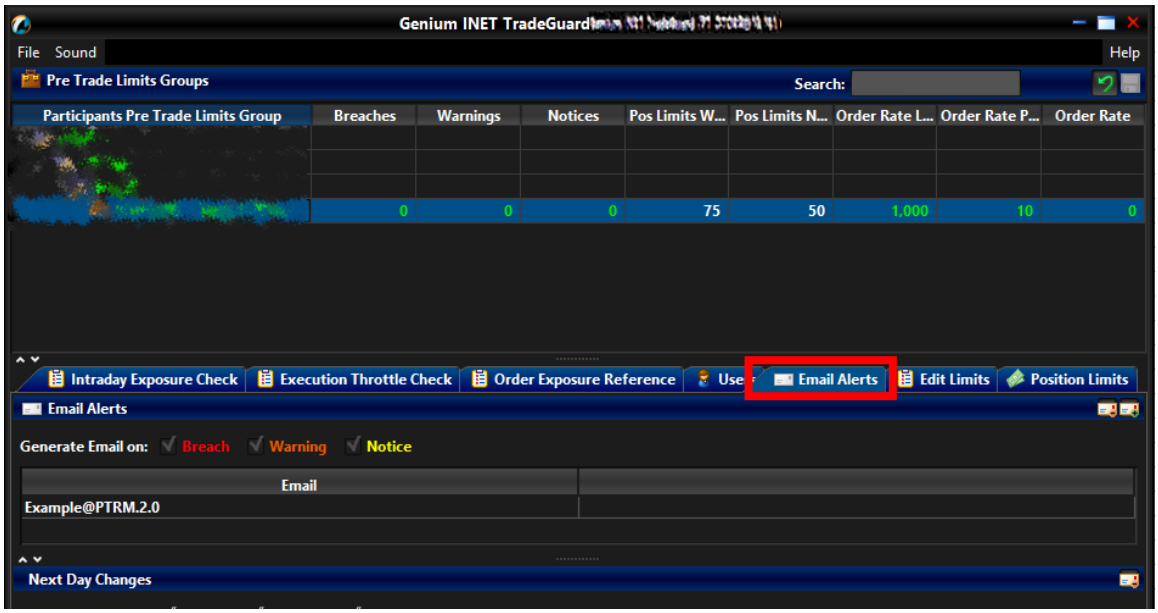
Step 3: Click “Save” in the PTLGs panel to save changes. The Save Successful dialogue box appears confirming the changes have been sent to the database.



2.5.3 Deleting Email Alert Recipients

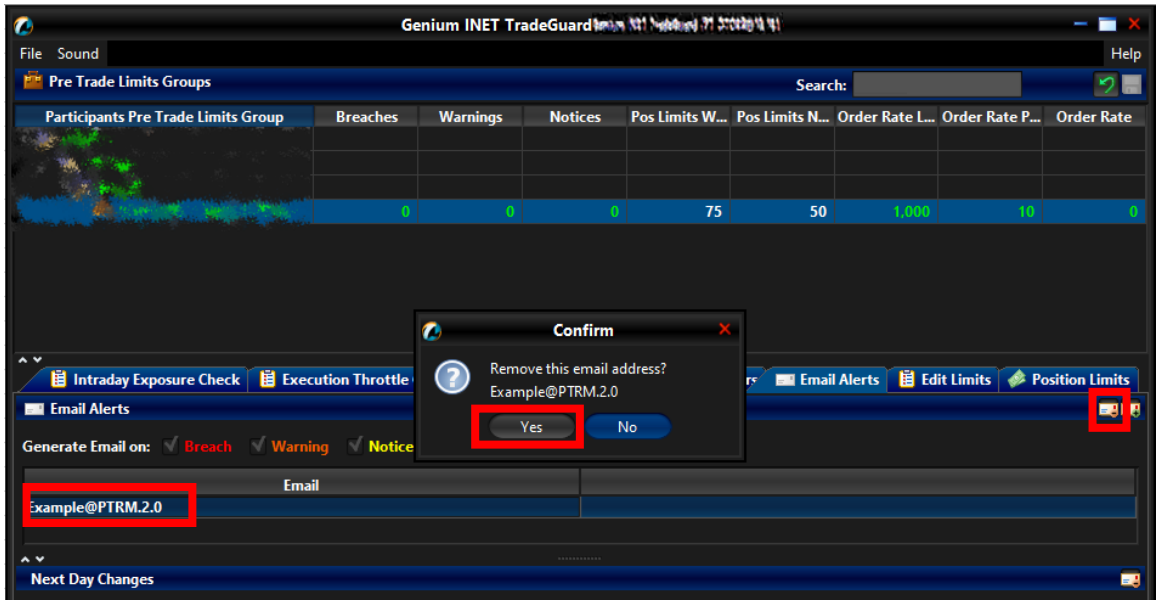
In order to remove an email address from the list, complete the following steps:

Step 1: Select the PTLG for which you want to remove an email alert recipient. Click the “Email Alerts” tab.



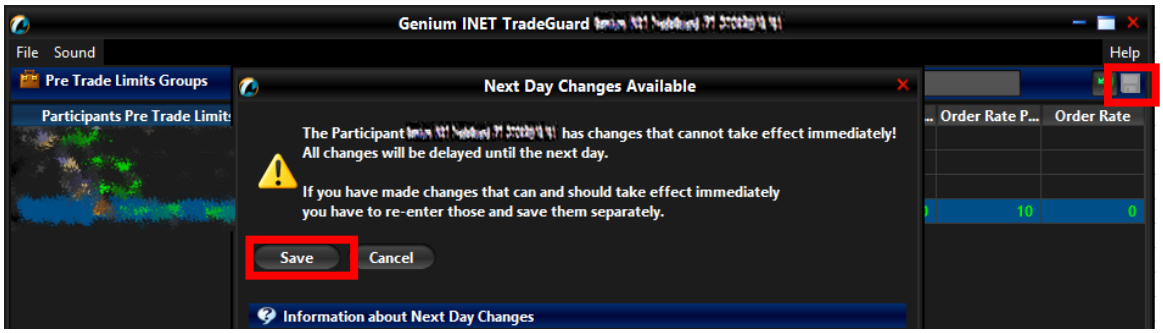
Step 2: Select the unwanted email recipient(s) and click the “Remove Email” button

Step 3: Click “Yes” to confirm the deletion



Step 4: Click “Save” in the PTLGs panel to save changes.

Step 5: Confirm the changes by clicking “Save” on The Next Day Changes confirmation window. The Save Successful dialogue box appears confirming the changes have been sent to the database.



2.5.4 Editing Email Alert Recipients

To modify the notification email addresses of a PTLG, delete the existing one (Section 2.5.3) and add a new one (Section 2.5.2).

Please refer to Appendix B for Email Notification templates.

2.6 Setting Alert for HKATS Risk Functions

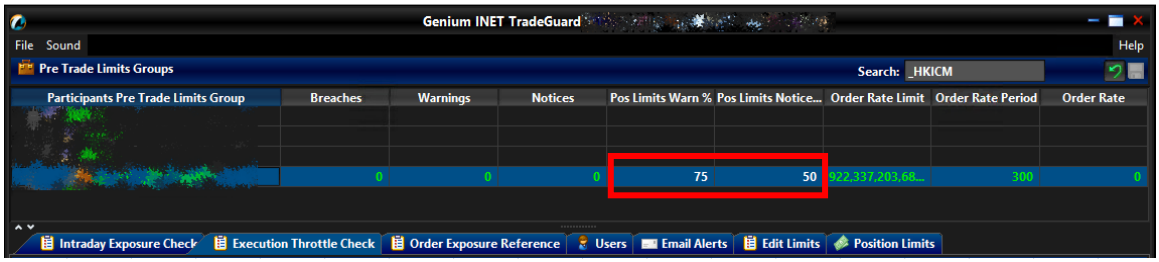
3 levels of alerts can be set at HKATS Risk Functions, namely, notice, warning and breach represented by different colours:

1. Green: The value of the PTLG is currently below the notice threshold.
2. Yellow: The value of the PTLG has exceeded the notice level but below the warning level.
3. Orange: The value of the PTLG has exceeded the warning level but below the breach level.
4. Red: The PTLG has breached risk limit(s).
   (Maximum Order Rate Limits / Execution Throttle Limits / Intraday Position Limits / Maximum Intraday Exposure Limits)

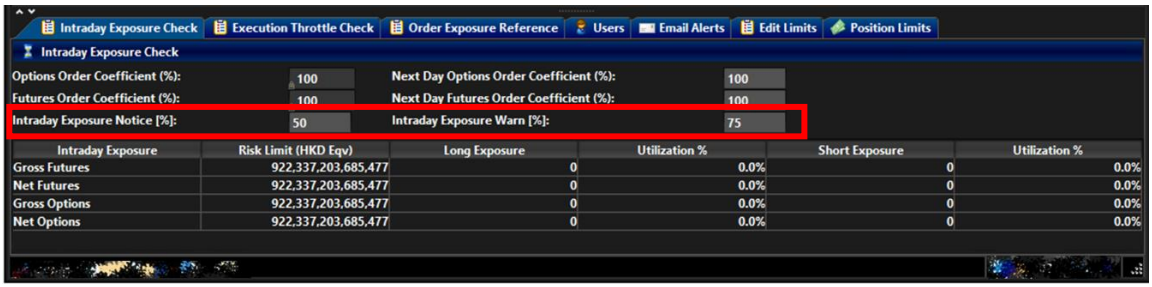
2.6.1 Setting Warning and Notice Levels

GUI Users are able to configure warning and notice levels for each PTLG independently. There are three sets of Warning and Notice percentages as shown below.

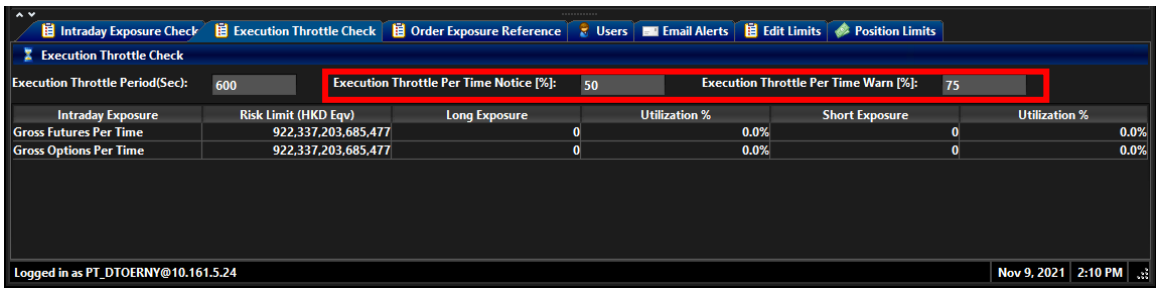
Intraday Position Limits



Maximum Intraday Exposure Check



Execution Throttle Limits

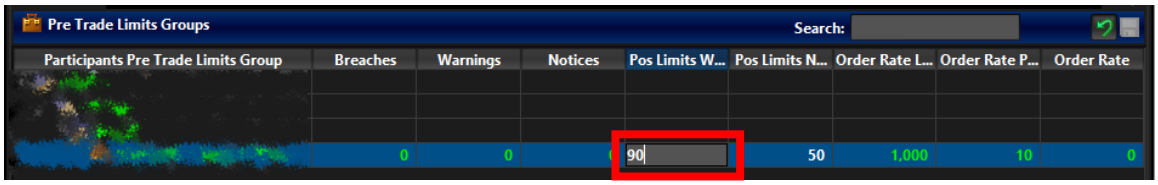


Depending on the GUI and PTLG settings, audible, visual or email alerts will be sent out when the utilization crossed the levels. Breach alerts will be sent out when utilization being over 100% of the limit set. The corresponding PTLG ***/*** Tradable will be subsequently blocked. In order to set warning and notice alerts, complete the following steps:

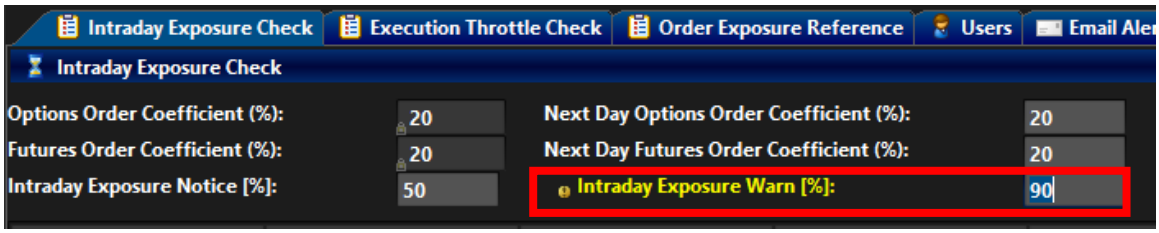
Step 1: Select the corresponding “Warn %” or “Notice %” field of a PTLG.

Step 2: Enter a new value for the corresponding “Warn %” or “Notice %”.

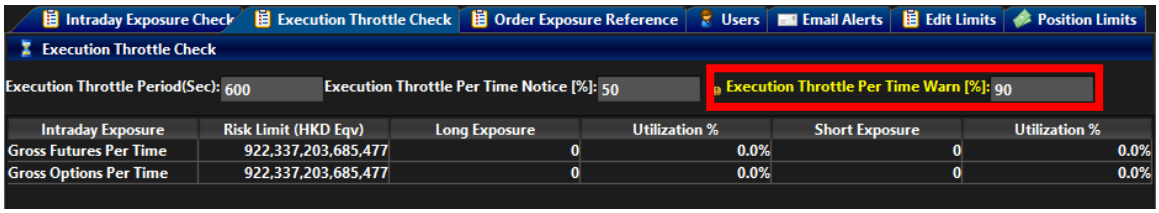
Intraday Position Limits



Maximum Intraday Exposure Check



Execution Throttle Limits



Step 3: Click “Save” in the PTLGs panel to save changes.

Step 4: The Save Successful dialogue box appears confirming your changes for the group or groups you have made. Click “OK” to close the confirmation window.

Note:

1) Notice and Warning levels have to be set as an integer. They must be set between 0 and 99 (both side inclusive). Notice level cannot be set higher than the warning level. Setting a level into 0 will disable the alert.

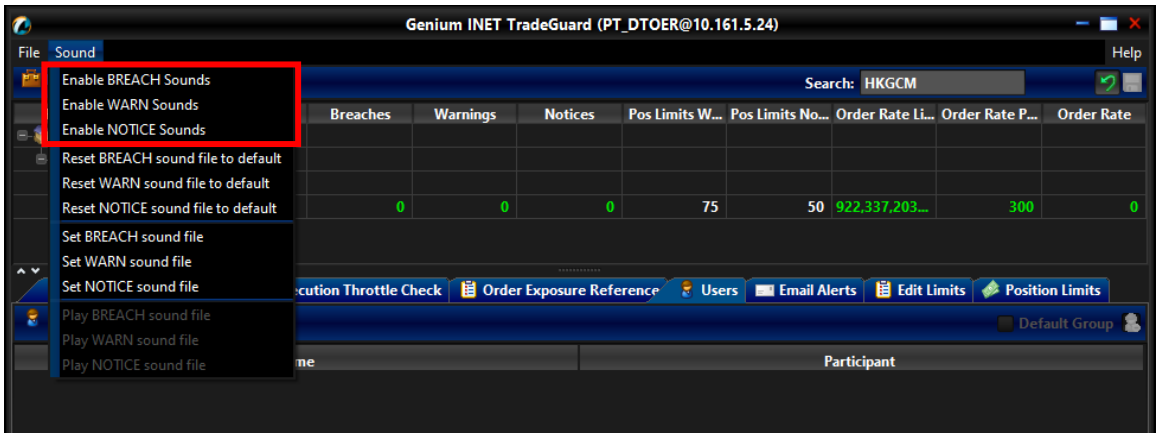
2) When exposure of Intraday Position Limits, Maximum Intraday Exposure Limits and Execution Throttle Limits fluctuates around a Notice or Warning threshold, only a single email will be sent per threshold per limit per PTLG UNTIL:
   a. A breach occurs and an unblock action is performed; or
   b. The limit is changed

2.6.2 Setting Audible Alerts

In addition, HKATS Risk Functions can also be set to play notification sounds (audible alerts) when notice, warning or breach events occur.

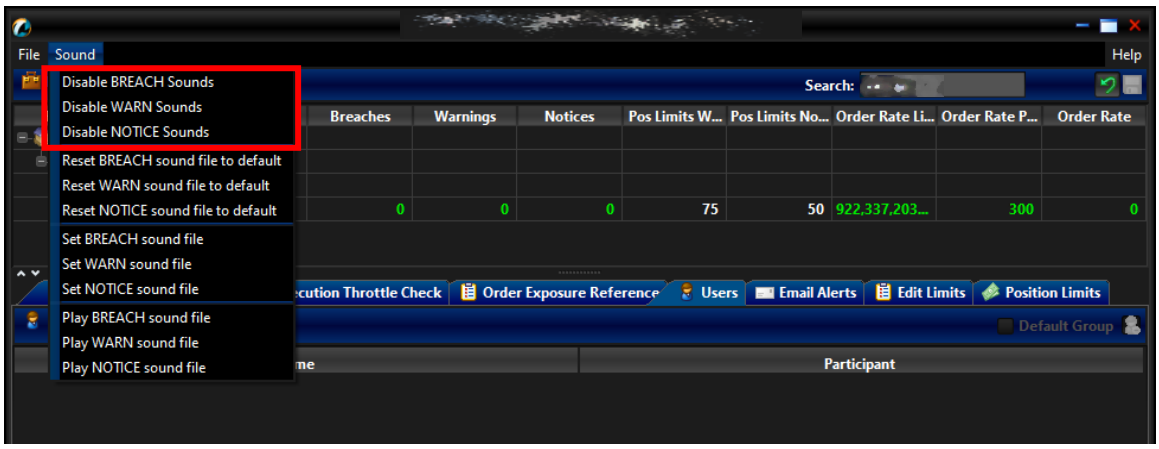
Enable audible alerts for different events

Click the “Sound” menu and choose the type of event that you wish to produce a sound. The enabled event type will then play a sound alert when it occurs.



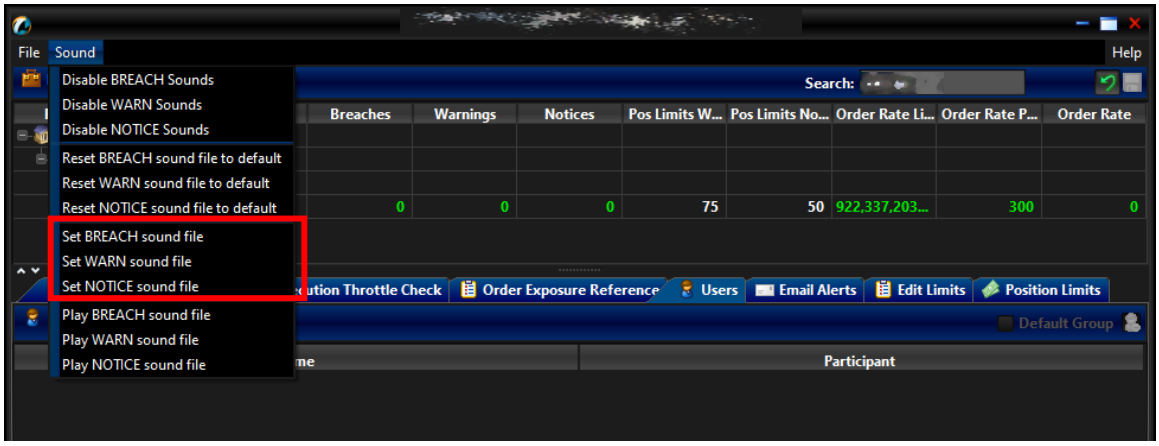
Disable audible alerts for different events

Click the “Sound” menu and choose the type of event that you wish to stop producing a sound. The sound alert for the selected event type will then be disabled when the particular event type occurs



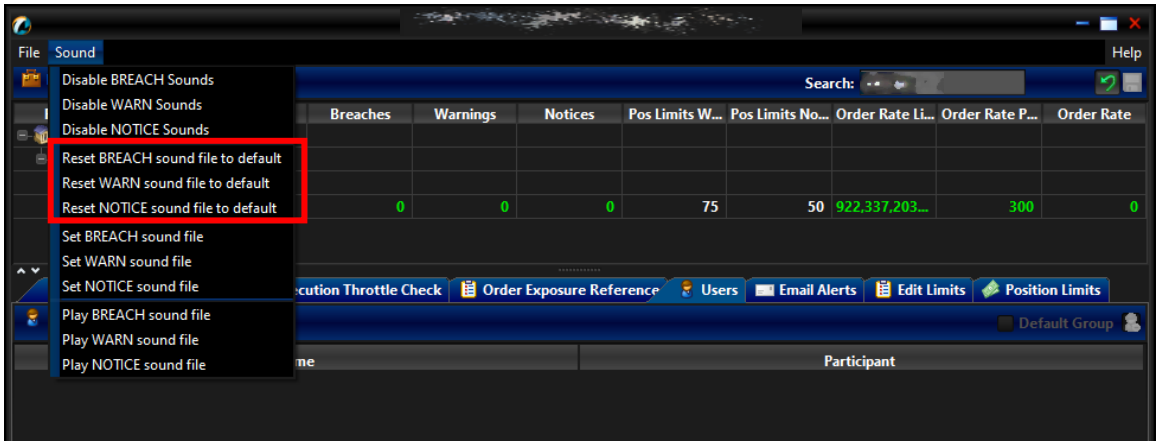
Customize audible alerts for different events

Click the “Sound” menu and choose the event type that you wish to set a custom sound for. On the popup windows, click “Open” after choosing a .wav sound file from your computer. The custom sound file will be played when the selected event occurs.



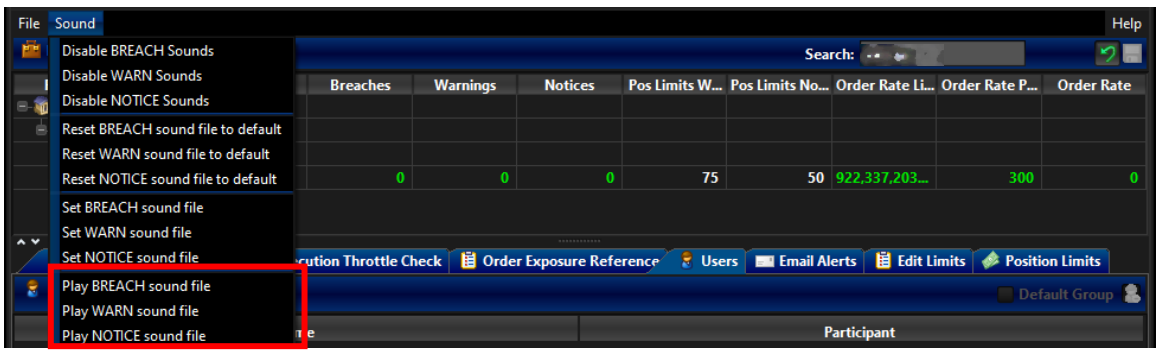
Reset Audible Alerts

Click the “Sound” menu and choose the audible alert you wish to reset. The sound used for the event will be reset to the application default.



Testing Audible Alerts

Click the “Sound” menu and choose the particular audible alert to play. The current deployed sound file will be played.



2.7 Points to Note in PTLG management

1. Once a PTLG has been established, the system will not allow any alternation of the PTLG name. The only way to rename the PTLG is to delete then add a new one.

2. The maximum number of PTLGs per EP Mnemonic is limited by the number of the EP's Trading IDs. As required by the Exchange from time to time, the number of PTLGs allowed per EP Mnemonic is described below:

No. of Trading IDs	1 - 10	11 - 20	21 - 50	51+
No of PTLGs allowed to create per EP Mnemonic	4	8	14	20

3. Base PTLG cannot be removed nor created by Risk Limit Managers.

4. When creating a new PTLG, at least one Trading ID has to be assigned to the group.

5. Participants are advised to make changes on PTLGs during non-market hours.

6. For Next Day Changes, participants should reconcile the correctness the next day after the changes become effective.

7. Non-Base PTLG cannot be deleted on the same day after applying next day changes.

8. Default values at PTLG creation will be always at their maximum values.

Intraday and Next Day Changes for PTLG Management

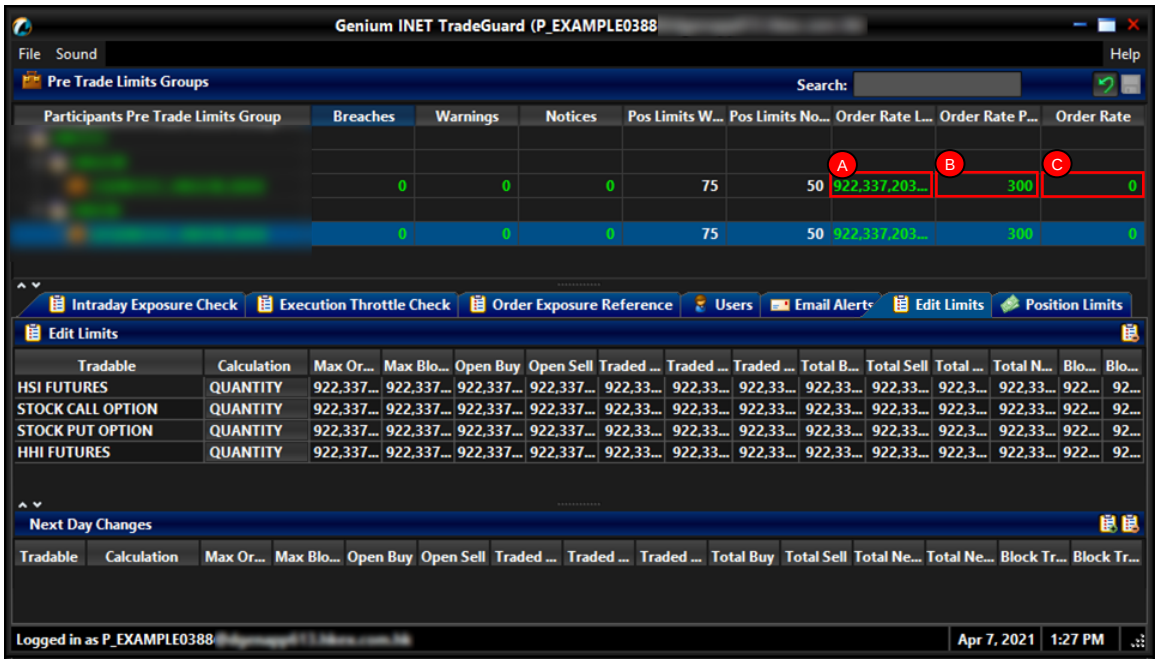
Action	Intraday Changes	Next Day Changes
Add / Delete a PTLG		✓
Add / Remove a Trading ID to / from an existing PTLG		✓
Add / Remove a Tradable to / from an existing PTLG		✓
Amend limits on an existing PTLG *(Except for Order Coefficient – Refer to Maximum Intraday Exposure Section)*	✓	
Add a notification email address to an existing PTLG	✓	
Add a notification email address to a newly created PTLG		✓
Remove a notification email recipient		✓
Setup Audible Alerts	✓	

9. After clicking the save button, there might be a slight time lag before the changes take effect. Therefore, block, unblock, stop or unstop functions corresponding to the new risk limits cannot be executed until the changes are effective in the system.

Risk Limit Settings

3.1 Maximum Order Rate Limit

Maximum Order Rate Limit allows Risk Limit Managers to restrict the number of new orders being sent to HKATS within a specific time interval, defined as the order rate period (in seconds). The Order Rate limit is aggregated across all Trading IDs in the same PTLG.



Icon	Command	
A	*Order Rate Limit:*	It can be set between 0 and 922,337,203,685,447, both sides inclusive and must be an integer. It represents the number of orders allowed to be sent within the Order Rate Period. *The PTLG will be blocked immediately if the Order Rate Limit is set as 0*
B	*Order Rate Period:*	It can be set between 1 to 300 seconds and must be an integer
C	*Order Rate:*	An order rate **counter** within the set period.

Maximum Order Rate Limits is performed "**at-trade**" at PTLG level, meaning that the risk check is performed only after the order has been submitted to the order book. HKATS Risk Functions servers would detect a breach only if the order rate exceeds the order rate limit, e.g. 11 > 10, and would reject subsequent orders after the corresponding PTLG being blocked.

3.1.1 Block Trade Exposure Handling

Block Trade submission (T4/MO75, T1/MO76 and T2/MO77) will not be counted in order rate.

Rejection on block trade submission (T4/MO75, T1/MO76 and T2/MO77) will apply to all PTLGs of the EP Mnemonic when the Base PTLG of that EP Mnemonic has breached the order rate, but orders and quotes (MO31, MO33, MO37, MO93, MO96 and MO99) are only rejected if the Trading IDs are assigned to the blocked Base PTLG.

3.1.2 Counting and rejection mechanism for Maximum Order Rate Limit

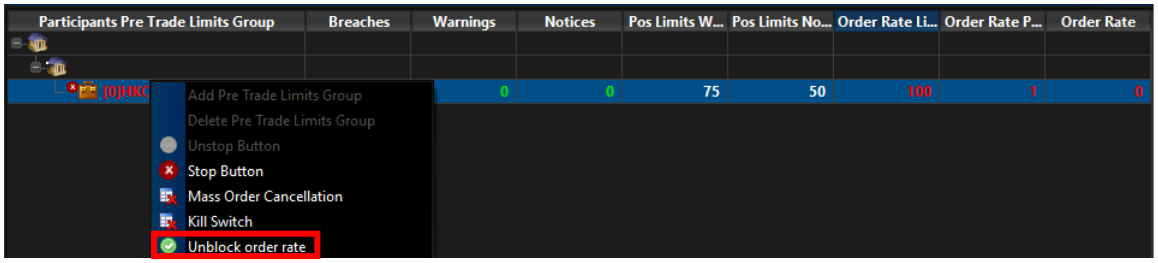
Maximum Order Rate Limits are at PTLG level. It aggregates all orders and two-sided quotes across all instrument and combo series for a PTLG. The counting and rejection mechanism are summarized in the table below:

	Count in Order Rate	Reject on breach	Reject at Base PTLG Breach
MO4 (Order Deletion)			
MO31 (Normal Orders)	✓	✓	
MO33 (Order Alteration)		✓	
MO37 (One side / Two sided Quotes)	✓	✓	
MO74 (Block Trade – Pending T4 Deletion)			
MO75 (Block Trade – T4)		✓	✓
MO76 (Block Trade – T1)		✓	✓
MO77 (Block Trade – T2)		✓	✓
MO93 (Mass Quotes)		✓	
MO96 (Mass Quotes)		✓	
MO97 (Indicative Quotes)			
MO99 (Order Activation)		✓	

The PTLG will be blocked upon a limit breach by Maximum Order Rate Limit. Subsequent orders by the OAPI / HKATS Online Sessions assigned to the PTLG will be rejected, and the trading session will receive an OAPI return code for the order rejection:

(-850004) "User has breached Maximum Order Rate Limit"

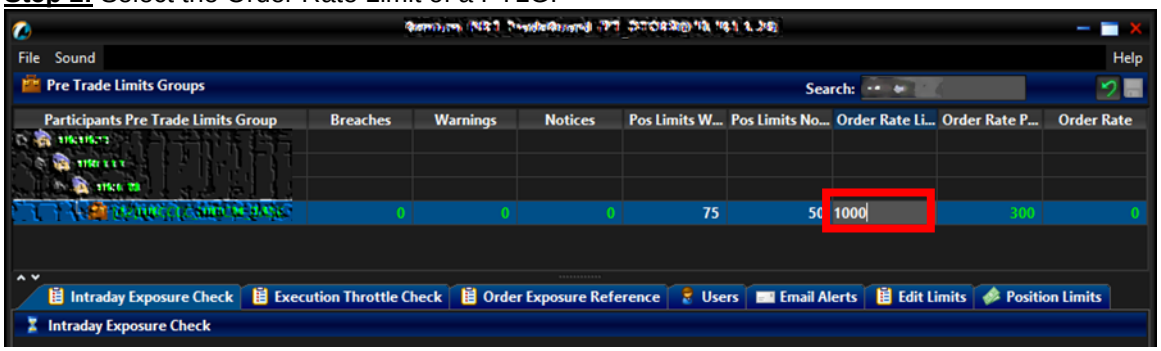
To unblock, the user has to make an adjustment on the Order Rate limit value or wait until the relevant limit value > the relevant Order Rate exposure value as the condition for unblock. "Unblock order rate" in the menu for Emergency Buttons will be undimmed once the condition for unblock is fulfilled.



3.1.3 Changing Maximum Order Rate Limits & Order Rate Period

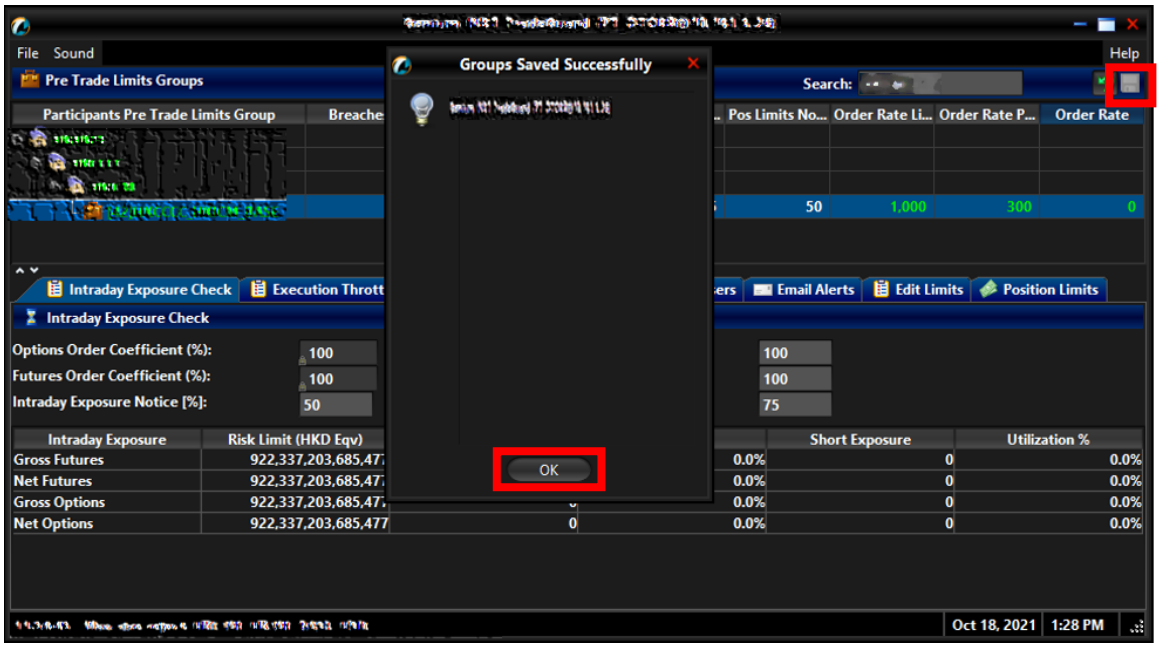
To set Maximum Order Rate Limits on a PTLG, complete the following steps:

Step 1: Select the Order Rate Limit of a PTLG.



Step 2: Enter a new value for the column and click “Save” in the PTLGs panel to save changes.

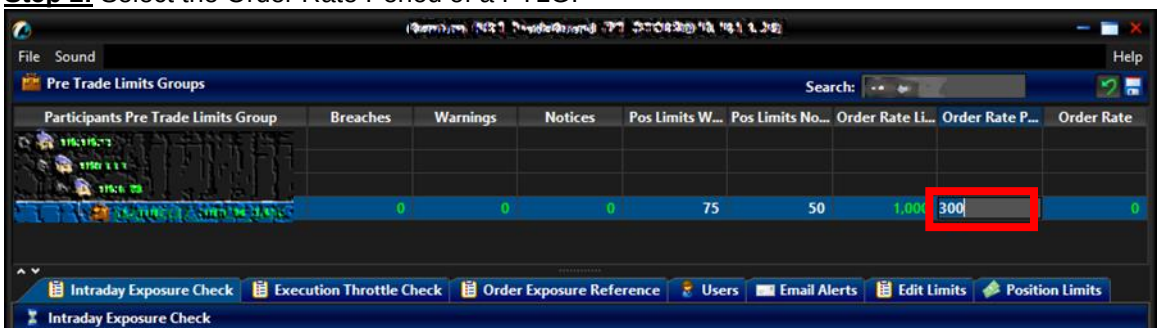
Step 4: The Save Successful dialogue box appears confirming your changes for the group or groups you have made. Click “OK” to close the confirmation window.



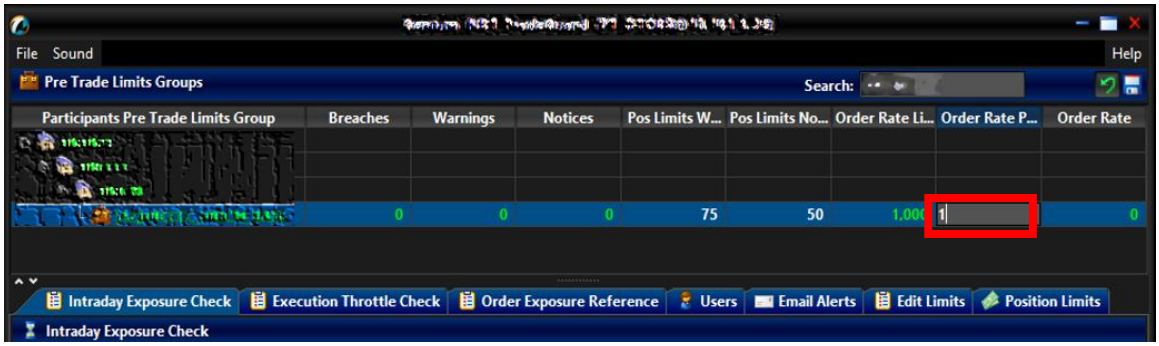
3.1.4 Changing Order Rate Period

To set Order Rate Period on a PTLG, complete the following steps:

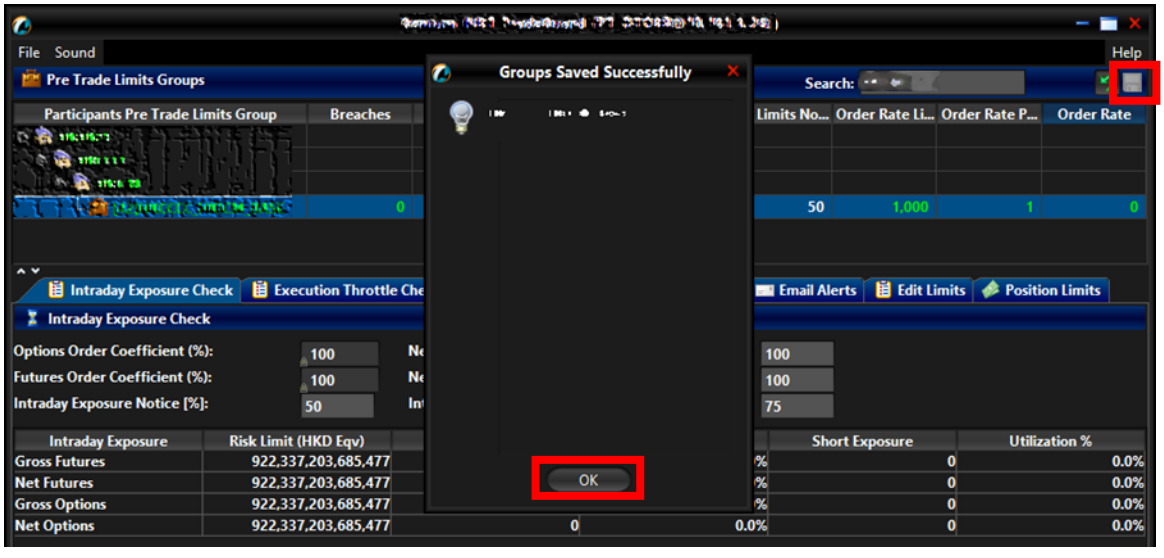
Step 1: Select the Order Rate Period of a PTLG.



Step 2: Enter a new value for the column



Step 3: Click “Save” in the PTLGs panel to save changes. The Save Successful dialogue box appears confirming your changes for the group or groups you have made. Click “OK” to close the confirmation window.



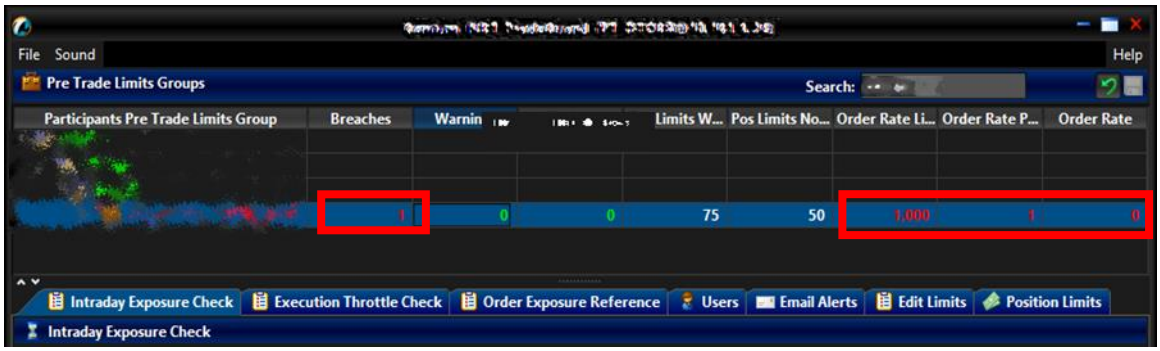
The Order Rate counter will be reset after the changed Order Rate Period becomes effective.

3.1.5 Unblocking an Order Rate Breach

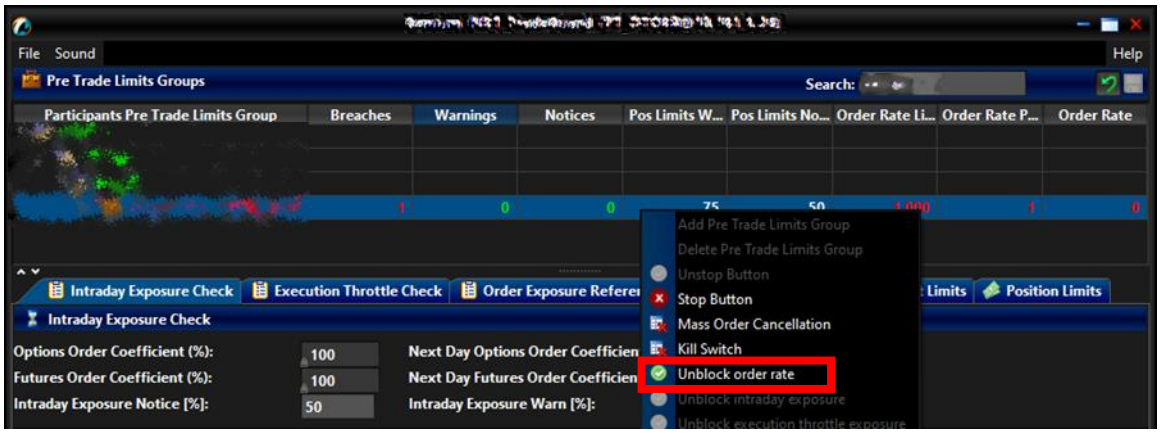
When a PTLG breaches the Order Rate Limit, Trading IDs under the blocked PTLG will not be able to submit any orders/quotes/Trade Reports subsequently. A manual unblock action will then be required to lift the breach restriction

To unblock an Order Rate breach, complete the following steps

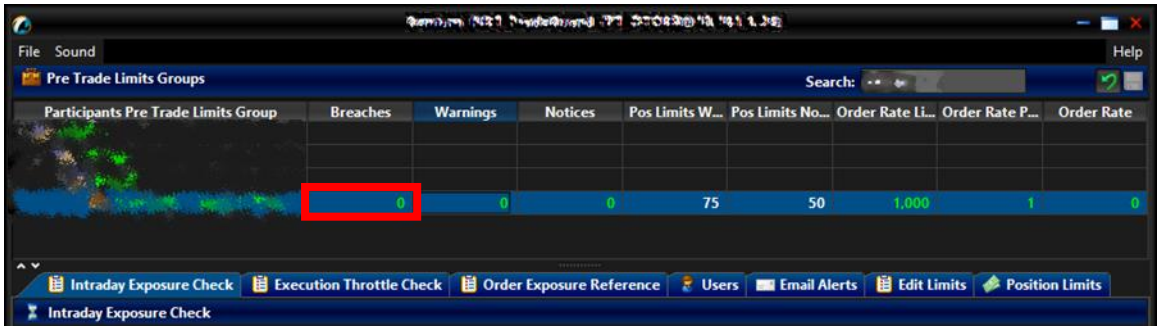
Step 1: Select a breached PTLG in the PTLGs Panel



Step 2: Right click and the select "Unblock order rate" from the Menu (there will be no confirmation window for this action



Step 3: The breach will then be lifted. The PTLG will be allowed to trade as usual



3.1.6 Points to Note for Maximum Order Rate Limit

1. Maximum Order Rate Limits allows Risk Limit Managers to restrict the number of new orders being sent to HKATS within a specific time interval, between 1 to 300 seconds.

2. At-trade risk checks performed asynchronously to the flow of orders. A breach may occur and still allow subsequent orders into the order book, and possibly matched, before the breach is enforced by a block.

3. The PTLG will be blocked immediately if the Order Rate Limit is set to 0

4. All the blocked PTLGs will be unblocked after HKATS day end batch. If any one of the limits is set as 0, such PTLG will be blocked **immediately** at the start of the day.

5. The PTLG cannot be unblocked when the value at the Order Rate counter is still bigger than the pre-set Order Rate Limit. To unblock:

    a. Raise the value of Order Rate Limit to a new one that is bigger than the value at the Order Rate counter, or;
    b. Enter the value for order Rate Period to reset the Order Rate Counter
    c. Click “Save” to make the above changes effective immediately

6. Entering a new value for Order Rate Period will reset the Order Rate counter.

7. The PTLG cannot be unblocked when the value at the Order Rate counter is still bigger than the pre-set Order Rate Limit. Refer to Section 3.1.5 for unblocking an Order Rate Breach procedure.

8. Order deletion is allowed when the PTLG is blocked by Maximum Order Rate Limit.

9. For two-sided quotes, MO37, the order rate check will count each pair of MO37 as 2 orders.

10. For Mass quotes, MO93 and MO96, the order rate check will not count the relevant orders.

11. FoK/FaK will only be counted if the order is executed.

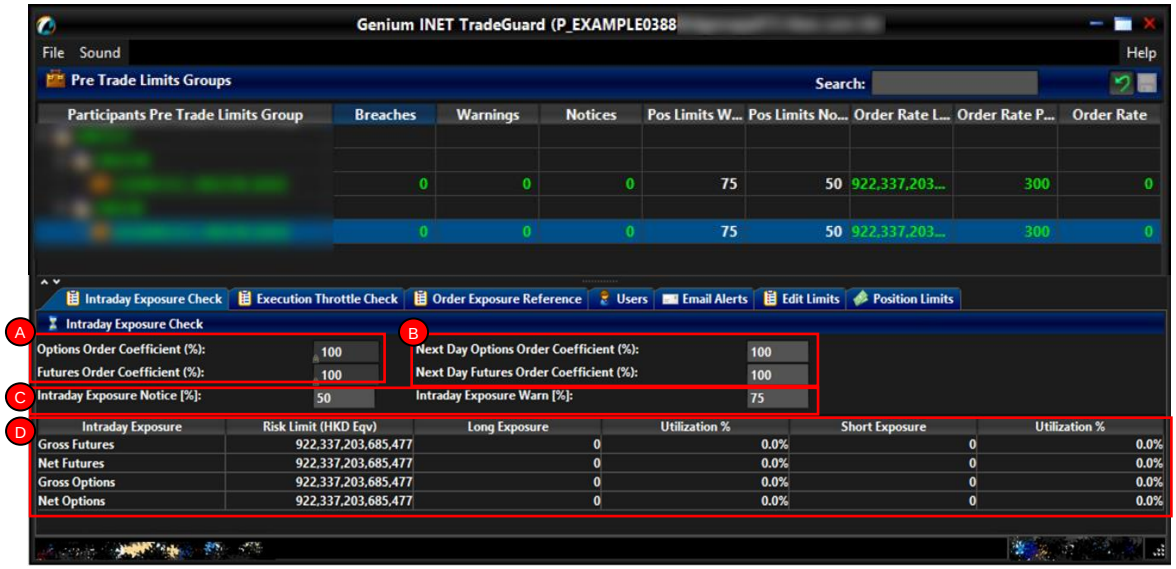
12. Combo orders will be counted as single-side order (MO31).

13. If Trading ID 2 of PTLG B amends (MO33) an order of Trading ID 1 of PTLG A, there will be an order rate counts on PTLG B.

14. Orders activated by MO99 will be sent to HKATS as MO31. Therefore, the orders activated in this scenario will also be counted in the order rate.

3.2 Maximum Intraday Exposure Check

Maximum Intraday Exposure sets a limit on the risk exposure associated with a specific PTLG. The exposure values are reset to zero for all 8 risk counters at start of each trading day (unless there are outstanding GTC/GTD orders) and exposure will be accumulated at its risk counters for the whole business day. Similar to Maximum Order Rate Limit, they are also performed “at trade”.



Icon	Command	
A	*Option / Futures Order Coefficient*	*They show the current % consumption of UMR being counted as Intraday Exposure consumption. per outstanding order for futures and options*
B	*Next Day Option / Futures Order Coefficient*	*They show the next day % consumption of UMR per order for futures and options.*
C	*Intraday Exposure Notice (%) / Warn (%)*	*The current notice / warning level for Intraday Exposure Checks.*
D	*Intraday Exposure Limit Table*	*1) Column “Risk Limit (HKD Eqv)” shows the current limit setup for each risk checks.* *2) Column “Long Exposure” shows the current utilization for each risk checks on Long Side.* *3) Column “Short Exposure” shows the current utilization for each risk checks on Short Side.* *4) Column “Utilization %” shows the current utilization for each risk checks in percentage.* *The PTLG will be blocked immediately if setting the limit(s) into 0.*

Maximum Intraday Exposure Check is performed “**at-trade**” at PTLG level, meaning that the risk check is performed only after the order has been submitted to the order book. PTRM servers would detect a breach only if the exposure exceeds the corresponding limit, e.g. 10,000 > 9,000, so PTRM could still allow a large order right before the breach limit.

3.2.1 Block Trade Exposure Handling

All Intraday Exposure of the Block Trades of an EP Mnemonic, irrespective of the entering Trading IDs and associated PTLG will only be counted into the corresponding Base PTLG of that EP Mnemonic.

Therefore, all PTLGs of that EP Mnemonic will no longer be able to enter Block Trades (T4/MO75, T1/MO76, T2/MO77) when the Base PTLG has breached any one of the Intraday Exposure Limits. However, outstanding T4 Trade Report would still be matched with other party.

In this case, Trading IDs that are in the Base PTLG will be unable to enter orders and quotes (MO31, MO33, MO37, MO93 and MO96), as they are restricted by the Intraday Exposure Limit breach.

On the other hand, Trading IDs that are not in the Base PTLG (in other PTLGs created by the Risk Limit Manager) will still be able to enter orders and quotes except Block Trades.

3.2.2 Formulas for the 8 Maximum Intraday Exposure risk counters:

The value of risk exposure per trade will be calculated by multiplying the order quantity with the Unit Margin Rate (UMR)[5] as determined by the Clearing Houses from time to time at the start of the day for each instrument, while the value of risk exposure per order will be calculated by multiplying the order quantity to both the corresponding UMR and Order Coefficient[6].

Exposure Calculation Examples will be provided in Appendix H –Exposure Calculation Examples for Maximum Intraday Exposure Limits.

Intraday Exposure Counters	Formula
Gross Futures Long	(Traded Futures Long Quantity x Long UMR) + (Open Futures Long Quantity x Long UMR x Futures Coefficient)
Gross Futures Short	(Traded Futures Short Quantity x Short UMR) + (Open Futures Short Quantity x Short UMR x Futures Coefficient)
Net Futures Long	(Traded Futures Long Quantity x Long UMR) – (Traded Futures Short Quantity x Short UMR) + (Open Futures Long Quantity x Long UMR x Futures Coefficient)
Net Futures Short	(Traded Futures Short Quantity x Short UMR) – (Traded Futures Long Quantity x Long UMR) + (Open Futures Short Quantity x Short UMR x Futures Coefficient)
Gross Options Long	(Bought Calls Quantity x Long UMR) + (Sold Puts Quantity x Short UMR) + (Open Buy Calls Quantity x Long UMR x Options Coefficient) + (Open Sell Puts Quantity x Short UMR x Options Coefficient)
Gross Options Short	(Sold Calls Quantity x Short UMR) + (Bought Puts Quantity x Long UMR) + (Open Sell Calls Quantity x Short UMR x Options Coefficient) + (Open Buy Puts Quantity x Long UMR x Coefficient Options)
Net Options Long	(Bought Calls Quantity x Long UMR) – (Sold Calls Quantity x Short UMR) + (Sold Puts Quantity x Short UMR) – (Bought Puts Quantity x Long UMR) + (Open Buy Calls Quantity x Long UMR x Options Coefficient) + (Open Sell Puts Quantity x Short UMR x Options Coefficient)
Net Options Short	(Sold Calls Quantity x Short UMR) – (Bought Calls Quantity x Long UMR) + (Bought Puts Quantity x Long UMR) – (Sold Puts Quantity x Short UMR) + (Open Sell Calls Quantity x Short UMR x Options Coefficient) + (Open Buy Puts Quantity x Long UMR x Options Coefficient)

[5] The UMRs for long/short on the same product series could be different (Please refer to Appendix G for more explanation on UMR).

[6] The Order Coefficient is set by the Risk Limit Managers. It determines the % consumption of UMR per order. Separate coefficients can be set for futures and options.

3.2.3 Counting and rejection mechanism for Maximum Intraday Exposure Limits

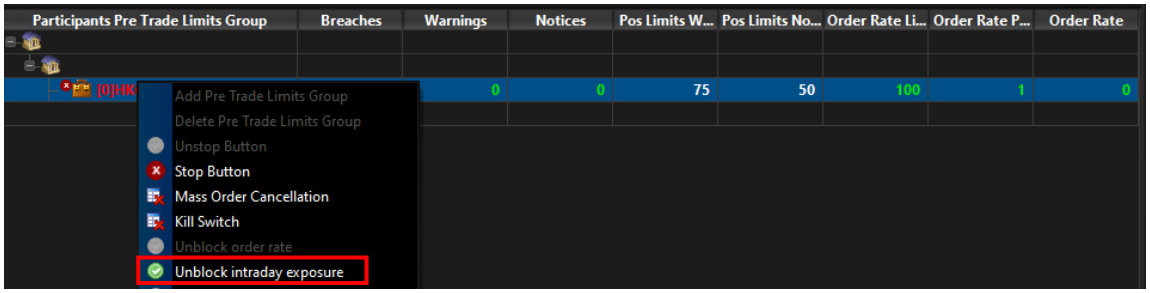
Maximum Intraday Exposure Limits are at PTLG level. It aggregates the margin rate of all orders and two-sided quotes across all instrument and combo series for a PTLG. The counting and rejection mechanism are summarized in the table below.

	Count in Exposure	Reject on breach	Reject at Base PTLG Breach
MO4 (Order Deletion)	✓		
MO31 (Normal Orders)	✓	✓	
MO33 (Order Amendment)	✓	✓	
MO37 (One Sided / Two Sided Quotes)	✓	✓	
MO74 (Block Trade – Pending T4 Deletion)			
MO75 (Block Trade – T4)	✓ (Counted when matched)	✓	✓
MO76 (Block Trade – T1)	✓	✓	✓
MO77 (Block Trade – T2)	✓	✓	✓
MO93 (Mass Quotes)	✓	✓	
MO96 (Mass Quotes)	✓	✓	
MO97 (Indicative Quotes)			
MO99 (Order Activation)	✓	✓	

The PTLG will be blocked upon a limit breach by any 1 of the 8 relevant Maximum Intraday Exposure Limits. Subsequent orders by the OAPI / HKATS Online Sessions assigned to the PTLG will be rejected, and the session will receive an OAPI return code for the order rejection:

(-850006) "User has breached Maximum Intraday Exposure Limit"

To unblock, the user has to make an adjustment on the relevant limit value or lower the relevant intraday exposure value as the condition for unblock. "Unblock intraday exposure" in the menu for Emergency Buttons will be undimmed once the condition for unblock is fulfilled. For limit amendments, please refer to the Section 3.2.5 for details.

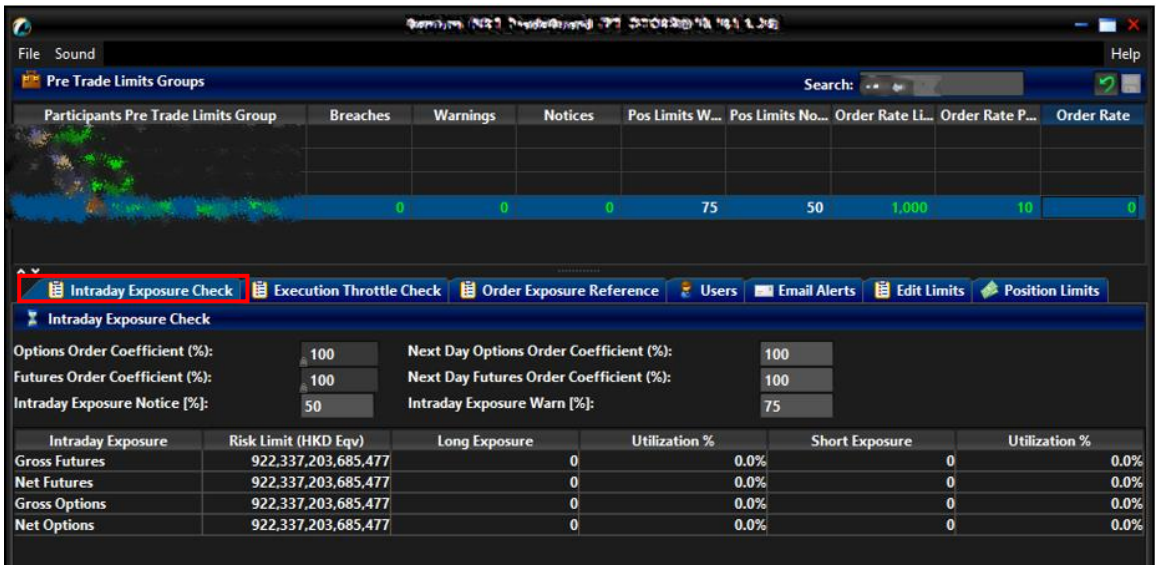


3.2.4 Changing Order Coefficients

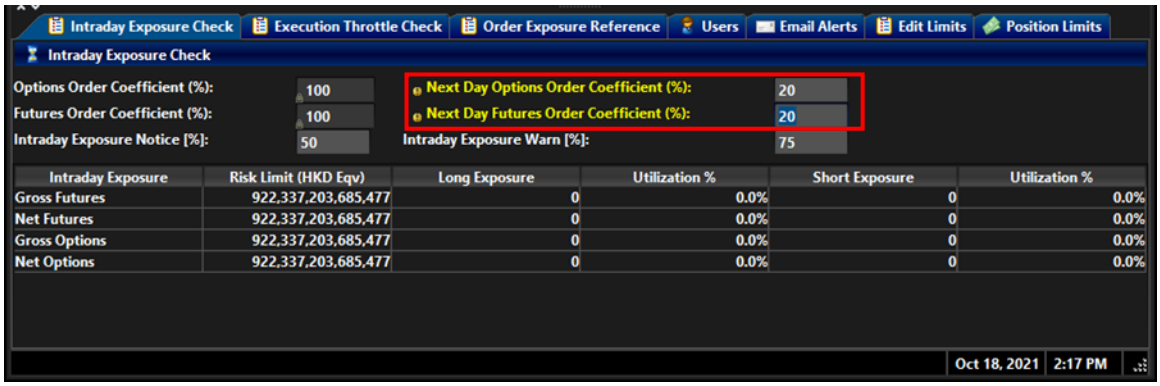
The Order Coefficient controls the % UMR being counted as Intraday Exposure consumption and can be set separately for each PTLG.

To change Order Coefficients, follow the steps below:

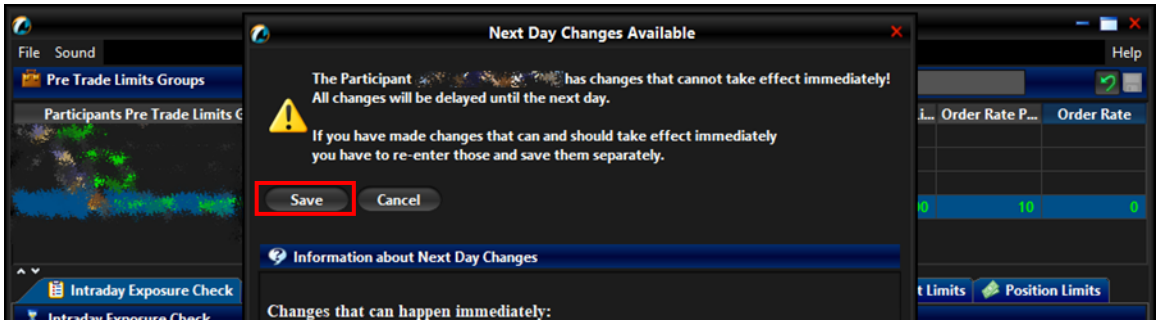
Step 1: Select a PTLG, then choose “Intraday Exposure Check” tab.



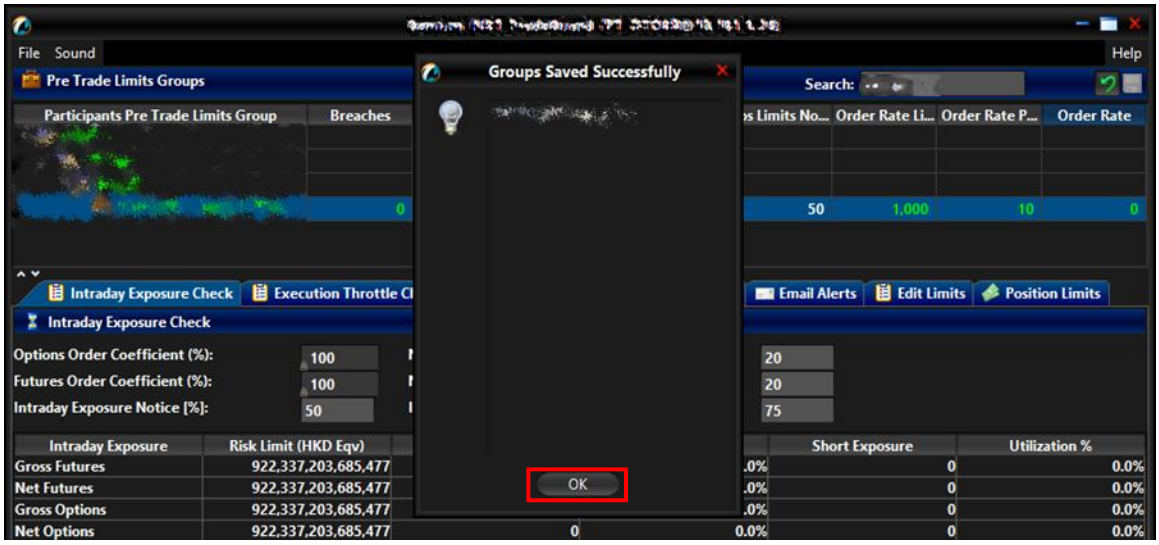
Step 2: Change the next day order coefficient value for either Options or Futures. The value ranged from 0 to 100. 0 represents that outstanding orders will not be counted any exposure until they are traded, while 100 represents outstanding orders will be fully counted towards the exposure which is determined by the corresponding UMR set by the Clearing Houses. **The exposure will be counted 100% after the order being traded, irrespective to the value of the coefficient are set.**



Step 4: Click "**Save"**. A notice for Next Day Changes Available will appear



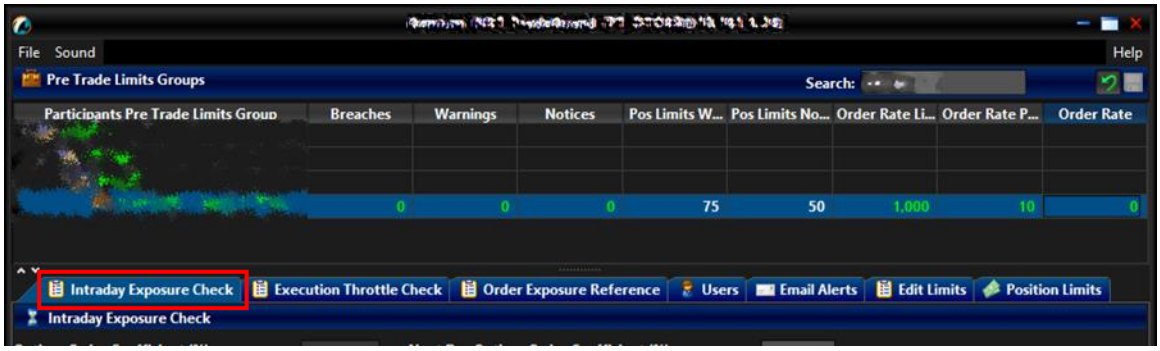
Step 5: A confirmation window will appear to confirm the save change is successful. Click "**OK**" to close the confirmation window.



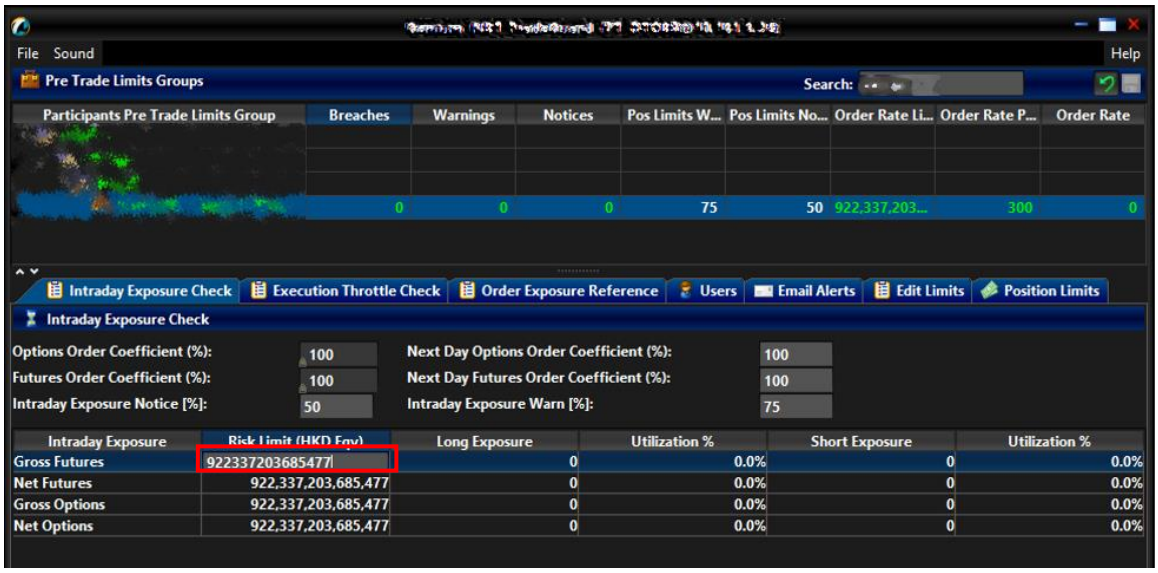
3.2.5 Changing Intraday Exposure Limits

To change a risk limit, follow the steps below:

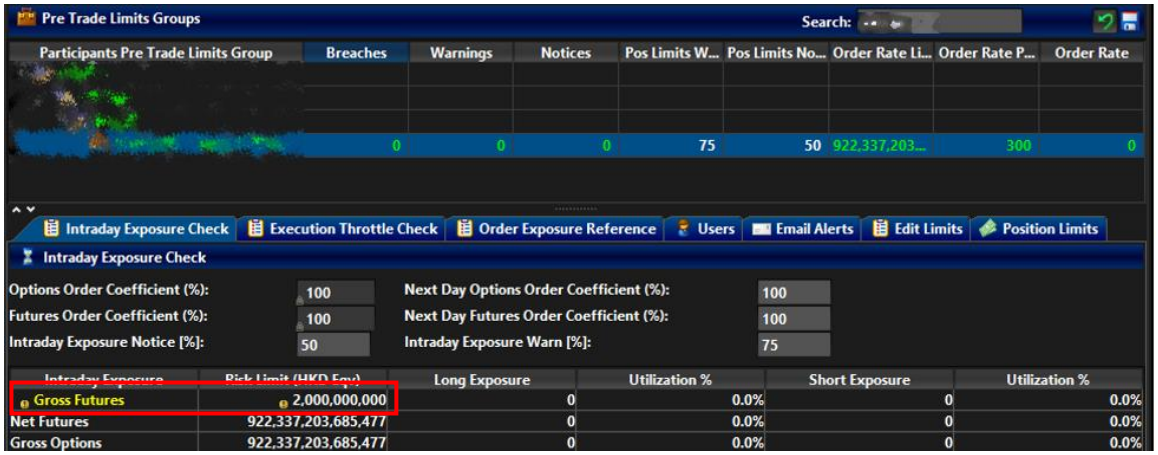
Step 1: Select a PTLG, then choose “Intraday Exposure Check” tab.



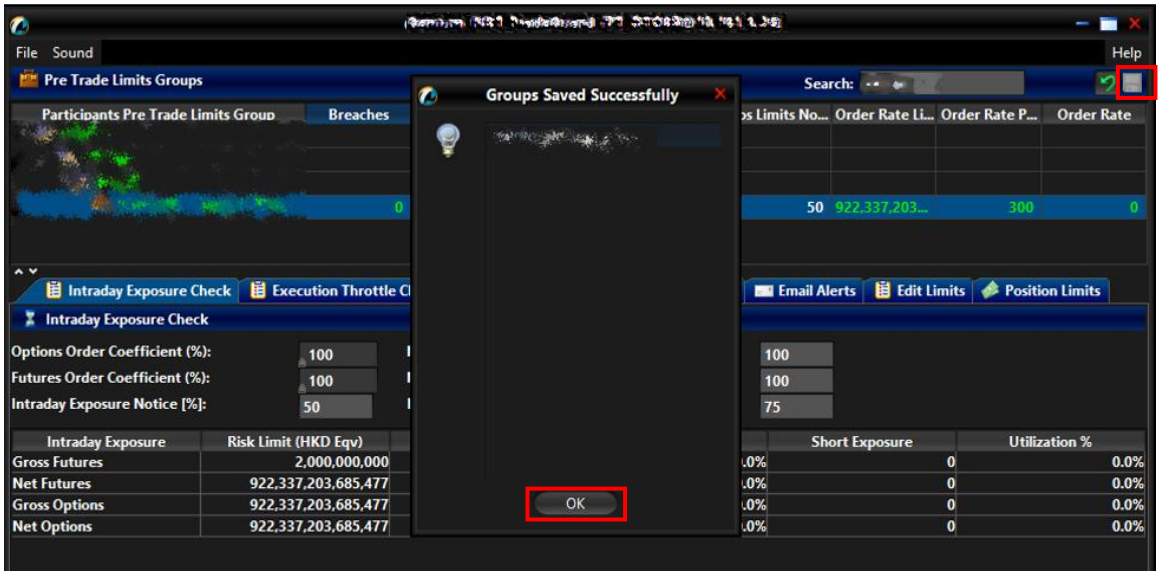
Step 2: Choose a limit to edit (e.g. Gross Futures Long/Short)



Step 3: Enter a new limit.



Step 4: Click "**Save**". A confirmation dialogue will appear, and then click "**OK**" to close the window.



Note:

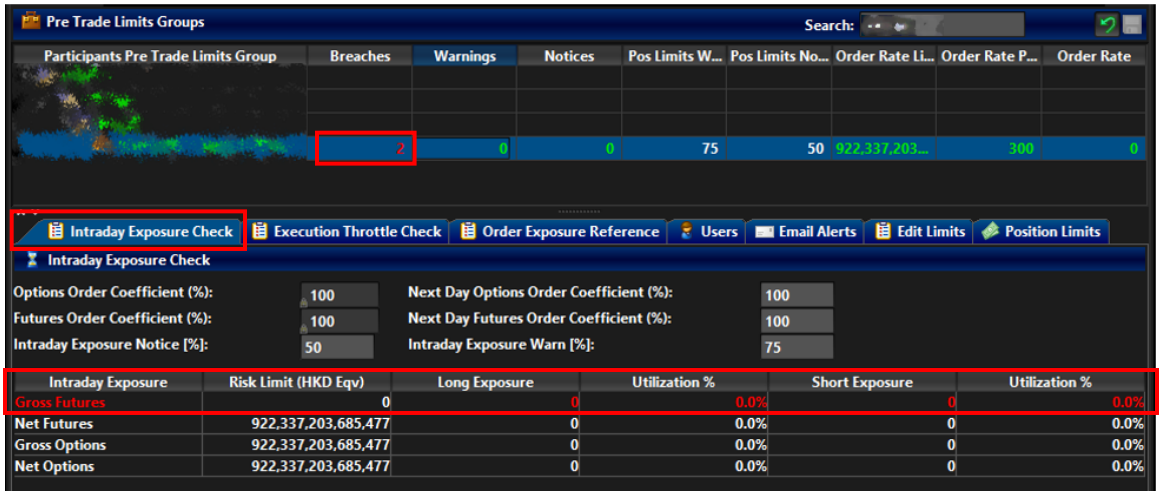
- Setting an Intraday Exposure Risk Limit to 0 will immediately block the PTLG(s)
- Intraday Exposure Risk Limits have to be an integer from 0 to 922,337,203,685,477.

3.2.6 Notice, Warning, Breach and Unblock

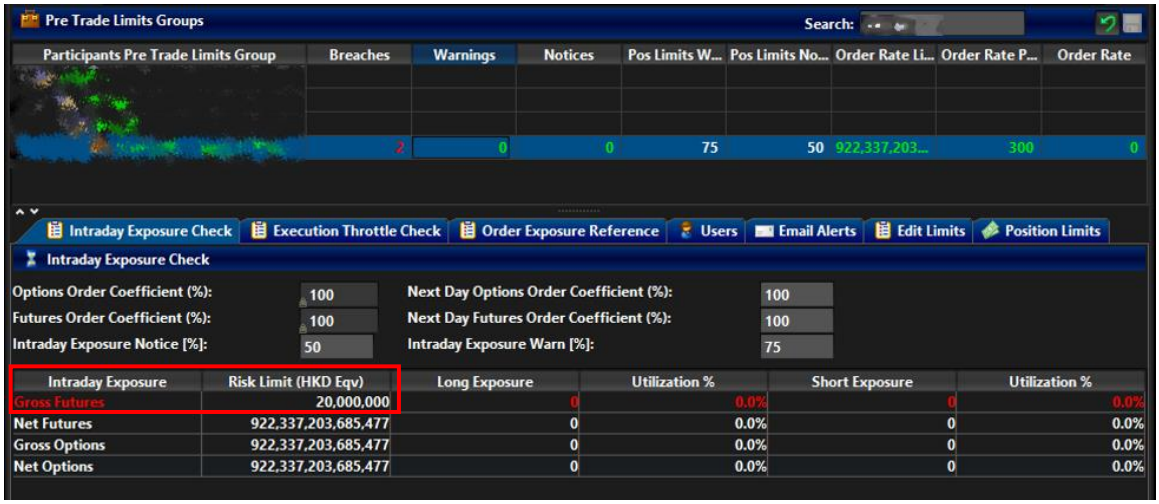
When an Intraday Exposure limit is breached, the PTLG will be blocked, subsequent orders sent by the Trading ID under the PTLG will be rejected. Also, Trading IDs will not be able send Trade Reports, including T1, T2 and T4 Trade Reports, while outstanding T4 Trade Report could still be matched with the respective counterparty. A breach only occurs when the exposure is **greater than** the set limit, so HKATS Risk Functions could still allow a large order right before the breach limit.

Notice and Warning levels can be set for alerts before limit breach. When an Intraday Exposure limit is breached, the PTLG will be blocked. To unblock the PTLG, the Risk Limit Manager has to manually lift the breach. This can be done by completing the following steps:

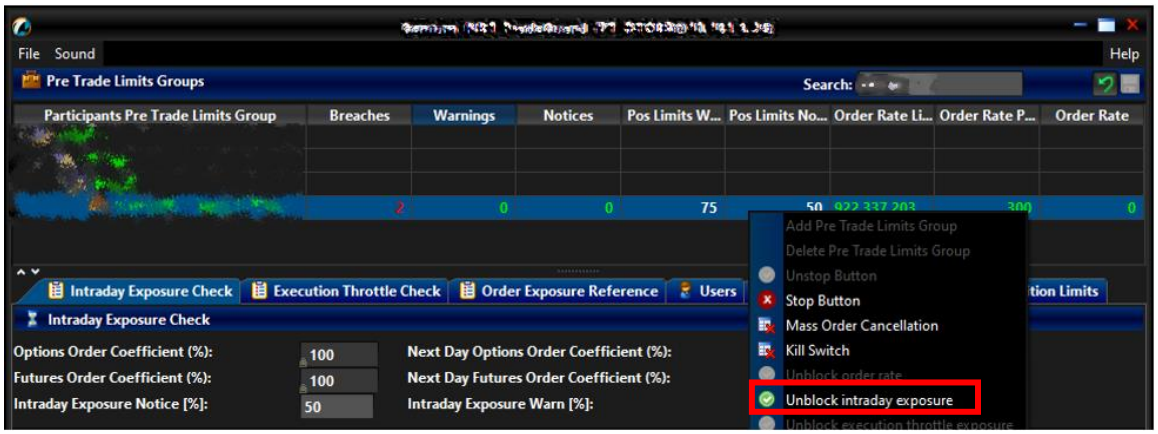
Step 1: Select a PTLG that has breached an Intraday Exposure limit



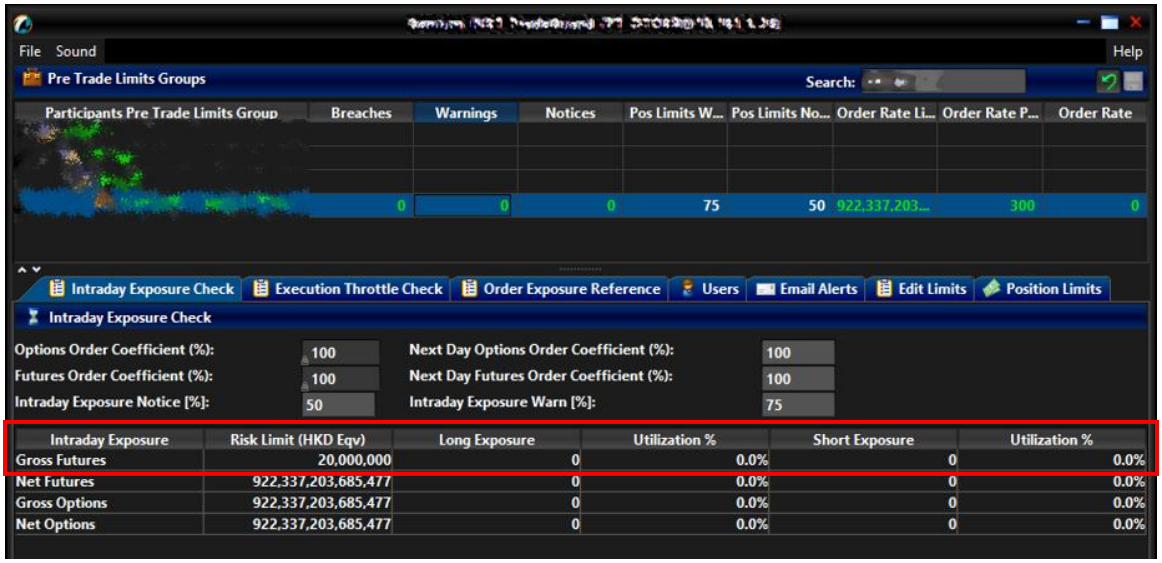
Step 2: Set the Intraday Exposure limit to a greater level than the subject exposure (Please refer to Section 3.2.5 for details).
Alternately, GUI Users can also cancel outstanding orders such that the subject exposure will decrease until it is below the current intraday exposure limit. Order cancellation can still be done on a breached PTLG on their Trading ID.



Step 3: Right-click on the subject PTLG and then select "**Unblock intraday exposure**" from the menu (there will be no confirmation window for this action).



Step 4: The breach will then be lifted. The subject PTLG will be able to enter orders again.



3.2.7 Points to Note for Intraday Exposure Check

1. The risk consumption of block trades will be counted towards the Base PTLG.

2. At-trade risk checks performed asynchronously to the flow of orders. A breach may occur and still allow subsequent orders into the order book, and possibly matched, before the breach is enforced by a block.

3. The PTLG will be blocked immediately if one of the Intraday Exposure limits is set to 0

4. All the blocked PTLGs will be unblocked after HKATS day end batch. If any one of the limits is set as 0, such PTLG will be blocked **immediately** at the start of the day.

5. For combo series, risk consumption by individual legs with be counted separately.

6. If the Base PTLG was blocked, no block trade will be able to execute by other PTLGs of the same Participant Mnemonic

7. Net Futures/Options counters will count the risk consumption on the buy side then the sell side in sequence for a 2-sided block trade (T1/T2). Consequently, the Net Futures/Options "Long Exposure" counters could be breached by the buy side of the block trade before netting occurs

8. UMRs for longing and shorting options could be different and may not be netted into zero consumption in the Net Futures/Options counters.

9. For products with decimal HKD equivalent UMR such as CUS Futures and Options, risk consumption is accumulated in decimal but truncated to be displayed in the GUI as an integer. A breach could occur even if the displayed consumption equals the limit set.

10. Setting the value of Notice and Warning Threshold to 0 will disable the 2 alerts.

11. If Trading ID B of PTLG B amends (MO33) an order of Trading ID A of PTLG A, The order consumption will be shifted to PTLG B.

12. If Trading ID B of PTLG B activates (MO99) an order of Trading ID A of PTLG A, The order consumption will remain at PTLG A.

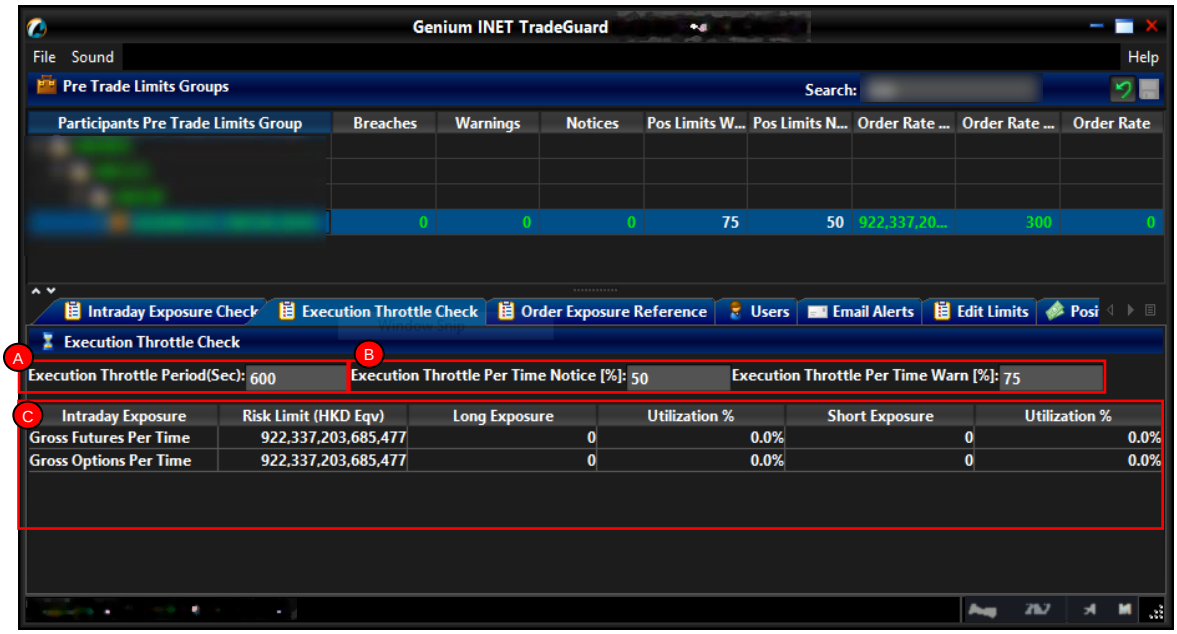
13. Intraday created instrument series (except TMC combos) will have no UMR for exposure calculation until the next day.

14. UMRs of all series will be set at 0 during weekends.

15. When centrally inactivated orders (e.g. due to abnormal disconnection) are immediately matched wholly or partially upon re-activation (MO99), the risk consumption will be counted back into the original PTLG.

3.3 Execution Throttle Limits

Execution Throttle is an at-trade risk check that allows Risk Limit Managers to set exposure limits for **trades** aggregating across all derivatives products by their respective UMRs in terms of HKD over a configurable short period of time (300 - 600 seconds). Similar to the Maximum Intraday Exposure, risk exposure associated with a Trading ID or a group of Trading IDs will be accumulated at its risk counters for the pre-set period of time.



Icon	Command	
A	*Execution Throttle Period (Sec)*	*It can be set between 300 to 600 seconds and must be an integer.*
B	*Execution Throttle Per Time Notice (%) / Warn (%)*	*The current notice / warning level for Execution Throttle Checks*
C	*Execution Throttle Limit Table*	*1) Column "Risk Limit (HKD Eqv)" shows the current limit setup for each risk checks.* *2) Column "Long Exposure" shows the current utilization for each risk checks on Long Side.* *3) Column "Short Exposure" shows the current utilization for each risk checks on Short Side.* *4) Column "Utilization %" shows the current utilization for each risk checks in percentage.* *The PTLG will be blocked immediately if setting the limits into 0.*

Execution Throttle Limits is also performed "**at-trade**" at PTLG level, meaning that the risk check is performed only after the order has been executed. PTRM servers would detect a breach only if the exposure exceeds the corresponding limit, e.g. 10,000 > 9,000, and would reject subsequent orders after the corresponding PTLG is blocked.

3.3.1 Block Trades Exposure Handling

Block Trade Reporting (T4/MO75, T1/MO76 and T2/MO77) will not be counted in Execution Throttle Check.

However, when the Base PTLG has breached any one of the Execution Throttle Limits, all PTLGs of that EP Mnemonic will no longer be able to enter Block Trades (T4/MO75, T1/MO76, T2/MO77).

In this case, Trading IDs that are in the Base PTLG will be unable to enter orders and quotes (MO31, MO33, MO37, MO93 and MO96), as they are restricted by the Execution Throttle Limits breach.

On the other hand, Trading IDs that are not in the Base PTLG (in other PTLGs created by the Risk Limit Manager) will still be able to enter orders and quotes except Block Trades.

3.3.2 Formulas for the 4 Execution Throttle risk counters:

The value of trade exposure will be calculated by multiplying the traded quantity with the corresponding UMR for each instrument and reset every user-configurable period of time on a moving-window basis. The trade exposure values will be accumulated per PTLG and displayed in four risk counters being checked against the corresponding limit settings by Risk Limit Managers:

Execution Throttle Counters	Formula
Gross Futures Long Per Time	Traded Futures Long Quantity x Long UMR
Gross Futures Short Per Time	Traded Futures Short Quantity x Short UMR
Gross Options Long Per Time	(Bought Calls Quantity x Long UMR) + (Sold Puts Quantity x Short UMR)
Gross Options Short Per Time	(Sold Calls Quantity x Short UMR) + (Bought Puts Quantity x Long UMR)

3.3.3 Counting and rejection mechanism for Execution Throttle Limits

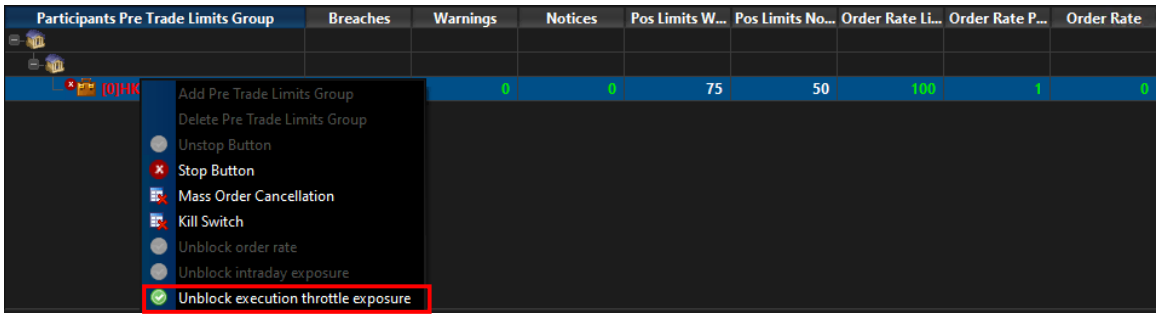
Execution Throttle Limits are at PTLG level. It aggregates the margin rate of all trades across all instrument and combo series for a PTLG. The counting and rejection mechanism are summarized in the table below.

ONLY COUNTED WHEN IT IS TRADED	Count in Exposure	Reject on breach	Reject at Base PTLG Breach
MO4 (Order Deletion)			
MO31 (Normal Orders)	✓	✓	
MO33 (Order Alteration)	✓	✓	
MO37 (One side / Two sided Quotes)	✓	✓	
MO74 (Block Trade – Pending T4 Deletion)			
MO75 (Block Trade – T4)		✓	✓
MO76 (Block Trade – T1)		✓	✓
MO77 (Block Trade – T2)		✓	✓
MO93 (Mass Quotes)	✓	✓	
MO96 (Mass Quotes)	✓	✓	
MO97 (Indicative Quotes)			
MO99 (Order Activation)	✓	✓	

The PTLG will be blocked upon a limit breach by any 1 of the 4 relevant Execution Throttle exposures. Subsequent orders by the OAPI / HKATS Online Sessions assigned to the PTLG will be rejected, and the session will receive an OAPI return code for the order rejection:

(-850010) "User has exceeded Maximum Execution Throttle Limit"

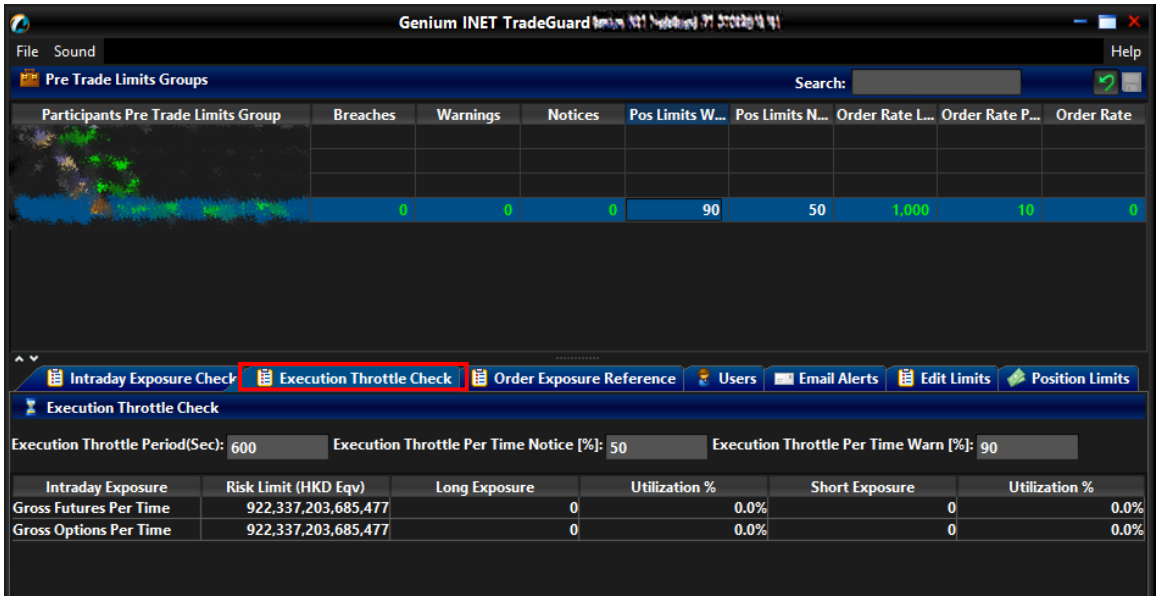
To unblock, the user has to make an adjustment / wait until the relevant limit value > the relevant Execution Throttle exposure value as the condition for unblock. "Unblock execution throttle exposure" in the menu for Emergency Buttons will be undimmed once the condition for unblock is fulfilled. For limit amendments, please refer to the Section 3.3.4 for details.



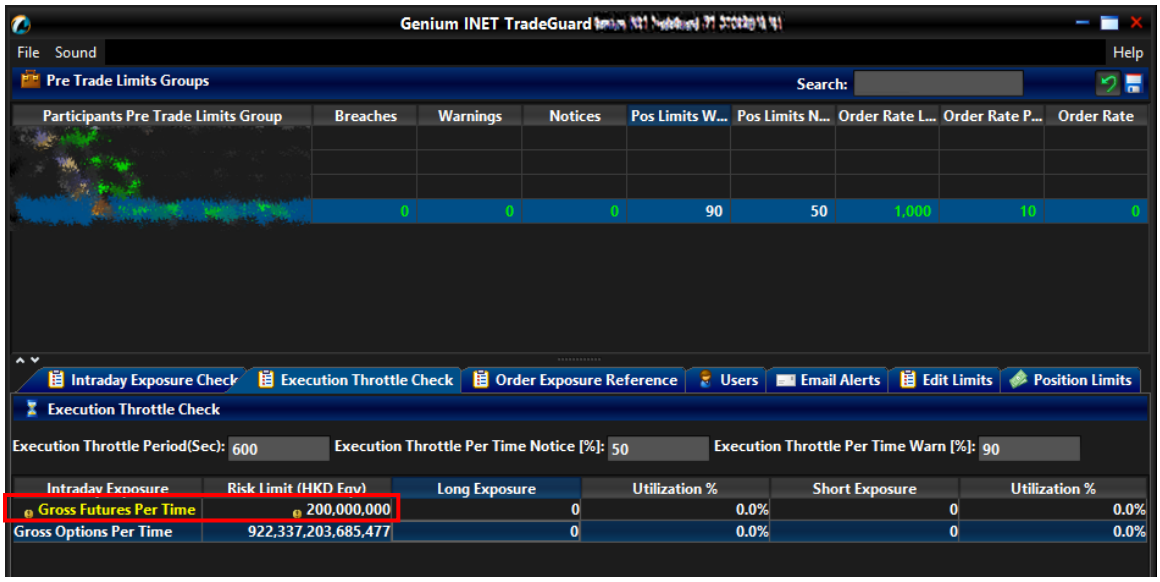
3.3.4 Changing Execution Throttle Limits

To change a risk limit, follow the steps below:

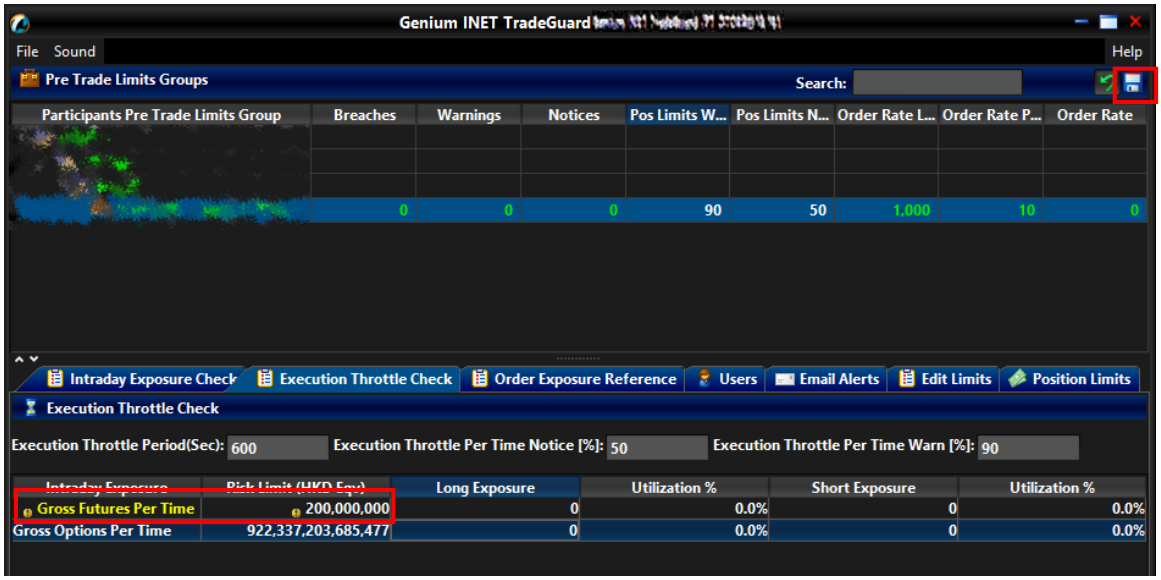
Step 1: Select a PTLG, then choose "**Execution Throttle Check**" tab.



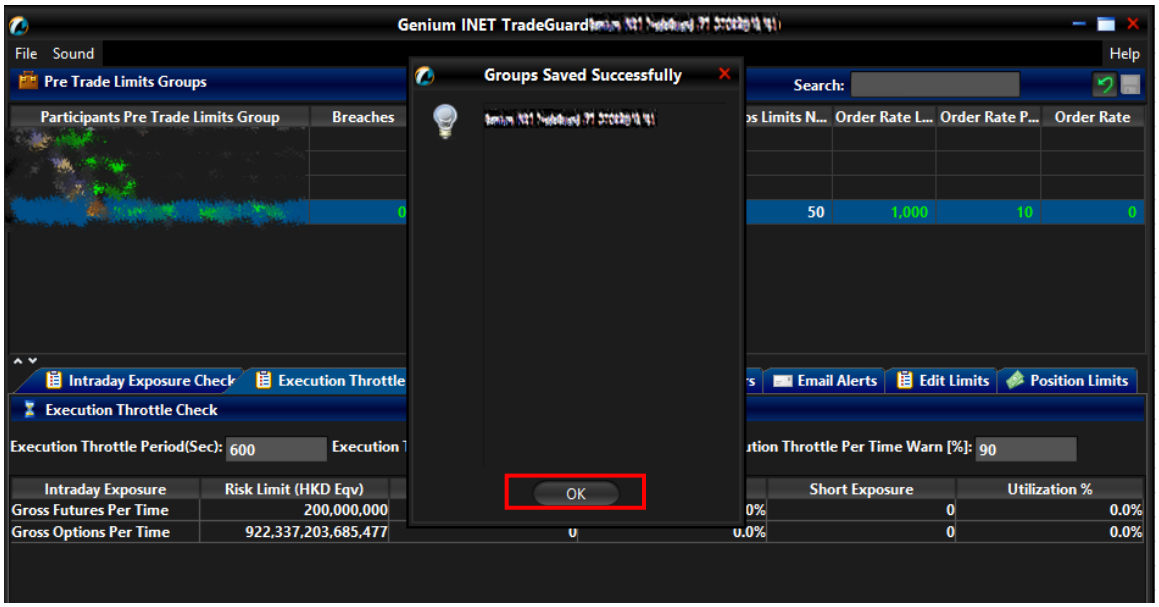
Step 2: Choose a limit to change (e.g. Gross Futures Long/Short per Time)



Step 3: Enter a new limit and click "**Save**". A confirmation dialogue will appear



Step 4: Click "**OK**" to close the confirmation window



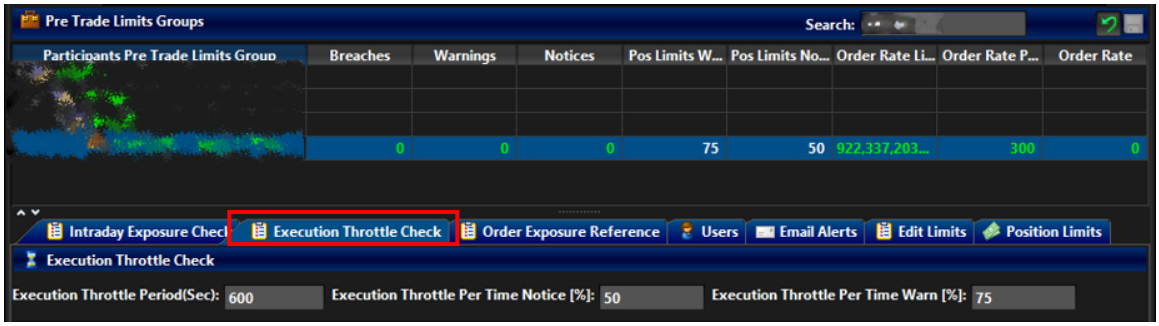
Note:

1. Setting an Execution Throttle Risk Limit to 0 will immediately block the PTLG
2. Changing an Execution Throttle Risk Limit (Gross Futures Per Time / Gross Options Per Time) will reset its respective Execution Throttle counter to 0 upon the effective of the new limit.

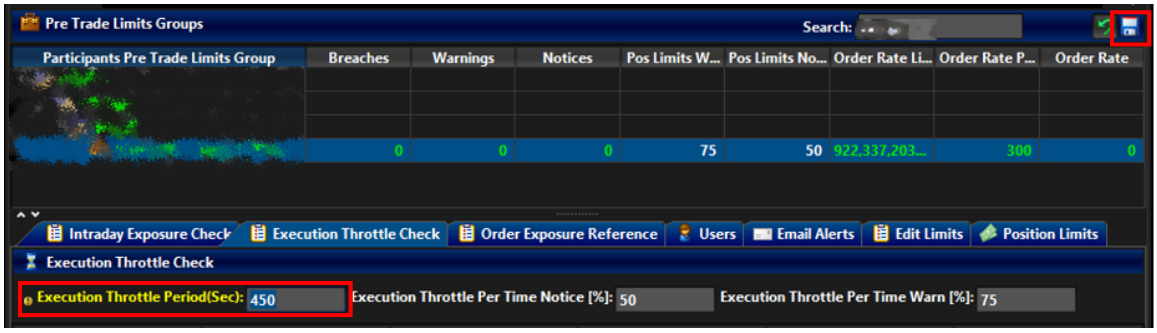
3.3.5 Changing Execution Throttle Period

To change Execution Throttle Period, follow the steps below:

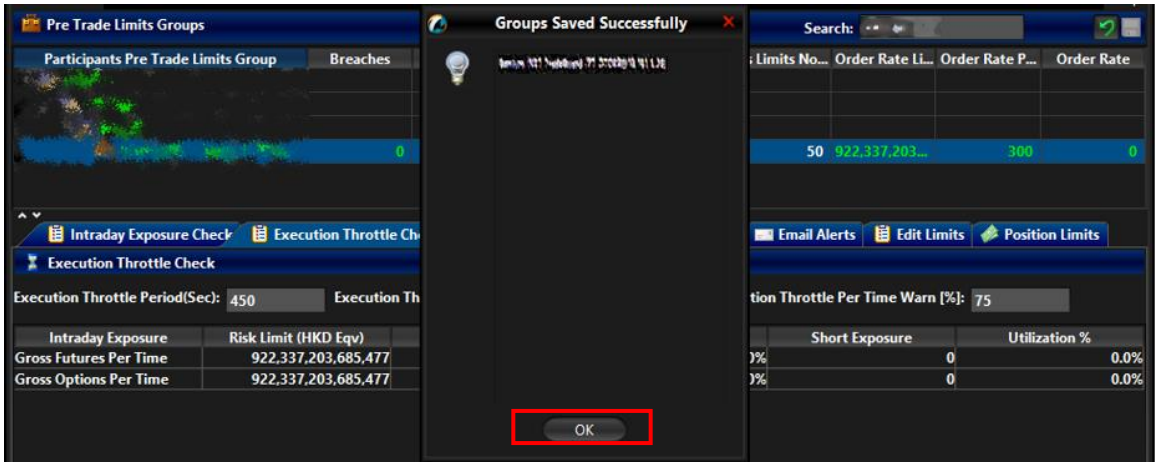
Step 1: Select a PTLG, then choose "**Execution Throttle Check**" tab.



Step 2: Choose the Execution Throttle Period to change and enter a new time period between 300 – 600 seconds.



Step 3: Click "**Save**". A confirmation dialogue will appear and then click "**OK**" to close the confirmation window.



Note:

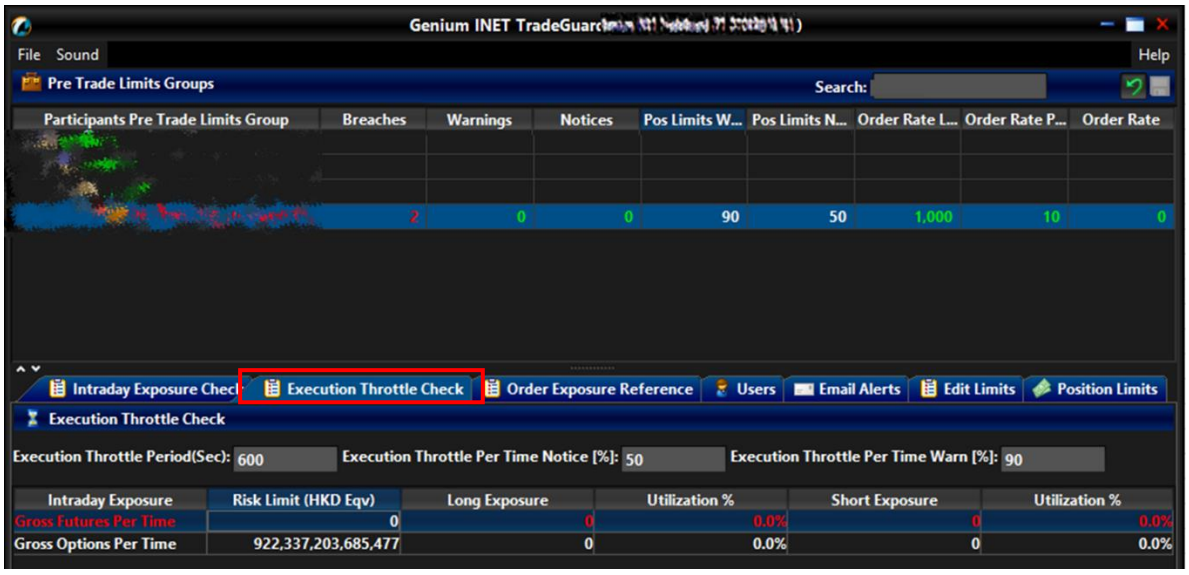
1. Changing an Execution Throttle Period will reset all Execution Throttle counter to 0 upon the effective of the new Execution Throttle Period.

3.3.6 Notice, Warning, Breach and Unblock

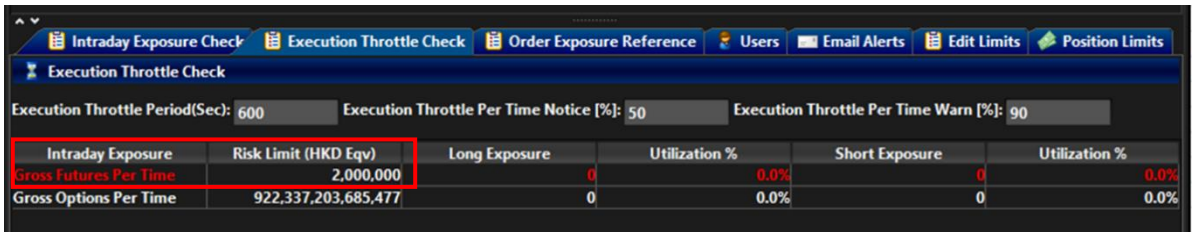
When an Execution Throttle limit is breached, a “Block” will be triggered on the PTLG, subsequent orders sent by the Trading ID under the PTLG will be rejected. Also, those Trading IDs will not be able send Trade Reports, including T1, T2 and T4 Trade Reports, while outstanding T4 Trade Report could still be matched with the respective counterparty. A breach only occurs when the exposure is **greater than** the set limit, so HKATS Risk Functions could still allow a large order right before the breach limit.

Notice and Warning levels can be set for alerts before limit breach. When Execution Throttle limit is breached, the PTLG will be blocked. To unblock the PTLG, the Risk Limit Manager has to manually lift the breach. This can be done by completing the following steps:

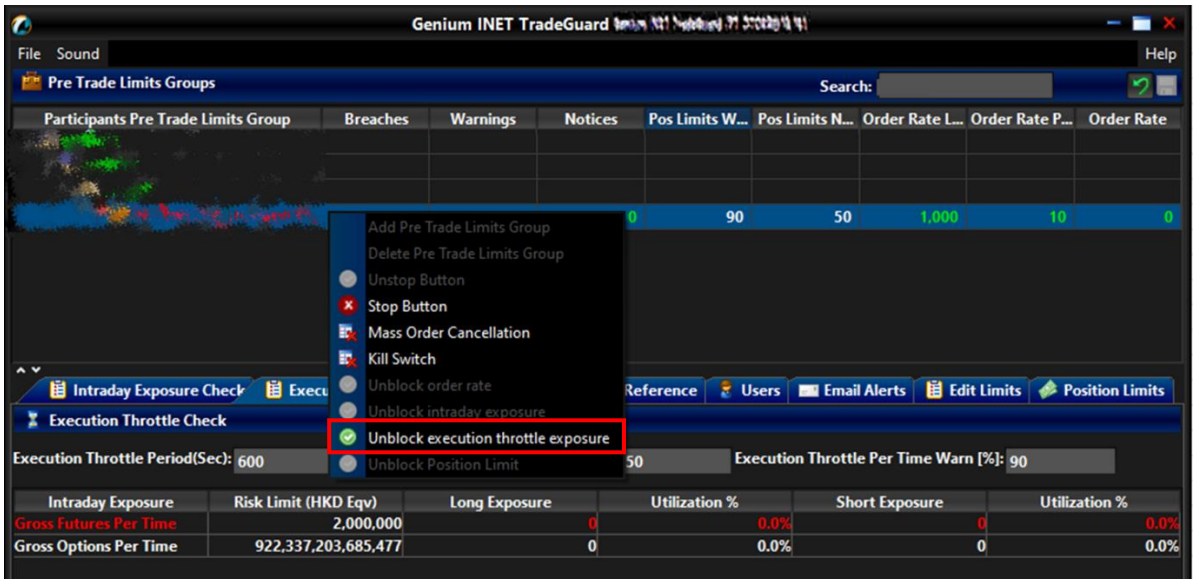
Step 1: Select a PTLG that has breached an Execution Throttle



Step 2: Set the Execution Throttle limit to a greater level than the subject exposure. (Please refer to Section 3.3.4 for details). Alternately, GUI Users can also wait until the subject exposure decrease below the current Execution Throttle limit. Order cancellation can still be done on a breached PTLG on their Trading ID.



Step 3: Right-click on the subject PTLG and then select "**Unblock execution throttle exposure**" from the menu (there will be no confirmation window for this action).



Step 4: The breach will then be lifted. The subject PTLG will be able to enter orders again.

3.3.7 Points to Note for Execution Throttle Limits

1. The risk consumption of Block Trades will not be counted into any PTLG.

2. For combo series, risk consumption by individual legs with be counted separately.

3. Consumption for the Execution Throttle checks only includes values within the most recent Execution Throttle Period, which will be divided into multiple buckets of moving window. Consumption per bucket is accumulated, with total consumption consisting of the consumption in the current bucket, plus the sum of the consumption in the previous buckets.

4. At-trade risk checks performed asynchronously to the flow of orders. A breach may occur and still allow subsequent orders into the order book, and possibly matched, before the breach is enforced by a block.

5. If the Base PTLG was blocked, no Block Trade will be able to execute by other PTLGs of the same EP Mnemonic

6. All the blocked PTLGs will be unblocked after HKATS day end batch. If any one of the limits is set as 0, such PTLG will be blocked **immediately** at the start of the day.

7. The PTLG cannot be unblocked when the value at the counters is still bigger than the corresponding limit. Refer to Section 3.3.6 for unblock procedure.

8. Entering a new value for Execution Throttle Period will reset all Execution Throttle counters.

9. Entering a new value for Exposure Throttle limit will reset the corresponding counters. For example, Gross Futures per Time Long and Short counters will be reset if a new value for Gross Futures per Time Limit is entered.

10. For products with decimal HKD equivalent UMR such as CUS Futures and Options, risk consumption is accumulated in decimal but truncated to be displayed in the GUI as an integer. A breach could occur even if the displayed consumption equals the limit set.

11. Setting the value of Notice and Warning Threshold to 0 will disable the 2 alerts.

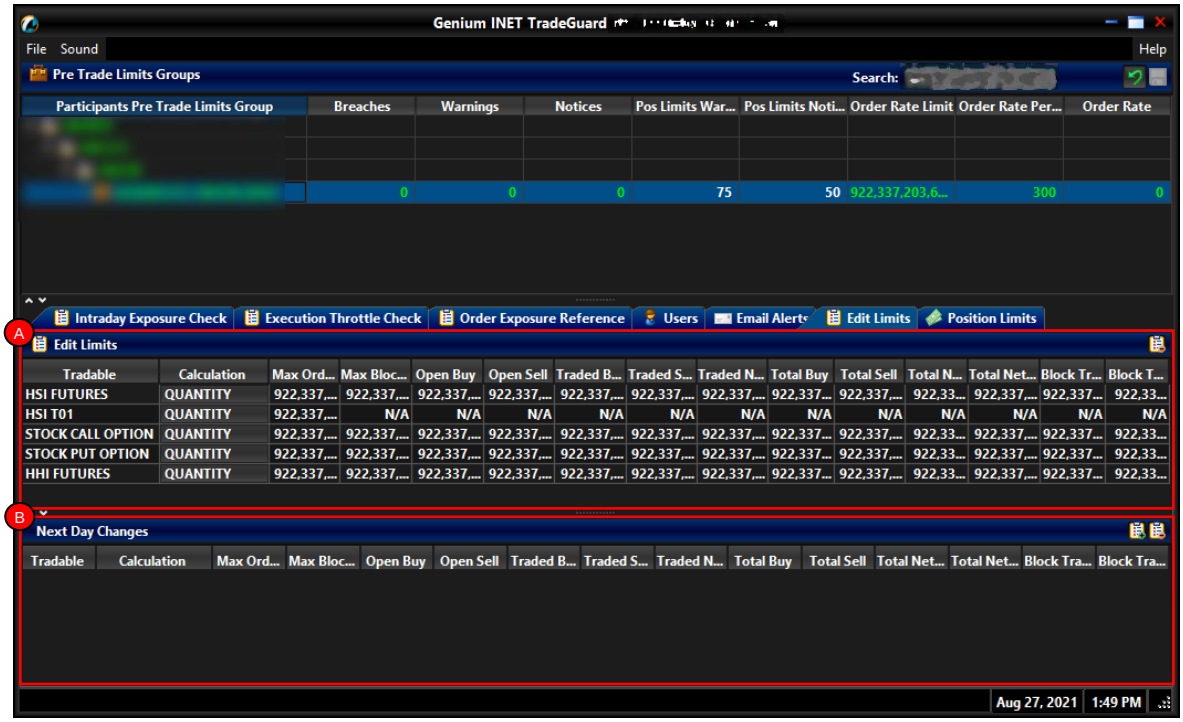
12. Intraday created instrument series (except TMC combos) will have no UMR for exposure calculation until the next day.

13. UMRs of all series will be set at 0 during weekends.

3.4 Maximum Order Size Limits

Risk Limit Managers can set Maximum Order Size Limits allowed per order per PTLG on specific products. Granularity can be down to individual futures, options and combo class level. For each order or quote entered through a PTLG, the order size must be equal or lower than the limit set.

Maximum Order Size Limits apply to all Trading IDs in a PTLG before they are accepted by the Exchange. Each order size is checked before reaching the Central Order Book. Maximum Order Size Limits are pre-trade, unlike the previous three risk checks (Maximum Order Rate limits, Maximum Intraday Exposure check and Execution Throttle limit). If a Maximum Order Size Limit is breached, only the subject order will be rejected. This check is non-accumulative, so a breach on a Maximum Order Size Limit **will not** put the PTLG into a blocked state. Subsequent orders and quotes can still be accepted as long as they pass all order size validation.



Icon	Command	
A	*Edit Limits Panel*	*User can edit the Maximum Order Size limit (**3rd Column**) for the current Tradable in this Panel. Changes applied in this panel will be applied immediately when saved.* *Orders of the product Class/Type (excluding Block Trade) will be rejected if setting any one of the limits into 0.*
B	*Next Day Changes Panel*	*The "Next Day Changes" panel shows changes that when saved in the interface, are sent to the exchange database, and become effective when the system is started the next day.*

3.4.1 Block Trades Exposure Handling

Block Trades will not be checked for Maximum Order Size Limits by HKATS Risk Functions. For Maximum Block Trade Size Limits, please refer to Section 3.5 – Maximum Block Trade Size.

3.4.2 Counting and Rejection Mechanism for Maximum Order Size Limit

The counting and rejection mechanism are summarized in the table below.

	Reject on breach
MO4 (Order Deletion)	
MO31 (Normal Orders)	✓
MO33 (Order Alteration)	✓
MO37 (One side / Two sided Quotes)	✓
MO74 (Block Trade – Pending T4 Deletion)	
MO75 (Block Trade – T4)	
MO76 (Block Trade – T1)	
MO77 (Block Trade – T2)	
MO93 (Mass Quotes)	✓
MO96 (Mass Quotes)	✓
MO97 (Indicative Quotes)	
MO99 (Order Activation)	✓

The PTLG will not be blocked upon a limit breach by Maximum Order Size Limit. The subject order which exceed the Maximum Order Size Limit will be rejected, and the session will receive an OAPI return code for the order rejection:

(-850008) "User has exceeded Maximum Order Size Limit".

3.4.3 Types of Tradables

Maximum Order Size risk check is set per Tradable. Each Tradable represents a product Instrument / Combo type or class.

There are two types of Tradables – Instrument Tradables and Combo Tradables.

Instrument Tradables

- Instruments Tradables control the maximum order size of the outright series (Futures / Call Options / Put Options). In Edit Limit Tab, all limits, including Intraday Position Limits, are editable for risk limit manger and viewable for trading unit.

- When the Maximum Order Size of an Instrument Tradable is set as 0, only the corresponding outright order will be rejected. For example, HSIX1 (Futures) will be rejected if HSI FUTURES is set as 0 while HSIX1/Z1 (Combo) can still be entered.

- For example, Single Stock Options belongs to the instrument types of STOCK CALL OPTION and STOCK PUT OPTION with different instrument classes corresponding to different stock underlyings. If HEX call options' Maximum Order Size is set at 500 at its instrument class level but the STOCK CALL OPTION is set at 400 at the instrument type level, a HEX call options order size of 450 will be rejected by the instrument type level setting.

Combo Tradables

- Combo Tradables control the Maximum Order Size of the Standard Combination and Tailor-Made Combination (TMC) series. In Edit Limit Tab, only the Maximum Order Size limits are editable for Risk Limit Manger and viewable for trading unit.

- For Standard Combination, Combo Tradables are created based on the time spread between the two involved legs. For example, if a standard combination involves legs of November 2021 contract and December 2021 contract, the time spread will be 1 (as known as TS LEVEL 1). The corresponding Combo Tradable will be HSI T01 and HSI FUT TIME SPREAD (S=1) for a HSI Standard Combination with a time spread of 1.

- When the maximum order size of a Combo tradable is set as 0, only the corresponding combo order will be rejected. For example, HSIX1/Z1 (Combo) will be rejected if HSI T01 is set as 0 while HSIX1 (Futures) can still be entered.

- For example, STOCK FUTURES belongs to the combo types of SF TS LEVEL 1 with different instrument classes corresponding to different stock underlyings. If HEXX1/Z1's Maximum Order Size is set at 500 at its instrument class level (HEX TIME SPREAD (S=1)) but the (SF TS LEVEL 1) is set at 400 at the combo type level, a HEXX1/Z1 order size of 450 will be rejected by the combo type level setting.

- For Tailor-Made Combination, the risk limit of the TMC Tradable will apply to all Exchange Prescribed TMC strategies orders when the tradable becomes effective.

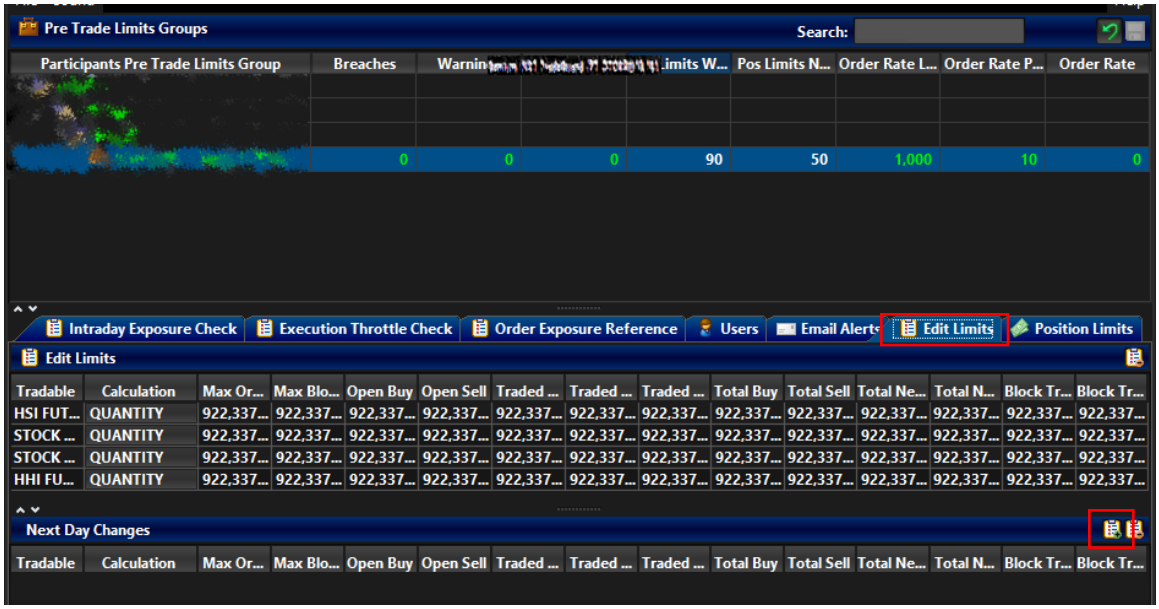
- For example, the risk limit set up for the Combo Type Tradable "SOM TMC" will apply to orders of all TMC strategies of any Stock Option class.

3.4.4 Adding New Tradable

To add a new Maximum Order Size Limit for a specific product, Risk Limit Managers have to create a Tradable (Please see Appendix C for the complete list of Tradables) for the products:

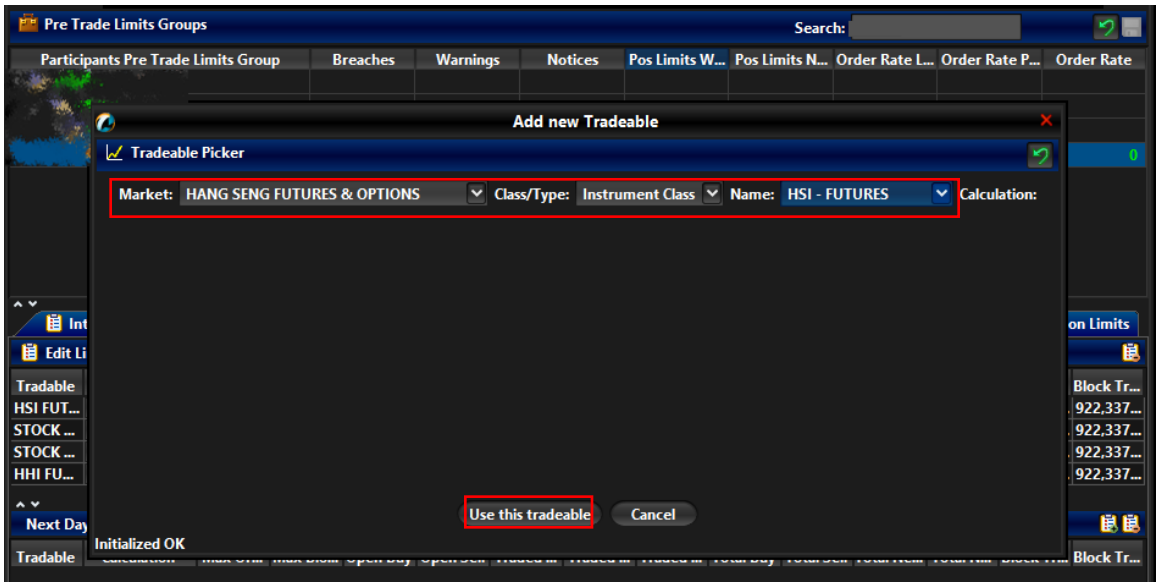
Step 1: Select a PTLG, then choose "**Edit Limits**" tab.

Step 2: Click the "**Add**" button in the Next Day Changes Panel, as the Add new Tradable window will appear.

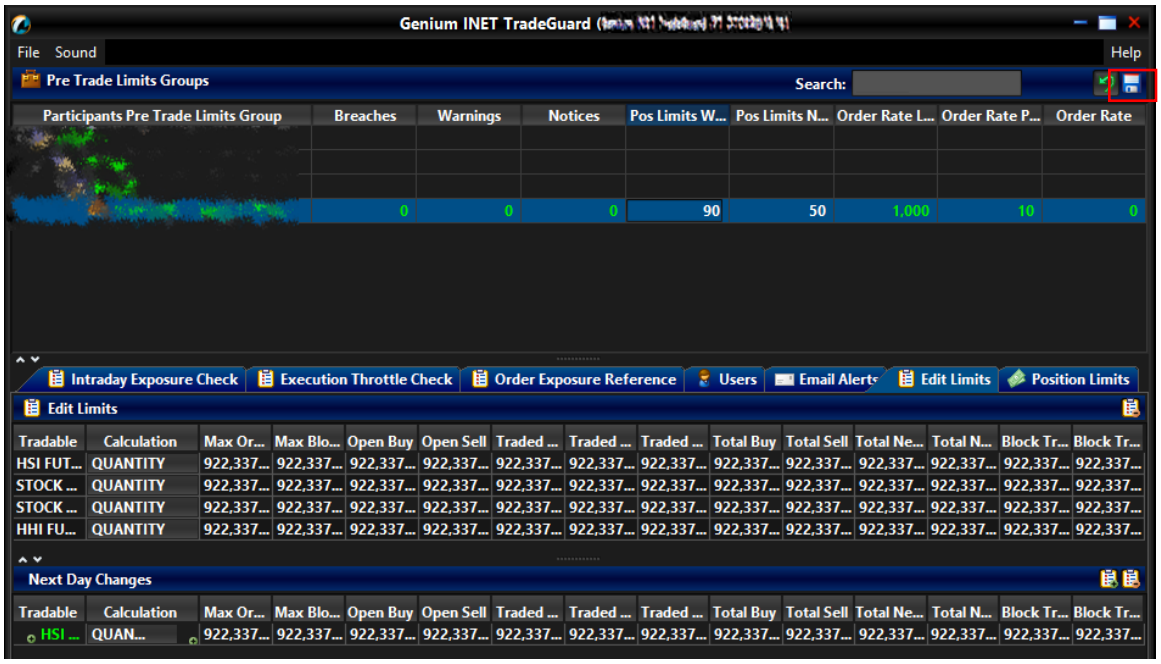


Step 3: Select a product as below:

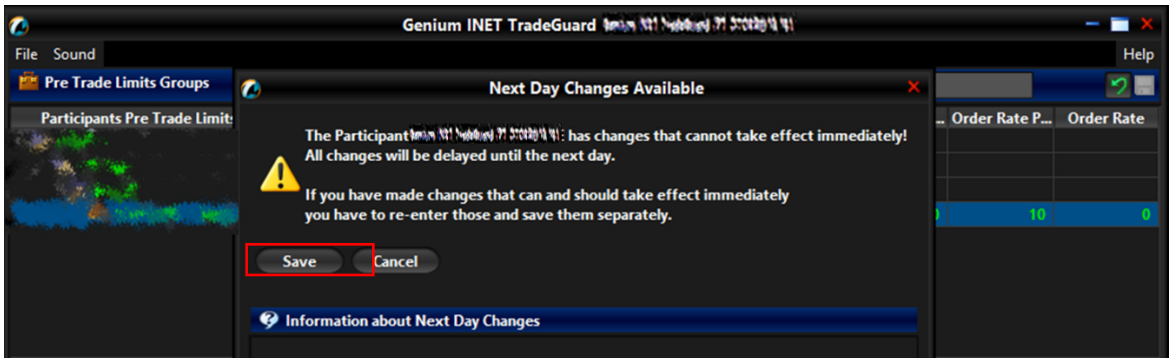
- **Market:** Select the Market of the product
- **Class/Type:** Select the Class/Type of the product
- **Name:** Select the product (tradable) to be monitored



Step 4: Click the "**Use this tradable**" button. A confirmation dialogue will appear "**Add**" button in the Next Day Changes Panel, as the Add New Tradable window will appear.



Step 5: Click the "**Save**" button. A confirmation dialogue will appear



Step 6: Click "**OK**" to close the confirmation window

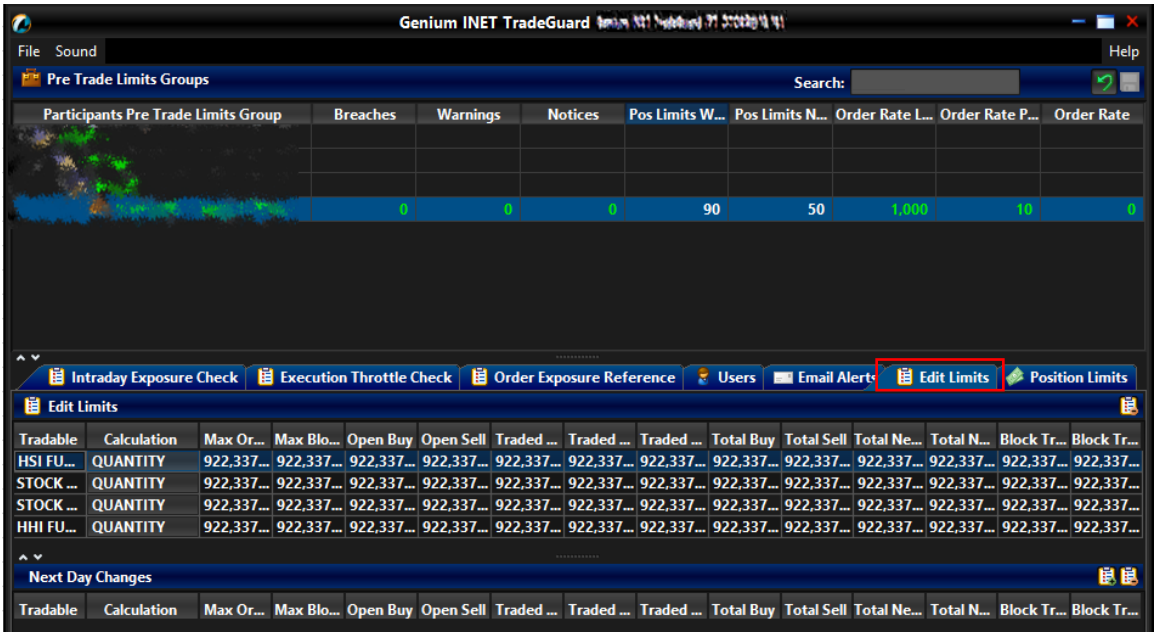
Note:

1. Adding a new instrument tradable will also include adding risk checks on the Maximum Block Trade Size and Intraday Position Limits on that product.
2. Adding a new combo tradable will only include the maximum order size setting.

3.4.5 Removing Current Tradable

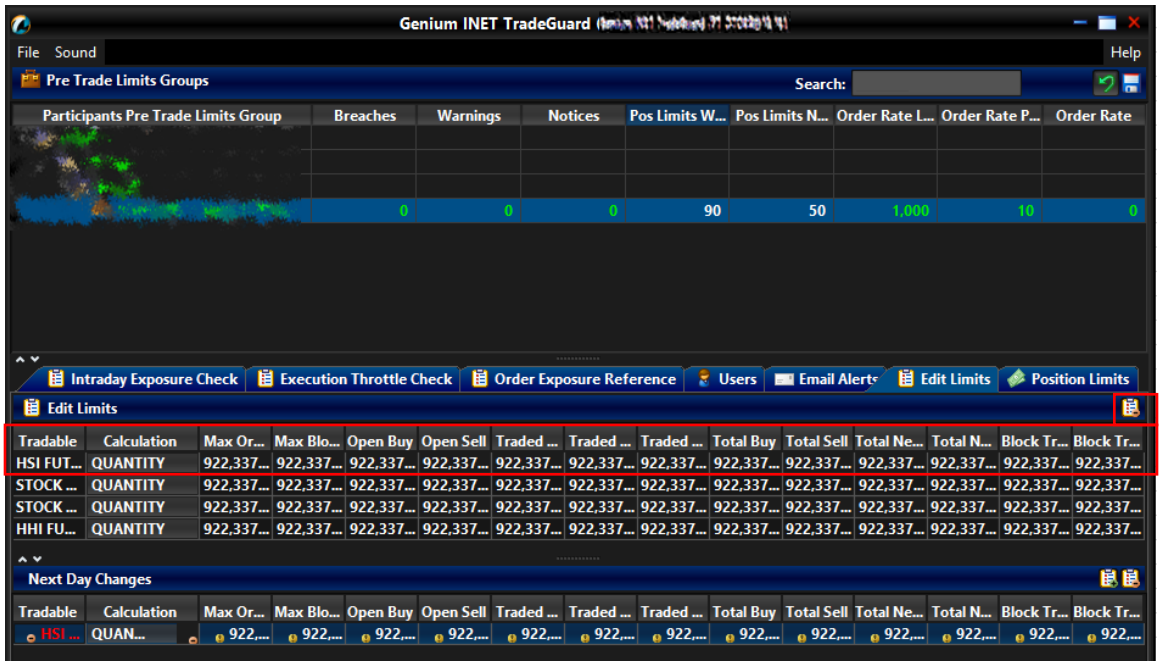
To remove an existing tradable limit on a PTLG, follow the steps below:

Step 1: Select a PTLG, then choose "**Edit Limits"** tab



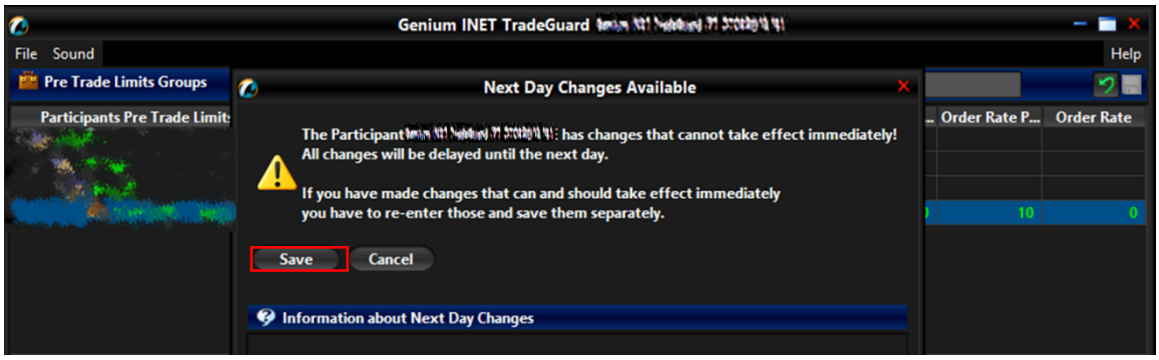
Step 2: In either the Edit Limits panel (for existing, effective Tradable(s)) or the next Day Changes panel (for next-day, effective Tradable(s)), select Tradables to delete.

Step 3: Click the "**Remove Tradable**" in the corresponding panel



Step 4: Click "**Save** on the top right hand corner of the window

Step 5: Click "**Save**" in the Next Day Changes Available confirmation window



Step 6: The Save Successful dialogue box will appear to confirm your changes for the group(s) that you have changed

Step 7: Click "**OK**" to close the confirmation window.

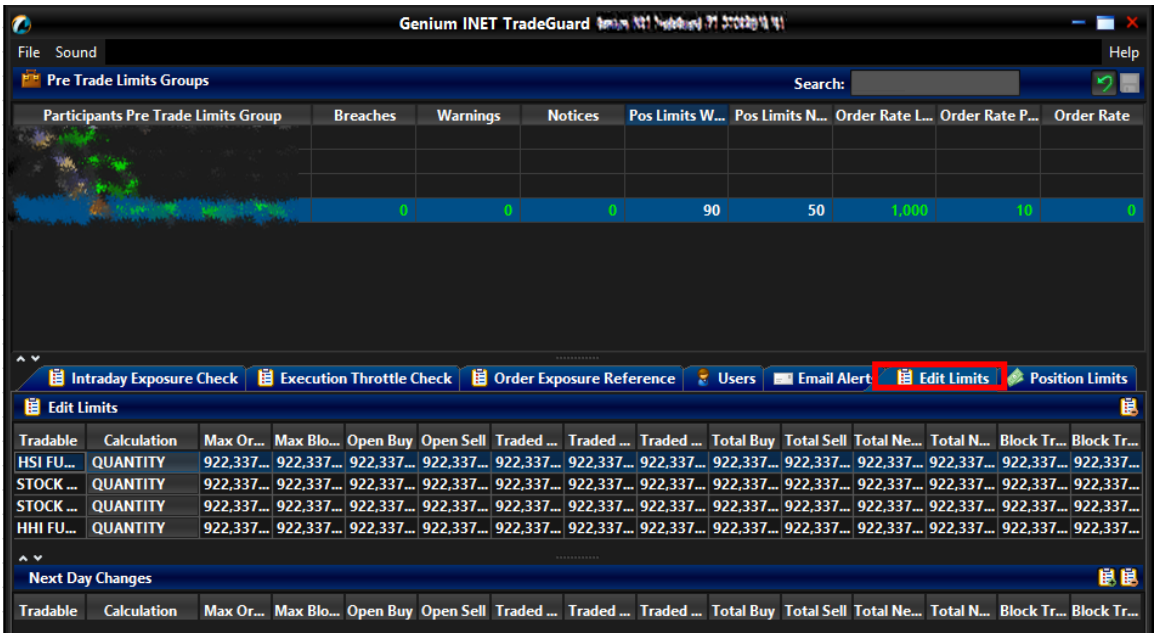
Note:

1. Removing an existing Instrument Tradable will also remove risk checks on the Maximum Block Trade Size and Intraday Position Limits on that product.

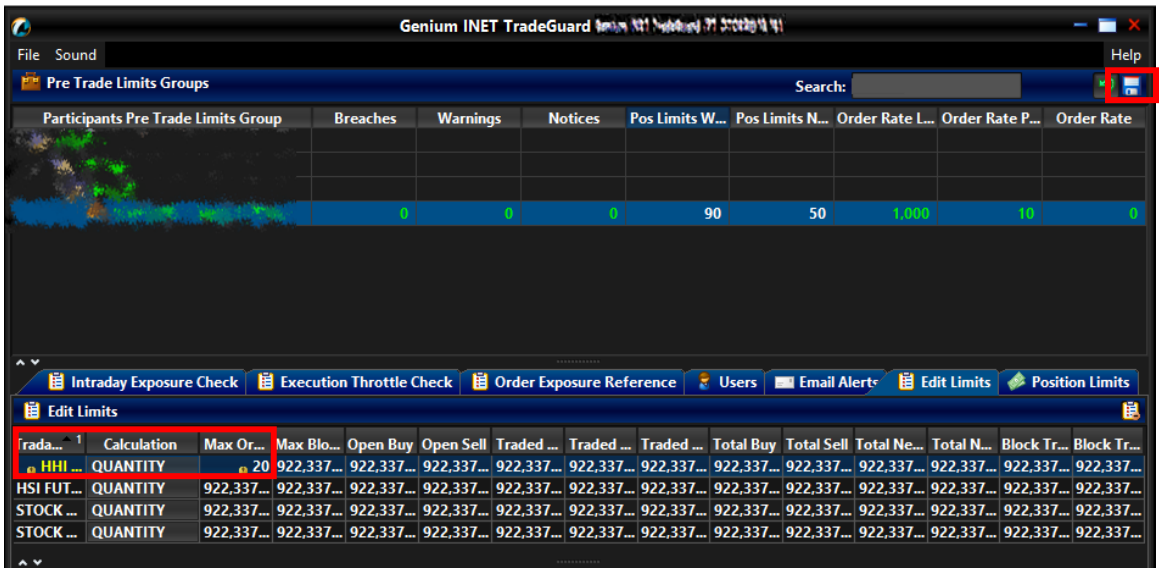
3.4.6 Changing Maximum Order Size Limits

To edit the Maximum Order Size Limit of an existing Tradable in the Edit Limits Panel, complete the following steps:

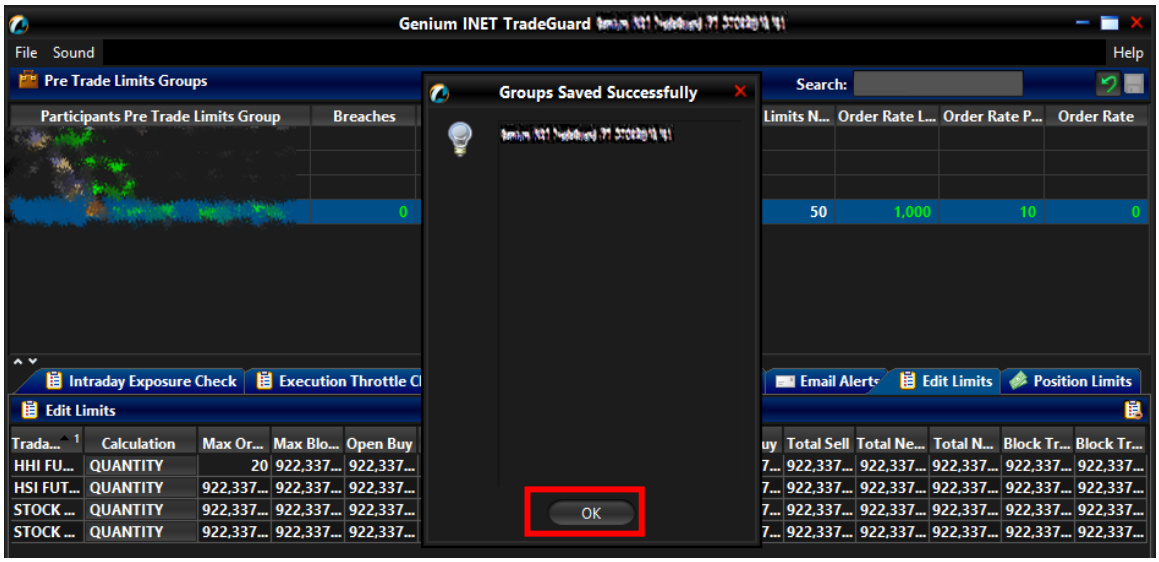
Step 1: Select a PTLG, then choose "**Edit Limits**" tab.



Step 2: In the Edit Limits Panel, input a new limit on the Max Order Size (3rd column) to change the Tradable's Maximum Order Size Limit.



Step 3: Click "**Save**" on the top right hand corner of the window. The Save Successful dialogue box appears confirming the changes on the PTLG(s) is made.



Step 4: Click "**OK**" to close the confirmation window.

3.4.7 Points to Note for Maximum Order Size Limits

1. For two-sided quotes (MO37) or mass quote (MO96), either the buy or the sell side quote in a pair fails will render that whole pair being rejected.

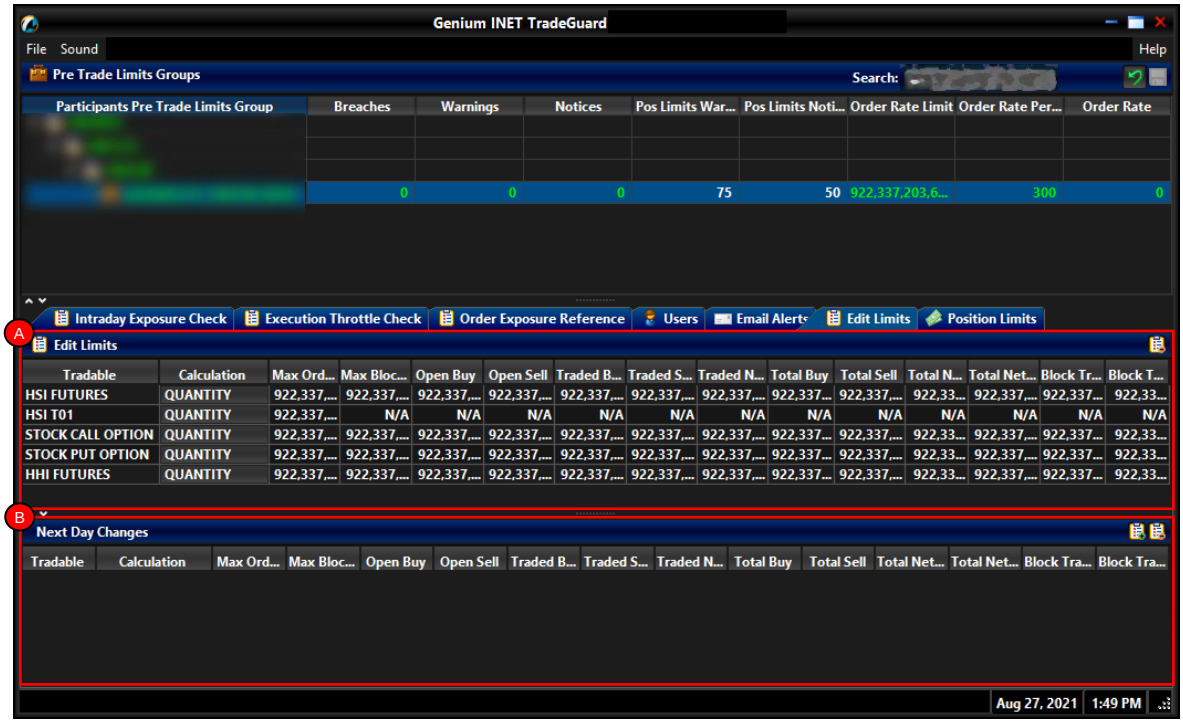
2. Bait Orders and Block Trades will not be checked for Maximum Order Size Limits by HKATS Risk Functions.

3. For new products, there may be a chance that the Maximum Order Sizes could not be effective on the launch day. Risk Limit Managers should then proceed to set the Maximum Order Size of that new product on the launch day and expect to the limit to be effective next day.

4. Combo orders will only be checked against the Maximum Order Size Limits set on the Combo Tradable. For example, a HSI TS01 Combo will be rejected by the Combo type level setting if the Maximum Order Size for HSI FUTURES is set at 100 as the HSI TS01 combo is set at 0.

3.5 Maximum Block Trade Size Limits

Risk Limit Managers can also set Maximum Block Trade Size Limits allowed per order per PTLG on specific products. Similar to Maximum Order Size Limits, it can be down to individual futures or options class level. For each Block Trade entered through a PTLG, the size of the Block Trade order must be equal or lower than the limit set. If a Maximum Block Trade Size Limit is breached, only the subject order will be rejected. This check is non-accumulative, so a breach on a Maximum Block Trade Size Limit will not put the PTLG into a blocked state. Subsequent orders and quotes can still be accepted as long as they pass all order size validation.



Icon	Command	
A	*Edit Limits Panel*	*User can edit the Maximum Block Trade Size limit (**4th Column**) for the current Tradable (Except Combo Tradable) in this Panel. Changes applied in this panel will be applied immediately when saved.*
	Block trade of the product Class/Type will be rejected if setting the limits into 0.	
B	*Next Day Changes Panel*	*The "Next Day Changes" panel shows changes that when saved in the interface, are sent to the exchange database, and become effective when the system is started the next day.*

3.5.1 Block Trades Exposure Handling

Only T4/MO75, T1/MO76 and T2/MO77 Block Trades will be checked for Maximum Block Trade Size Limits by HKATS Risk Functions.

For T4/MO75, Trading IDs will not be able to send / accept trade report if the order size has exceeded the Maximum Block Trade Size Limits of such specific products.

For T1/MO76, Trading IDs will not be able to send trade report if the order size has exceeded the Maximum Block Trade Size Limits of such specific products.

For T2/MO77 Block Trades, the whole transaction (all Block Trade legs) will be rejected if one of the involved products has exceeded the Maximum Block Trade Size Limits of such specific products.

3.5.2 Counting and Rejection Mechanism for Maximum Block Trade Size Limit

The counting and rejection mechanism are summarized in the table below.

	Reject on breach
MO4 (Order Deletion)	
MO31 (Normal Orders)	
MO33 (Order Alteration)	
MO37 (One side / Two sided Quotes)	
MO74 (Block Trade – Pending T4 Deletion)	
MO75 (Block Trade – T4)	✓
MO76 (Block Trade – T1)	✓
MO77 (Block Trade – T2)	✓
MO93 (Mass Quotes)	
MO96 (Mass Quotes)	
MO97 (Indicative Quotes)	
MO99 (Order Activation)	

The PTLG will be blocked upon a limit breach by Maximum Block Trade Size Limit. The subject block trade which exceed the Maximum Block Trade Size Limit will be rejected, and the session will receive an OAPI return code for the order rejection:

(-850012) "User has exceeded Max. Block Trade Size Limit".

3.5.3 Adding new tradable

To add a new Maximum Block Trade Size Limit for a specific product, please refer to section 3.4.4

Note:

1. Adding a new outright Tradable will also include adding risk checks on the Maximum Order Size and Intraday Position Limits on that product.
2. There are no Maximum Block Trade Size check for Combo Tradable

3.5.4 Removing Current Tradable

To remove an existing Tradable limit on a PTLG, please refer to section 3.4.5

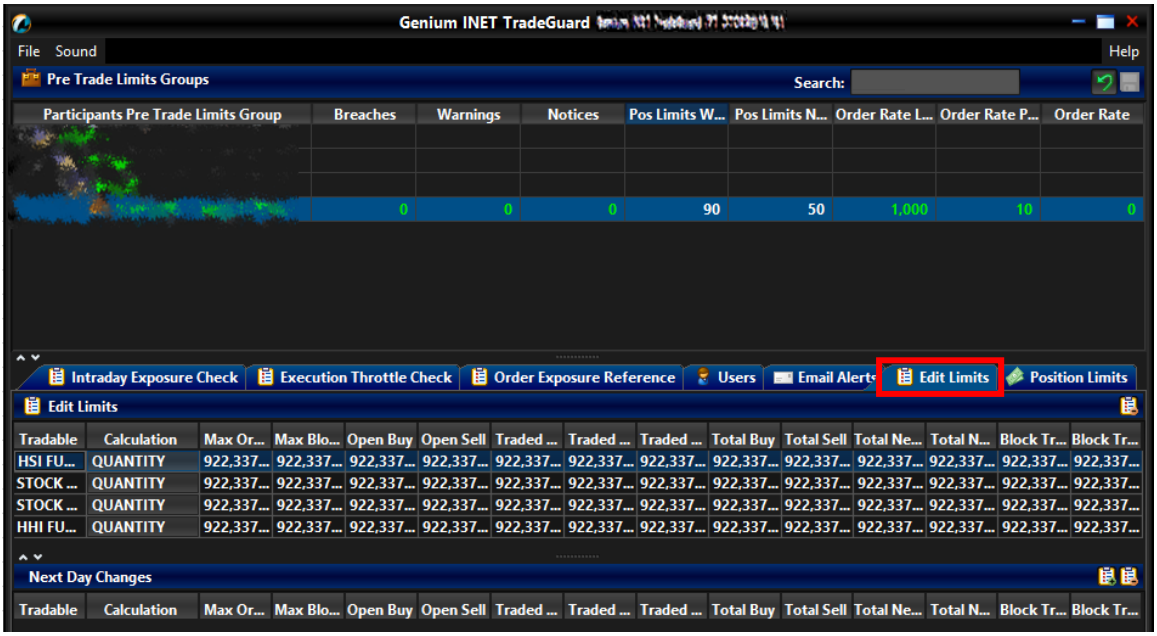
Note:

1. Removing an existing outright Tradable will also remove risk checks on the Maximum Order Size and Intraday Position Limits on that product.

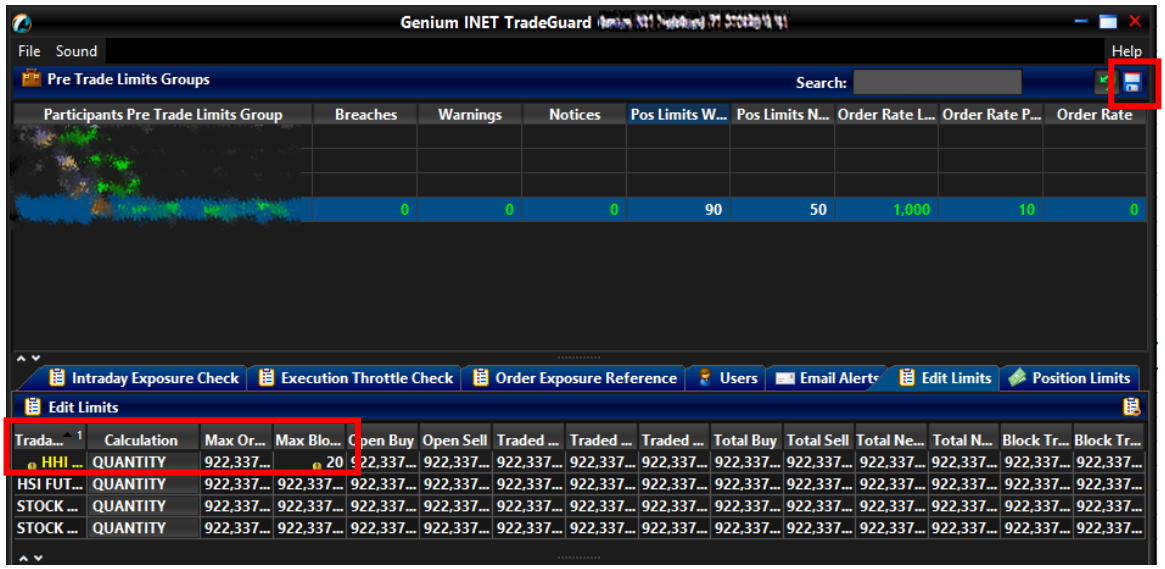
3.5.5 Changing Maximum Block Trade Size Limits

To edit the Maximum Block Trade Size Limit of an existing Tradable in the Edit Limits Panel, complete the following steps:

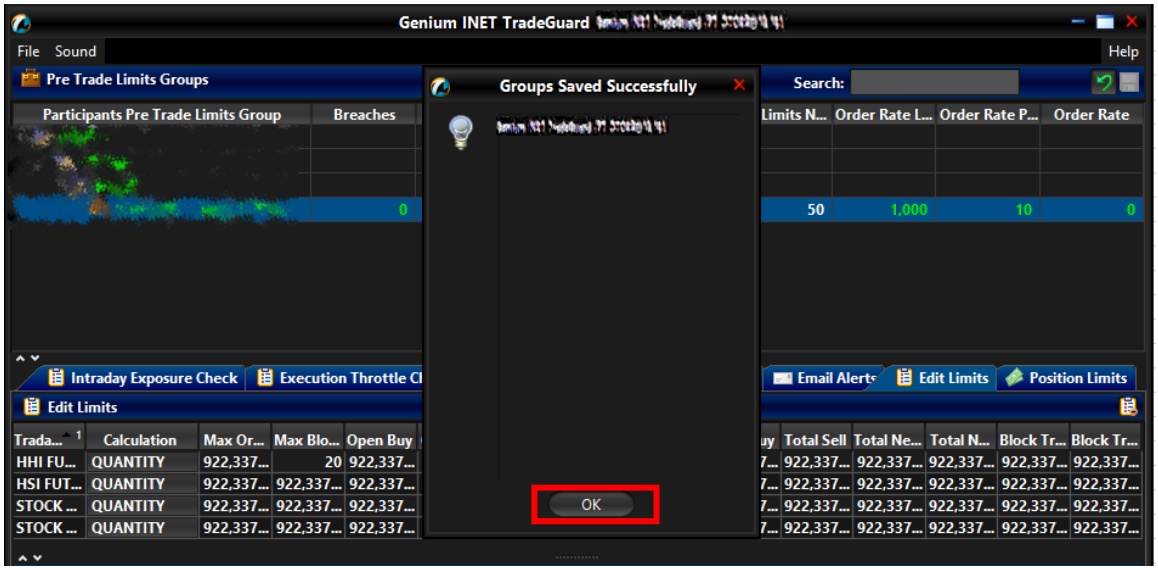
Step 1: Select a PTLG, then choose "**Edit Limits**" tab.



Step 2: In the Edit Limits Panel, input a new limit on the Max Block Trade Size column (4th column) to change the Tradable' s Maximum Block Trade Size Limit.



Step 3: Click "**Save**" on the top right hand corner of the window. The Save Successful dialogue box appears confirming the changes on the PTLG(s) is made.



Step 4: Click "**OK**" to close the confirmation window.

3.5.6 Point to Note for Maximum Block Trade Size Limits

1. Only T4/MO75, T1/MO76 and T2/MO77 Block Trades are subjected to be control by Maximum Block Trade Size Limits.

2. T2/MO77 Block Trades will be rejected by Maximum Block Trade Size Limits if one of the involved legs exceeded its corresponding limits.

3. T4/MO75 cannot be accepted if the Maximum Block Trade Size Limits is below the order size being accepted.

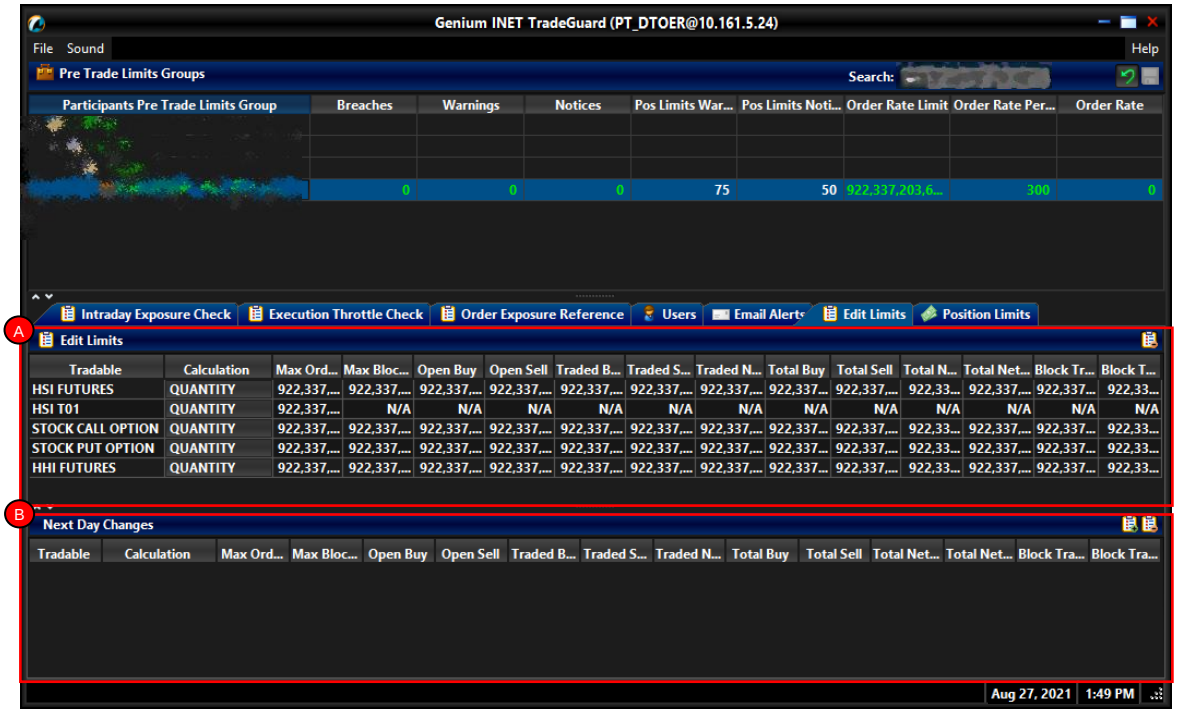
4. For T2/MO77 Block Trades rejected by Maximum Block Trade Size Limits, only the first leg of the T2 strategy will be recorded on the email.

5. For new products, there may be a chance that the Maximum Block Trade Sizes could not be effective on the launch day. Risk Limit Managers should then proceed to set the Maximum Block Trade Size of that new product on the launch day and expect to the limit to be effective next day.

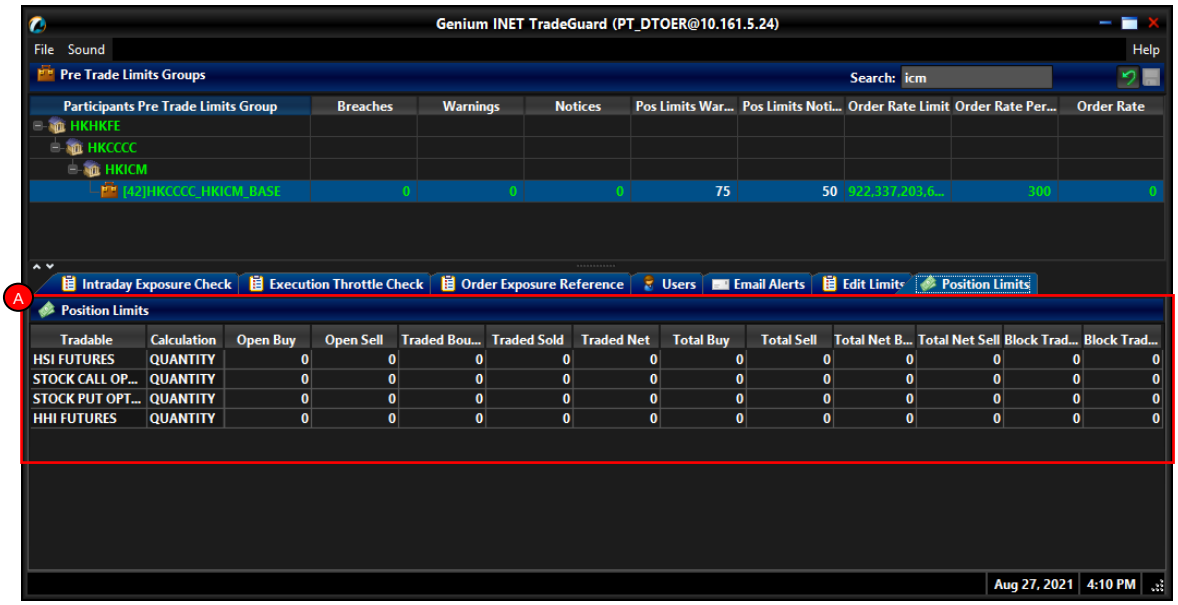
3.6 Intraday Position Limits

Intraday Position Limits are at-trade risk checks that accumulate exposures from orders and/ or trades in term of the derivatives contract quantities upon different types of products over the course of a business day. Risk Limit Managers may apply a set of quantity exposure limits for each Instrument Tradable (Type or Class Level). There are 11 counters against 11 limits per tradable for configuration.

Similar to the existing Maximum Intraday Exposure Check, Risk Limit Managers can choose to be notified by the configurable notification and warning levels before a limit is breached. If a limit of a tradable is breached, the **corresponding product(s) of that Tradable will then be blocked** and subsequent orders for the specific tradable will be rejected. A manual unblock action will then be required to lift the breach restriction.



Icon	Command	
A	*Edit Limits Panel*	*User can edit the 11 Position Limits (5th to 15th Column) for the current Tradable (Except Combo Tradable) in this Panel. Changes applied in this panel will be applied immediately when saved.*
	Subsequent orders of the product (including the related combination and Block Trade) under the Tradable will be rejected immediately if setting any one of the limits into 0.	
B	*Next Day Changes Panel*	*The "Next Day Changes" panel shows changes that are saved in the interface will be sent to the exchange database, and become effective when the system starts on the next day.*



Icon	Command	
A	*Position Limits Panel*	*User can view exposure of the 11 Position Limits counters (**3rd to 13th Column**) for the effective Tradables (except Combo Tradable) in this Panel.* *This Panel will only not display the exposure of Combo Tradables*

3.6.1 Block Trades Exposure Handling

All exposure of the Block Trades of an EP Mnemonic, irrespective of the entering Trading IDs and associated PTLG will only be counted into the corresponding Base PTLG of that EP Mnemonic.

Therefore, all PTLGs of that EP Mnemonic will no longer be able to enter Block Trades (T4/MO75, T1/MO76, T2/MO77) for that specific product when the Base PTLG has breached any one of the Intraday Position Limits of such tradable. However, outstanding T4 Trade Report would still be matched with other party.

In this case, Trading IDs that are in the Base PTLG will be unable to enter orders and quotes (MO31, MO33, MO37, MO93 and MO96) for that product, as they are restricted by the Intraday Position Limit breach.

On the other hand, Trading IDs that are not in the Base PTLG (in other PTLGs created by the Risk Limit Manager) will still be able to enter orders and quotes except Block Trades.

3.6.2 Formulas for the 11 Intraday Position Limit Risk Counters:

Intraday Position Limits Counters	Formula
Open Buy	The current number of open contracts on the buy side (Exclude Block Trade)
Open Sell	The current number of open contracts on the sell side (Exclude Block Trade)
Traded Bought	The current number of traded contracts on the buy side (Exclude Block Trade)
Traded Sold	The current number of traded contracts on the sell side (Exclude Block Trade)
Total Buy	Open Buy + Traded Bought (Exclude Block Trade)
Total Sell	Open Sell + Traded Sold (Exclude Block Trade)
Traded Net	Absolute value of (Traded Bought – Traded Sold)
Total Net Buy	Open Buy + Traded Bought – Traded Sold (Exclude Block Trade)
Total Net Sell	Open Sell + Traded Sold – Traded Bought (Exclude Block Trade)
Block Trade Bought	The current number of traded block trade contracts on the buy side
Block Trade Sold	The current number of traded block trade contracts on the sell side

Note:

1. Intraday Position Limits count the exposure in terms of the accumulated number of contracts by product Tradables
2. For Non-Base PTLGs, all consumption on “Block Trade Bought” and “Block Trade Sold” will be counted to the corresponding Base PTLG of the same EP Mnemonic

3.6.3 Counting and Rejection Mechanism for Intraday Position Limits

The counting and rejection mechanism are summarized in the table below.

	Count in Exposure	Reject on breach	Reject at Base PTLG Breach
MO4 (Order Deletion)			
MO31 (Normal Orders)	✓	✓	
MO33 (Order Alteration)	✓	✓	
MO37 (One sided / Two sided Quotes)	✓	✓	
MO74 (Block Trade – Pending T4 Deletion)			
MO75 (Block Trade – T4)*	✓ (Counted when matched)	✓	✓
MO76 (Block Trade – T1)*	✓	✓	✓
MO77 (Block Trade – T2)*	✓	✓	✓
MO93 (Mass Quotes)	✓	✓	
MO96 (Mass Quotes)	✓	✓	
MO97 (Indicative Quotes)			
MO99 (Order Activation)	✓	✓	

**MO75, MO76 and MO77 will only count towards the "Block Trade Bought" and "Block Trade Sold" counters in BASE PTLG.*

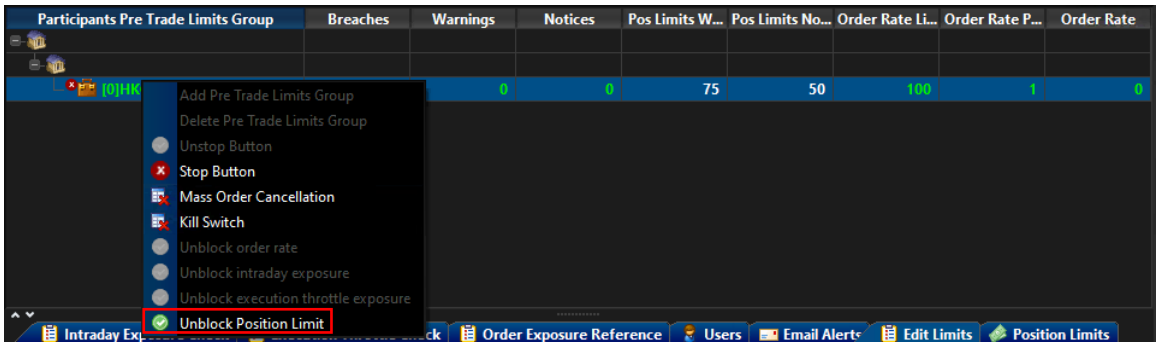
The Tradable will be blocked upon a limit breach by any 1 of the 11 relevant Intraday Position Limit exposures. Subsequent orders of the blocked Tradable by the OAPI / HKATS Online Sessions assigned to the PTLG will be rejected, and the session will receive an OAPI return code for the order rejection:

(-850014) "User has exceeded Position Limit".

Note:

> Upon a breach on the Tradable, orders from other unblocked Tradables will still be accepted, only orders of the blocked Tradable will be rejected

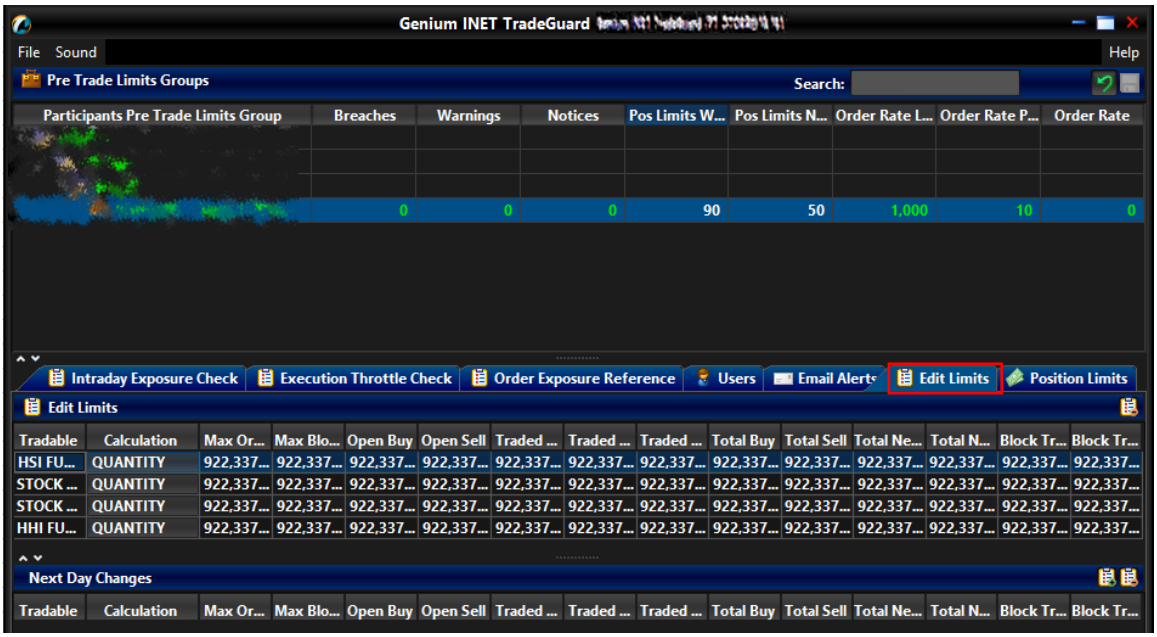
To unblock, the user has to make an adjustment / wait until the relevant limit value > the relevant Intraday Position Limit exposure value as the condition for unblock. “Unblock Position Limit” in the menu for Emergency Buttons will be undimmed once the condition for unblock is fulfilled, which includes keeping the “Edit Limit” Tab or “Position Limits” Tab opened. For limit amendments, please refer to the Section 2.13.4 for details.



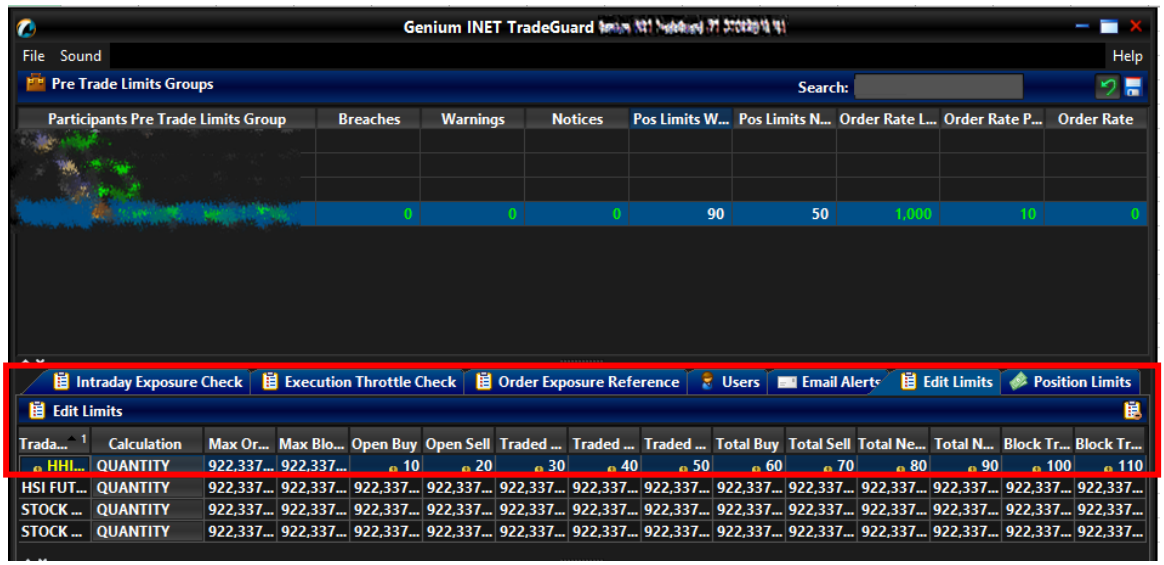
3.6.4 Changing Intraday Position Limits

To edit the Intraday Position Limits of an existing Tradable in the Edit Limits Panel, complete the following steps:

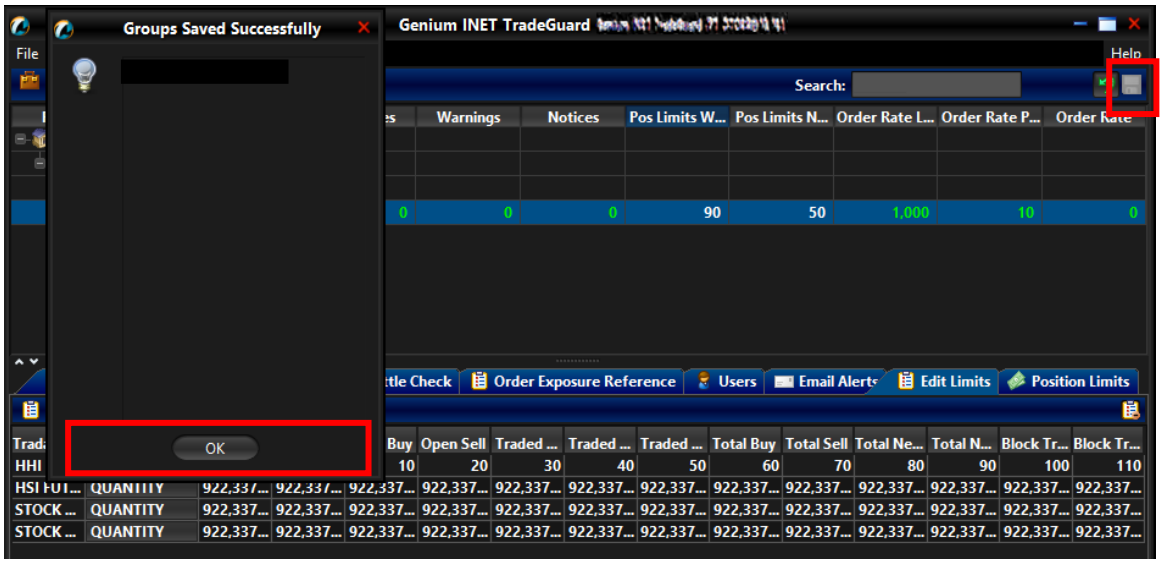
Step 1: Select a PTLG, then choose “**Edit Limits**” tab.



Step 2: In the Edit Limits Panel, input a new limit on the Position Limits counters (5th to 15th column) to change the Tradable' s Intraday Position Limit.



Step 3: Click "**Save**" on the top right hand corner of the window. The Save Successful dialogue box appears confirming the changes on the PTLG(s) is made.



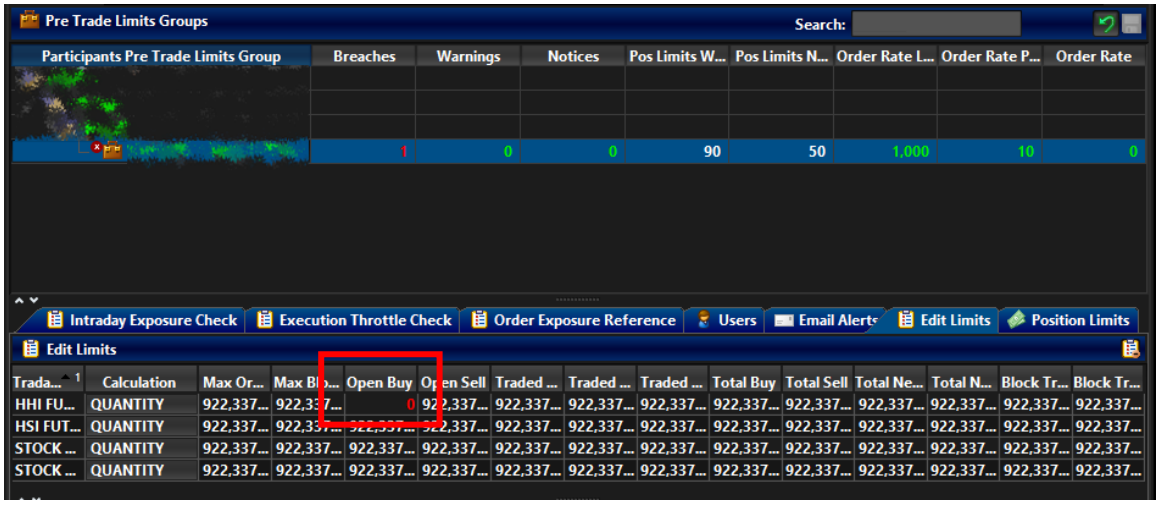
Step 4: Click "**OK**" to close the confirmation window.

3.6.5 Notice, Warning, Breach and Unblock

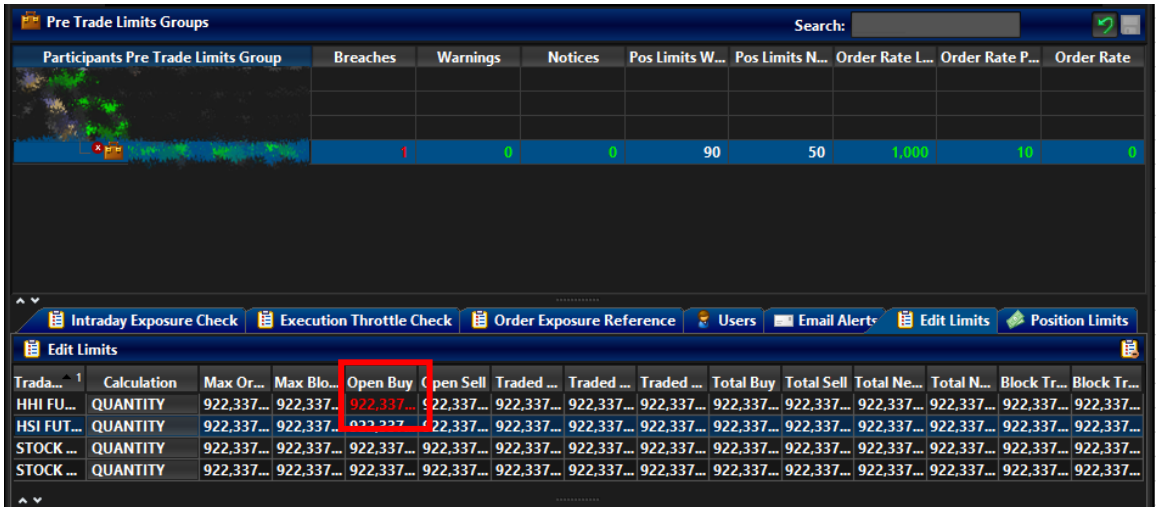
When an Intraday Position Limit is breached, a “Block” will be triggered on the subject Tradable, subsequent orders sent by the Trading ID under the PTLG on the Blocked Tradable will be rejected. Also, Trading IDs will not be able send Block Trades, including T1, T2 and T4 Trade Reports, while outstanding T4 Trade Report could still be matched with the respective counterparty. A breach only occurs when the exposure is **greater than** the limit set, so PTRM could still allow a large order right before the limit is breached.

Notice and Warning levels can be set for alerts before limit is breached. When Intraday Position Limits is breached, the subject Tradable will be blocked. To unblock the Intraday Position Limits of the subject Tradable, the Risk Limit Manager has to manually lift the breach. This can be done by completing the following steps:

Step 1: Select a PTLG that has breached Intraday Position Limits and go to “**Edit Limits**” tab

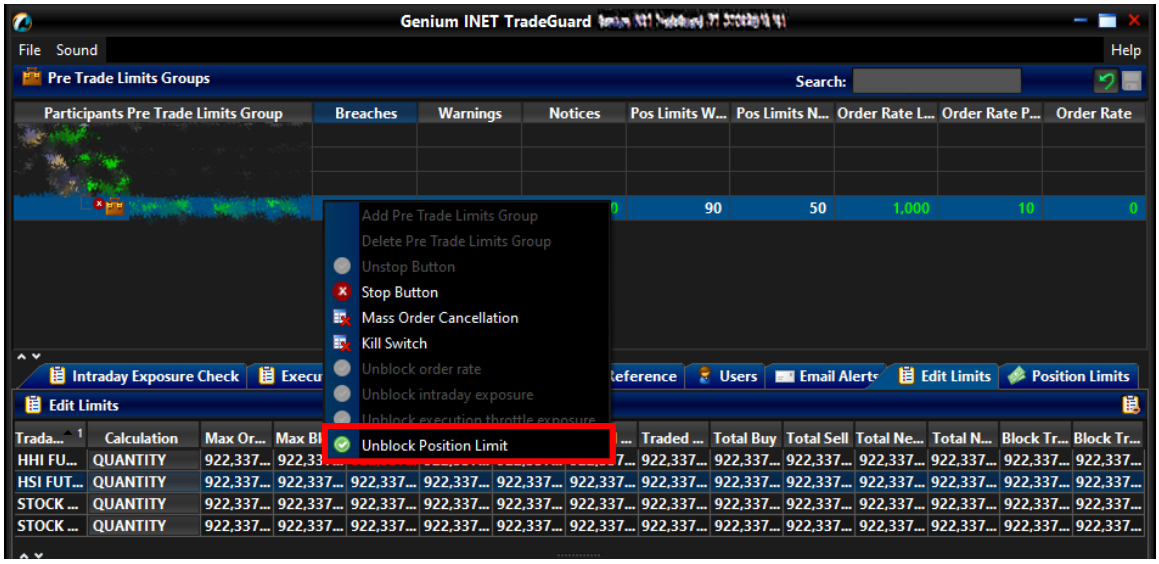


Step 2: Set the Intraday Position Limits of a Blocked Tradable to a greater level than the subject exposure. (Refer to Section 3.6.4 for limit amendment) Alternately, GUI Users can also cancel outstanding orders such that the subject exposure will decrease until it is below the current Intraday Position Limits. Order cancellation can still be done on a breached PTLG on their Trading ID.



Step 3: Select the "**Edit Limit**" Tab or "**Position Limit**" Tab. Otherwise, the unblock button would be dimmed.

Step 4: Right-click on the subject PTLG and then select "**Unblock Position Limit**" from the menu (there will be no confirmation window for this action).



Step 5: The breach will then be lifted. The subject PTLG will be able to enter orders of the subject Tradable again.

3.6.6 Point to Note for Intraday Position Limits

1. The risk consumption of unmatched Block Trades (Pending T4 Block Trade) will not be counted.

2. For combo series, risk consumption by individual legs will be counted separately in the underlying instrument tradable.

3. If the specific instrument on the Base PTLG was blocked, no Block Trades for such product will be able to execute by other PTLGs of the same EP Mnemonic.

4. All the blocked instrument will be unblocked after HKATS day end batch. If any one of the limits is set as 0, such instrument for that PTLG will be blocked immediately at the start of the day.

Important: Note that all outright, combo and Block Trade of such tradable will be blocked if position limit is breached.

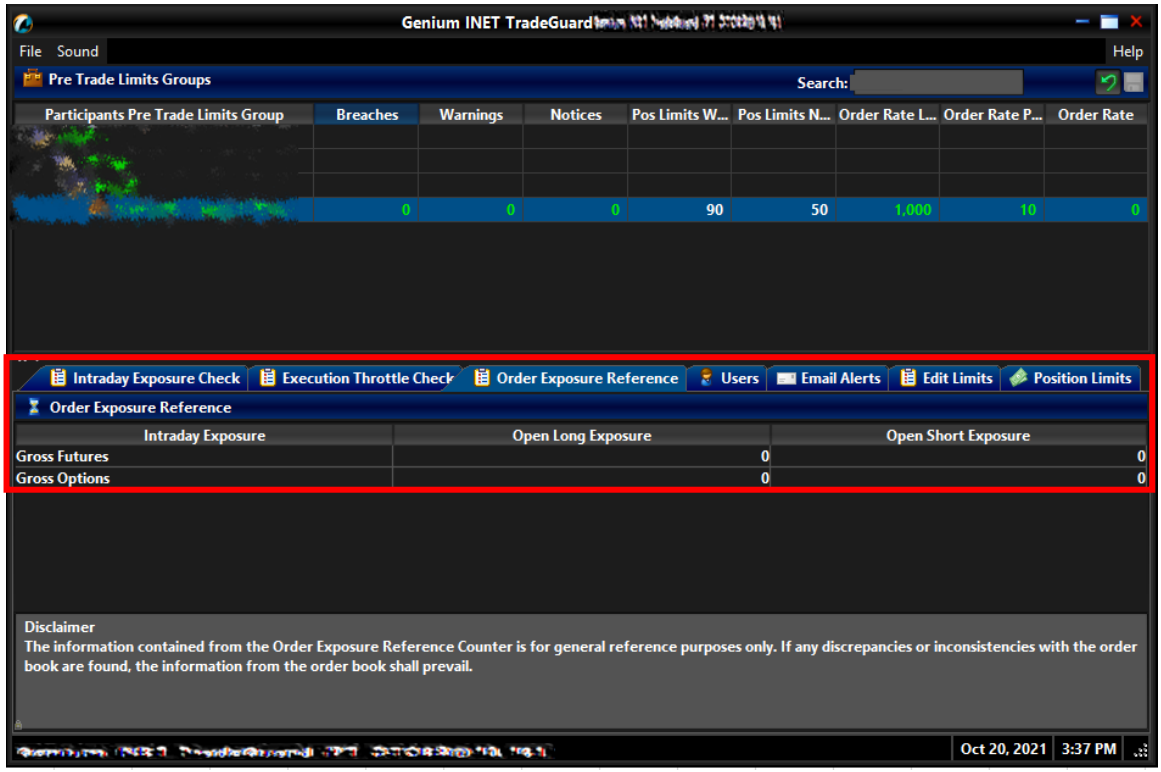
5. The instrument tradable cannot be unblocked when the value in the counters is still bigger than the corresponding limit.

6. Setting the value of Notice and Warning Threshold to 0 will disable the 2 alerts.

7. Different from Intraday Exposure Check and Execution Throttle Limits, intraday created instrument series will also count towards to relevant instrument Tradable if the Tradable has been setup.

8. To unblock breached Intraday Position Limits, Risk Limit Managers must click on either “Edit Limits” tab or “Position Limits” tab.

3.7 Order Exposure Reference Counters



Order Exposure Reference Counters contains 4 counters that allow Participants to monitor the exposure of open order in the Order Book only. The formula for Order Exposure Reference Counters follows the logic of Maximum Intraday Exposure calculation on the open order components of the formula.

There will not be any associated limits to be set by Risk Limit Managers for Order Exposure Reference Counters as these counters are for reference only.

	Count in Exposure
MO4 (Order Deletion)	✓
MO31 (Normal Orders)	✓
MO33 (Order Alteration)	✓
MO37 (One side / Two sided Quotes)	✓
MO74 (Block Trade – Pending T4 Deletion)	
MO75 (Block Trade – T4)	
MO76 (Block Trade – T1)	
MO77 (Block Trade – T2)	
MO93 (Mass Quotes)	✓
MO96 (Mass Quotes)	✓
MO97 (Indicative Quotes)	
MO99 (Order Activation)	✓

3.7.1 Exposure Handling after Emergency Button Executions

Emergency Button	Expected Order Reference Counter Behavior
Mass Order Cancellation	• All counters resets to 0
Stop	• No change in Order Reference Counters
Kill Switch	• All counters resets to 0
Unstop	• No change in Order Reference Counters

Participants that have executed Mass Order Cancellation and Kill Switch can make reference to the Order Exposure Counters of that Group/ EP Mnemonic that all related PTLG(s) have been reset to 0. EPs are reminded that the information contained from the Order Exposure Reference Counter is for general reference purposes only. If any discrepancies or inconsistencies with the order book are found, the information from the order book shall prevail.

3.8 File Uploading Limits

Risk limits and Parameters can be added/deleted/modified by file upload as Intraday or Next Day Changes. Risk Limit Managers must use the specified format to ensure limits/parameters are imported correctly.

3.8.1 Format of Limit Files Standard Record

Maximum Order Rate Limit, Maximum Intraday Exposure Check and Execution Throttle Limits

The standard record for these risk checks will use a 3-column, comma separated format:
PTLG_ID,PARAMETER_TYPE,VALUE

Maximum Order Size Limits, Maximum Block Trade Size Limits, and Intraday Position Limits

The standard record for these risk checks will use a 5-column, comma separated format:
PTLG_ID,PARAMETER_TYPE,VALUE,DELETE,TRADABLE_ID

3.8.2 Terms Description

Terms	Description
PTLG_ID	The ID string (The name) of the PTLG
PARAMETER_TYPE	A string identifying the parameter to be set. This field must be one of values in the table below
VALUE	Use the value column to set the parameter identified in the PARAMETER_TYPE column.
DELETE	Only used in a MAX_SIZE record. Set as “Y” to delete a tradable. Set to “N” to add a tradable
TRADABLE_ID	Use for identifying a tradable.

3.8.3 File Upload Template

Intraday Limit Changes

Amendment on Maximum Order Rate Limit

[PTLG_ID],ORDER_RATE,[VALUE]
[PTLG_ID],ORDER_RATE_PERIOD,[VALUE]

Amendment on Maximum Intraday Exposure Check

[PTLG_ID],NET_FUTURES,[VALUE]
[PTLG_ID],GROSS_FUTURES,[VALUE]
[PTLG_ID],NET_OPTIONS,[VALUE]
[PTLG_ID],GROSS_OPTIONS,[VALUE]

Amendment on Execution Throttle Limit

[PTLG_ID],EXEC_THROTTLE_PERIOD,[VALUE]
[PTLG_ID],GROSS_FUTURES_PER_TIME,[VALUE]
[PTLG_ID],GROSS_OPTIONS_PER_TIME,[VALUE]

Amend the Maximum Order Size Limits on existing tradable

[PTLG_ID],MAX_SIZE, [VALUE],N,[TRADABLE_ID]

Amend the Maximum Block Trade Size Limits on existing tradable

[PTLG_ID],MAX_BLOCK_TRADE_SIZE,[VALUE],N,[TRADABLE_ID]

Amend the Position Limits on existing tradable

[PTLG_ID],OPEN_BUY,[VALUE],N,[TRADABLE_ID]
[PTLG_ID],OPEN_SELL,[VALUE],N,[TRADABLE_ID]
[PTLG_ID],TRADED_BOUGHT,[VALUE],N,[TRADABLE_ID]
[PTLG_ID],TRADED_SOLD,[VALUE],N,[TRADABLE_ID]
[PTLG_ID],TRADED_NET,[VALUE],N,[TRADABLE_ID]
[PTLG_ID],TOTAL_BUY,[VALUE],N,[TRADABLE_ID]
[PTLG_ID],TOTAL_SELL,[VALUE],N,[TRADABLE_ID]
[PTLG_ID],TOTAL_NET_BUY,[VALUE],N,[TRADABLE_ID]
[PTLG_ID],TOTAL_NET_SELL,[VALUE],N,[TRADABLE_ID]
[PTLG_ID],BLOCK_TRADE_BOUGHT,[VALUE],N,[TRADABLE_ID]
[PTLG_ID],BLOCK_TRADE_SOLD,[VALUE],N,[TRADABLE_ID]

Next Day Limit Changes

Amendment on Maximum Intraday Exposure Check

[PTLG_ID],OPTIONS_COEFFICIENT,[VALUE]
[PTLG_ID],FUTURES_COEFFICIENT,[VALUE]

Add new instrument tradable (Use either one of the below) *

[PTLG_ID],MAX_SIZE, [VALUE],N,[TRADABLE_ID]
[PTLG_ID],MAX_BLOCK_TRADE_SIZE,[VALUE],N,[TRADABLE_ID]
[PTLG_ID],OPEN_BUY,[VALUE],N,[TRADABLE_ID]
[PTLG_ID],OPEN_SELL,[VALUE],N,[TRADABLE_ID]
[PTLG_ID],TRADED_BOUGHT,[VALUE],N,[TRADABLE_ID]
[PTLG_ID],TRADED_SOLD,[VALUE],N,[TRADABLE_ID]
[PTLG_ID],TRADED_NET,[VALUE],N,[TRADABLE_ID]
[PTLG_ID],TOTAL_BUY,[VALUE],N,[TRADABLE_ID]
[PTLG_ID],TOTAL_SELL,[VALUE],N,[TRADABLE_ID]
[PTLG_ID],TOTAL_NET_BUY,[VALUE],N,[TRADABLE_ID]
[PTLG_ID],TOTAL_NET_SELL,[VALUE],N,[TRADABLE_ID]
[PTLG_ID],BLOCK_TRADE_BOUGHT,[VALUE],N,[TRADABLE_ID]
[PTLG_ID],BLOCK_TRADE_SOLD,[VALUE],N,[TRADABLE_ID]

Add new combo tradable*

[PTLG_ID],MAX_SIZE, [VALUE],N,[TRADABLE_ID]

*Change the value of “N” to “Y” in order to delete an existing tradable

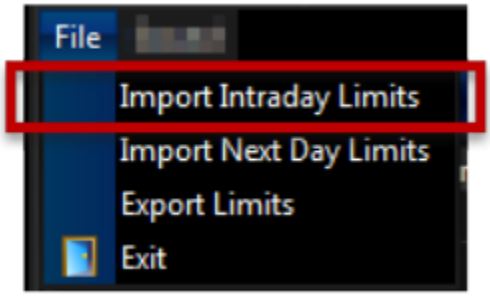
3.8.4 Importing Intraday Limit Changes

The risk limits of multiple PTLGs can be edited in bulk by importing a limits file. Intraday changes and next day changes must be done with separate file imports.

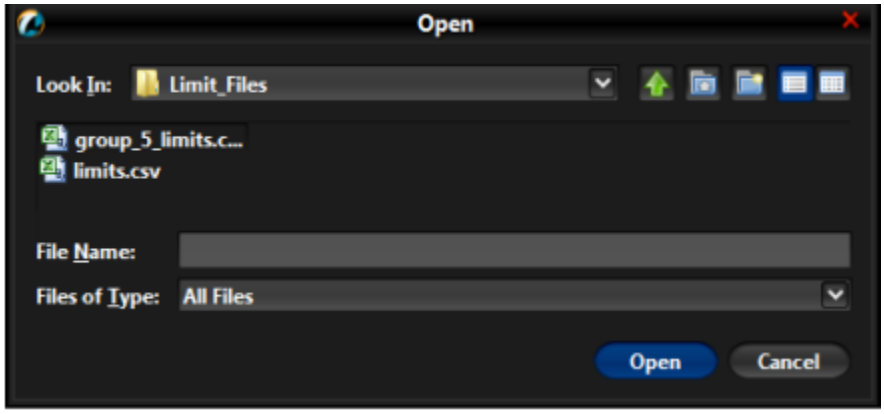
To import a set of intraday limit changes, complete the following steps:

Step 1. Prepare a file that adheres to the Limit File format that contains only intraday changes.

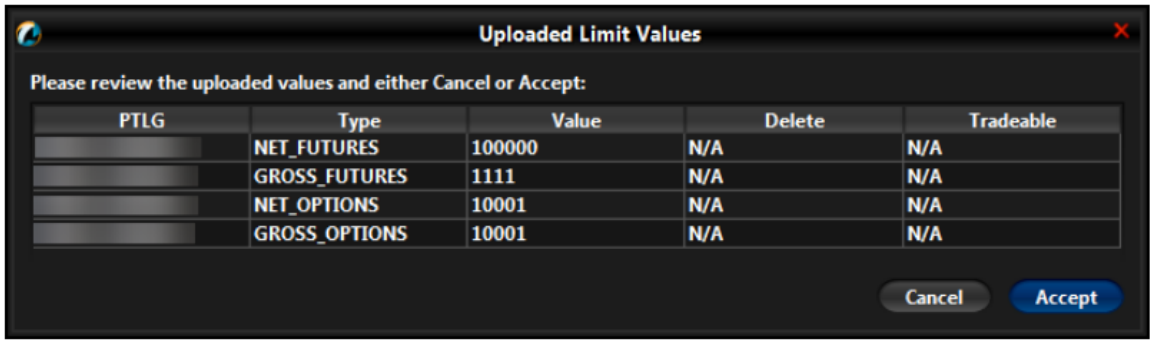
Step 2. Click the File menu and select Import Intraday Limits from the drop down menu.



Step 3. . Choose a valid limit file, then click Open.



Step 4. A summary of the changes is shown. If any errors are encountered with the file format, or changes that cannot be made intraday, then the file import will fail, and no limits will be changed.



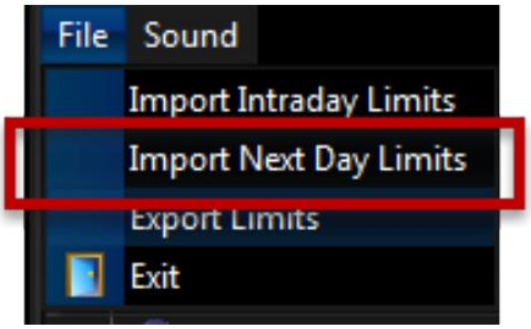
Step 5. Review the changes to limits and click Accept to apply the limit changes.

3.8.5 Importing Next Day Limit Changes

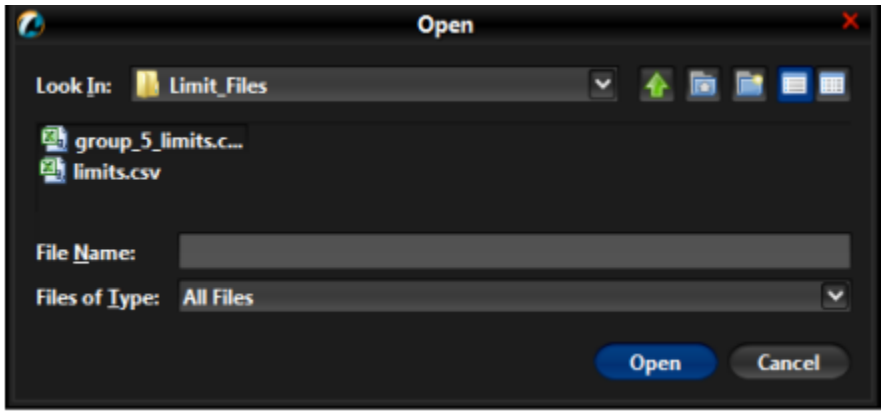
Next day changes can also be applied in bulk to PTLG via file import. However, they must be imported separately from intraday changes.

Step 1. Prepare a file that adheres to the Limit File format that contains only next day changes.

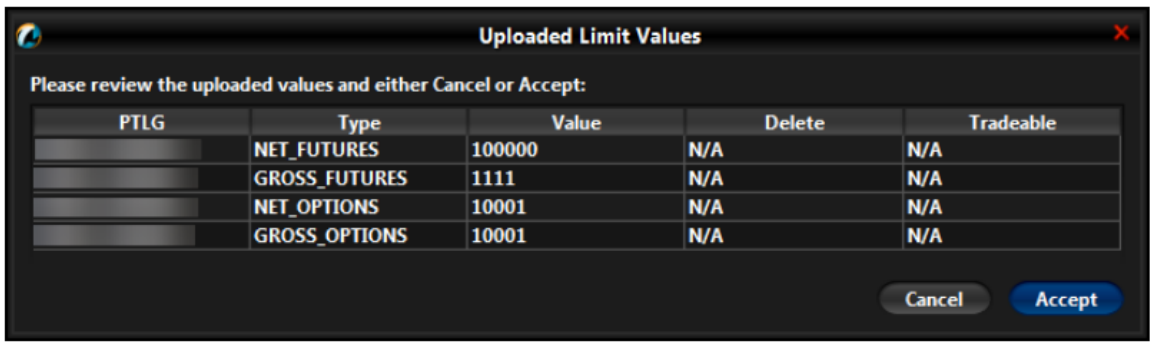
Step 2. Click the File menu and select Import Intraday Limits from the drop down menu.



Step 3. . Choose a valid limit file, then click Open.



Step 4. A summary of the changes is shown. If any errors are encountered with the file format, or changes that cannot be made intraday, then the file import will fail, and no limits will be changed.



Step 5. Review the changes to limits and click Accept to apply the limit changes

Note:

1. This is a next day change. Saving the change sends it to the exchange and becomes effective on the next day.
2. If you add a next day change, and you need to modify that next day change before the next day, you must delete that change and then add a new one.

3.9 Rejection Messages for HKATS Risk Functions System

Rejection Message	Description
(-850002) **User is in a blocked Pre-trade Risk state**	• Triggered by the “Stop Button” and the “Kill Switch”. • User in a blocked Pre-Trade Risk State is not allowed to place any new order or order modification.
(-850004) **User has breached Maximum Order Rate Limit**	• User has breached “Maximum Order Rate Limit” and the order is rejected.
(-850006) **User has breached Maximum Intraday Exposure Limit**	• User has breached at least one “Maximum Intraday Exposure Limit” and the order is rejected.
(-850008) **User has exceeded Maximum Order Size Limit**	• User has exceeded “Maximum Order Size Limit” and the order is rejected.
(-850010) **User has exceeded Execution Throttle limit**	• User has breached an Execution Throttle Limit and the transaction is rejected.
(-850012) **User has exceeded Max. Block Trade Size limit**	• User has breached a Max. Block Trade Size limit and the transaction is rejected.
(-850014) **User has exceeded Position limit**	• User has exceeded an Intraday Position Limits and the transaction is rejected.

If 2 at-trade checks (For example, Maximum Order Rate Limits and Maximum Intraday Exposure Check) are breached at the same time, GUI User will only receive the rejection message of “Maximum Order Rate Check” breach (-850004). The domination sequence will be as follows:

1. Rejection for “Stop Button “, “Kill Switch”(-850002)
2. Rejection for “Maximum Order Rate Limit” (-850004)
3. Rejection for “Maximum Intraday Exposure Limit” (-850006)
4. Rejection for “Maximum Order Size Limit” (-850008)
5. Rejection for “Execution Throttle Limit” (-850010)
6. Rejection for “Maximum Block Tarde Size Limit” (-850012)
7. Rejection for “Intraday Position Limit” (-850014)

Emergency Buttons

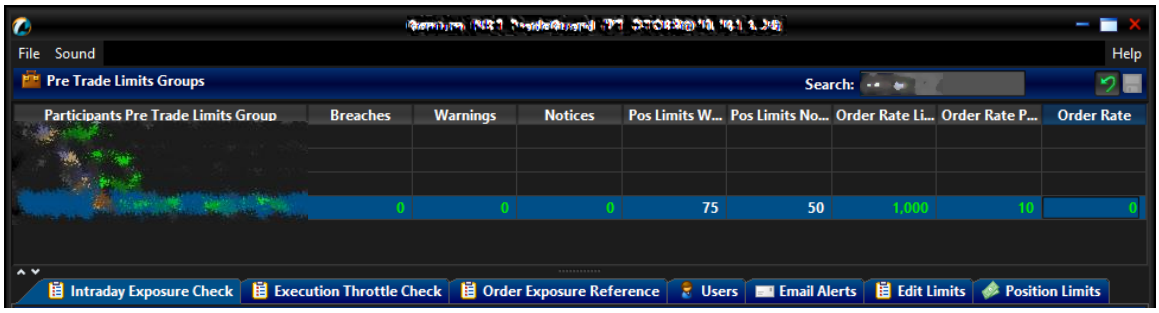
This section covers the emergency buttons available in PTRM. Participants are reminded to use these buttons in emergency situations only. Risk Limit Managers can unblock the order flow of a PTLG through the GUI, while both Risk Limit Managers and Trading Units can execute a "**Stop**" (a stop on the order flow of a PTLG), "**Mass Order Cancellation**" and "**Kill Switch**" (which is a combination of "**Stop**" and "**Mass Order Cancellation**").

3.10 The Stop Button

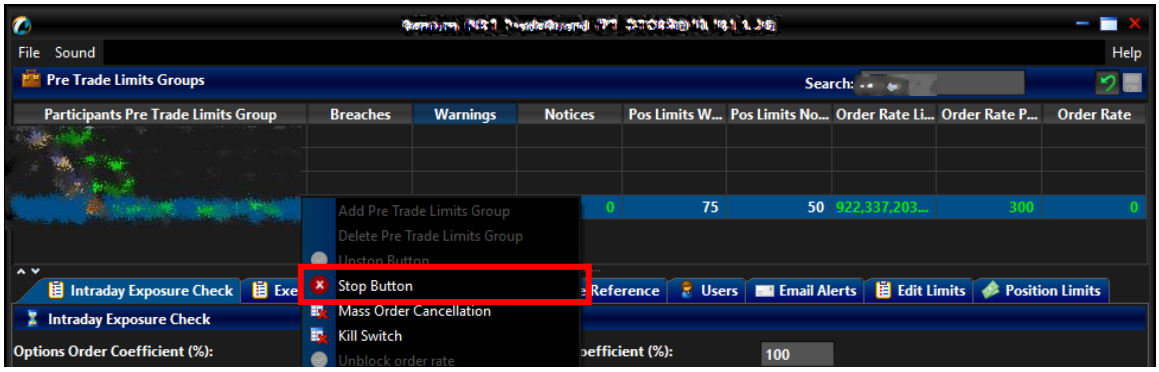
A PTLG can be stopped manually by the Risk Limit Managers or the Trading Units. Trading IDs in a stopped PTLG cannot enter new orders nor alter existing orders. However, they are able to delete outstanding orders and quotes; login and receive broadcasts and send queries. When the Base PTLG is stopped, no Block Trades can be entered by both the subject Base PTLG and other PTLGs of the same EP Mnemonic. On the contrary, if a Non-Base PTLG is stopped, only that PTLG cannot enter orders and Block Trades. Other PTLGs (including the Base PTLG in this case) can still enter both orders and Block Trades.

To stop a PTLG, complete the following steps:

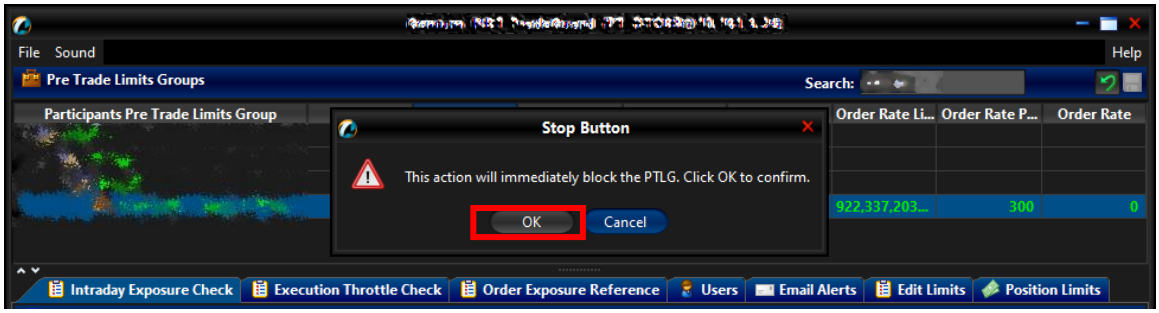
Step 1: Select a PTLG from the PTLGs Panel



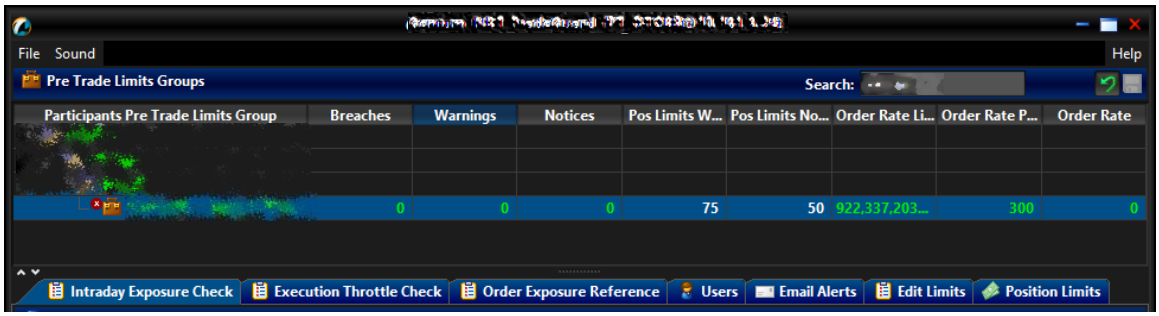
Step 2: Right-click then select "**Stop Button**" from menu



Step 3: A confirmation dialogue will appear.



Step 4: Click "**OK**" to close the confirmation window. The PTLG will be stopped. The icon that indicates this condition appears.



Note:

1. All the stop/ blocked PTLGs will be unstopped/ unblocked after the day-end batch.

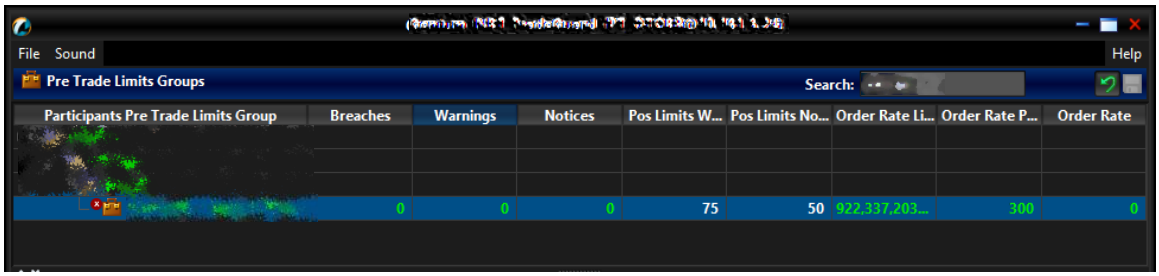
3.11 The Unstop Button

Risk Limit Manager is the only party that can Unstop or Unblock a PTLG through HKATS Risk Functions. Unstopping or Unblocking the PTLG will resume order entry of that PTLG.

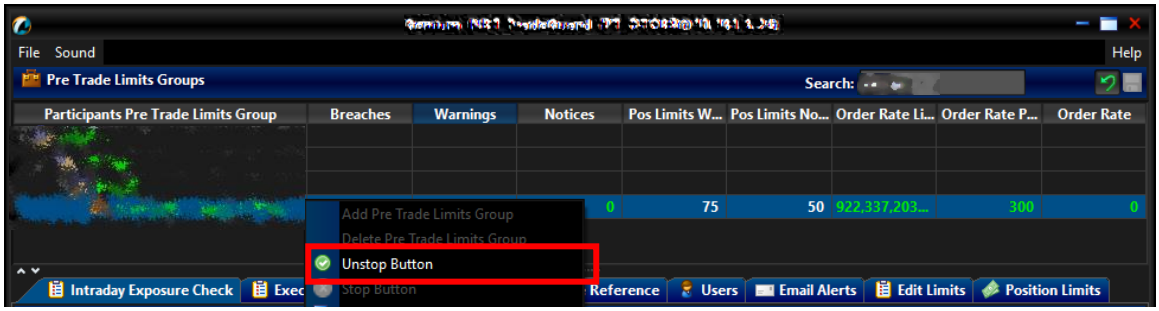
Functions	Stop
Unstop Button	- After the Stop Button or the Kill Switch
Unblock Button	- After a breach in either the Maximum Order Rate Limit, one of the Maximum Intraday Exposure Limits, Execution Throttle Limits or Intraday Position Limits

PTLGs will not be unstopped **automatically** during the day. To unstop a PTLG, the Participant must do it manually. If the stopped PTLG is not unstopped manually during day, it will be automatically unstopped at the beginning of next day. Risk Limit Managers can execute other emergency buttons after the PTLG has been stopped. In order to unstop, complete the following steps:

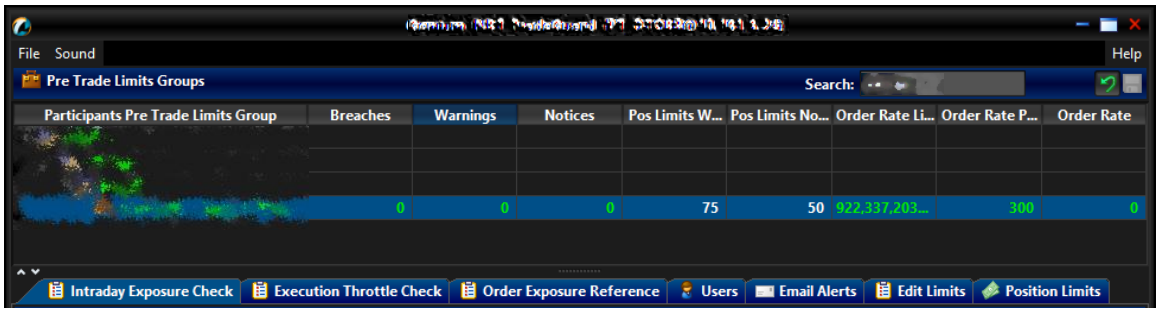
Step 1: Select a stopped PTLG in the PTLGs Panel.



Step 2: Right click then select "**Unstop Button**".



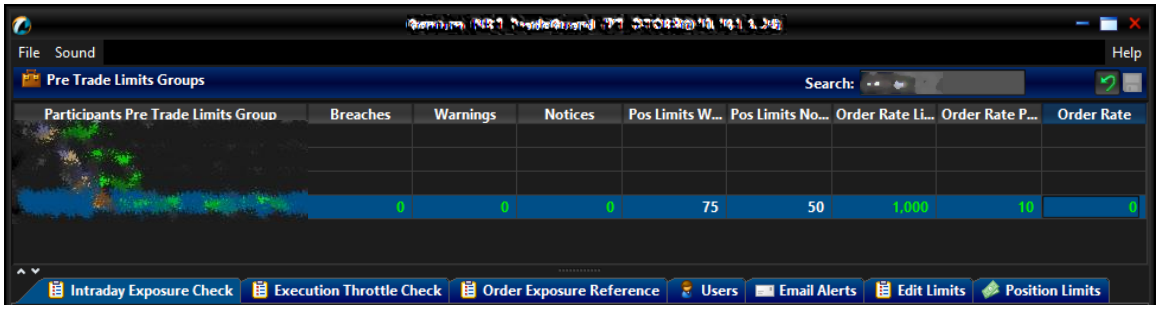
Step 3: The PTLG will be unstopped. Trading IDs in the group will be allowed to enter or amend orders again.



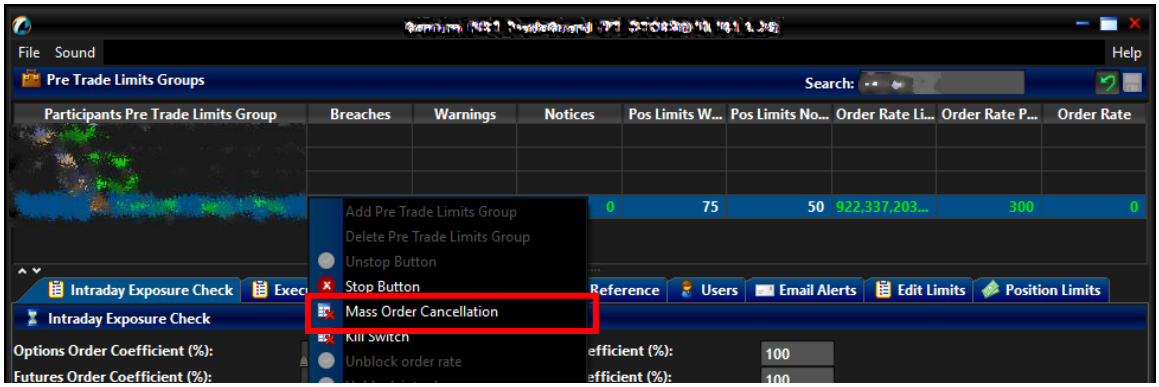
3.12 Mass Order Cancellation

Mass Order Cancellation cancels all open orders, quotes and unmatched T4 block trades that belong to Trading IDs of a PTLG. To execute Mass Order Cancellation for a PTLG, complete the following steps:

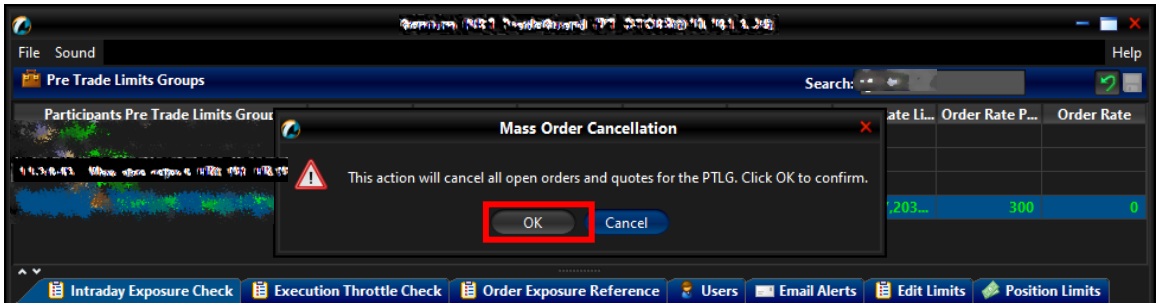
Step 1: Select a PTLG.



Step 2: Right-click and select "**Mass Order Cancellation**" from the menu.



Step 3: Click "**OK**" to confirm. All open orders for the selected PTLG will be cancelled.



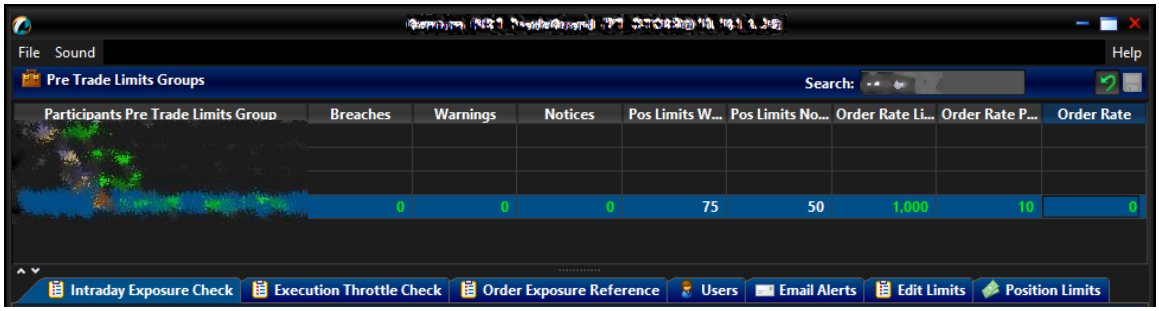
Note:

1. Mass Order Cancellation by HKATS Risk Functions applies in restricted trading sessions that allows order deletion by MO4.

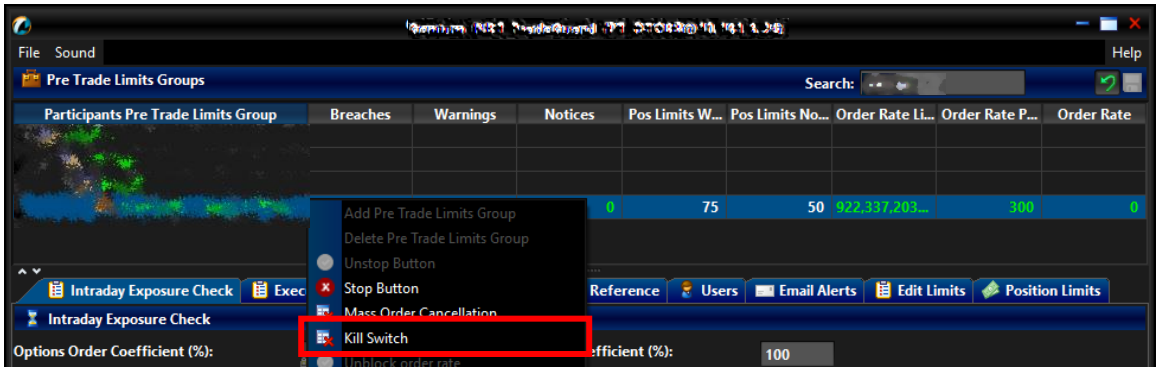
3.13 The Kill Switch

The Kill Switch function in PTRM performs both the Stop and Mass Order Cancellation actions in together. To activate the Kill Switch on a PTLG, complete the following steps:

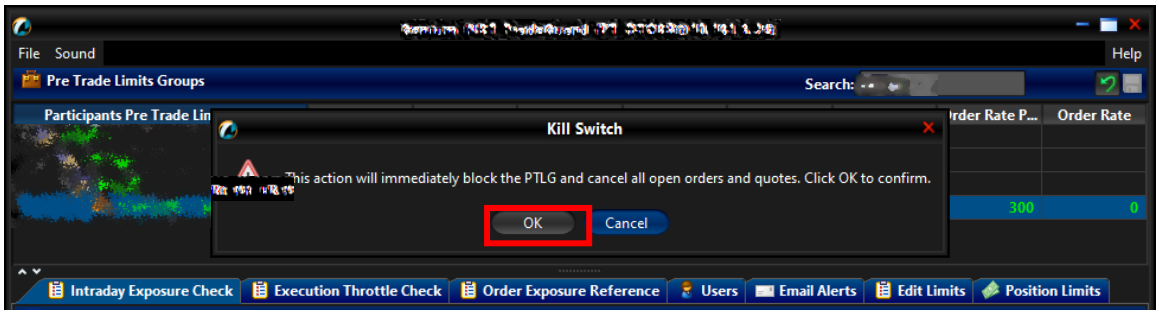
Step 1: Select a PTLG.



Step 2: Right-click and select "**Kill Switch**" from the menu.



Step 3: Click "**OK**" to confirm.



Note:

1. All open orders of a PTLG will be cancelled and the PTLG will be put into a "Stopped" state after activating the "Kill Switch".
2. Use the Unstop Button to allow order entry again after activating the Kill Switch
3. All the stopped PTLGs will be unstopped in the start of next day
4. **Risk Limit Managers/ Trading Units are required to contact HKATS Help Desk upon any Emergency Buttons activation**

3.14 Access to Emergency Buttons

Both Risk Limit Manger and Trading Unit can trigger the emergency buttons – Stop, Mass Order Cancellation and Skill Switch. However, only Risk Limit Manager can unstop or unblock a PTLG and thus resume order entry of that PTLG.

PTRM GUI User Type	Stop	Unstop	Mass Order Cancellation	Kill Switch
Risk Limit Manager	✓	✓	✓	✓
Trading Unit User	✓		✓	✓

3.15 Points to note of Emergency Buttons

3.15.1 Notes on Stop Button

1. If a PTLG is stopped by a Trading Unit, only their Risk Limit Manager can unstop the PTLG. It is important to notice that the stop function will not affect the corresponding Trading ID's ability to create Tailor-Made Combinations (TMCs), but will stop the Trading IDs from placing orders on the corresponding TMCs.

2. HKATS Risk Functions associates all Block Trade activities to the Base PTLGs. Therefore, if the Base PTLG is stopped, all block trades (T1, T2, T4), cannot be entered by all the PTLGs of the same Participant Mnemonic. All the stopped PTLGs will be unstopped after day-end batch.

3.15.2 Notes on Mass Order Cancellation/Kill Switch

1. If Trading ID A is assigned from PTLG 1 to PTLG 2 **before the change becomes effective** the next day:
    a. placing a Mass Order Cancellation (either by Mass Order Cancellation alone or by Kill Switch) on PTLG 2 assigned with Trading ID A will cancel the orders of PTLG 2 but **not** the orders of Trading ID A during the same day and

    b. placing a Mass Order Cancellation on PTLG 1 will cancel the orders of PTLG 1 and **also** the orders of Trading ID A during the same day although Trading ID A was assigned to PTLG 2 and

    c. if during the same day, Trading ID A is removed further from PTLG 2 and then being re-assigned to another PTLG 3, placing Mass Order Cancellation subsequently on either PTLG 2 or PTLG 3 will only cancel orders of the subject PTLG but not the orders of Trading ID A

2. Subsequent orders entered into HKATS will be rejected after Stop or Kill Switch. These rejections will not be shown in the Order History of HKATS Online.

3. After-hour / central inactive (lost connection) orders will also be cancelled.

4. All the stopped PTLGs will be unstopped at the start of next day.

Note:

Emergency Buttons can be executed not only at the PTLG level but can also be executed at the EP Mnemonic level or the Clearing Participant level:

1) If executed at EP Mnemonic level, all PTLGs of the same EP Mnemonic will be affected
2) If executed at Clearing Participant level, all PTLGs cleared by the Clearing Participant will be affected

Best Practice

1. Participants are advised to check the relevant order book after applying the Kill Switch/ Mass Order Cancellation Button to confirm the order cancellation
2. In the case of a breach or an activation of any Emergency Button, Risk Limit Managers/ Trading Units shall notify the Exchange(s) and explain the reason behind for such actions. Emergency Buttons in PTRM are strictly for emergency use only. They shall not be treated as part of normal trading functions. It is a good practice for Risk Limit Managers to have the HKATS Help Desk in place for emergency reporting
3. Multiple concurrent connections by Risk Limit Managers of the same EP shall not perform saving changes simultaneously on the same PTLG. Participants shall have procedures in place for making changes to PTRM. Non-urgent changes should be made in non-trading hours.
4. The Exchange(s) reserves the right to disable HKATS Risk Functions when necessary. In the event that HKATS Risk Functions is disabled, please note the following:
    a. Trading will still be continued
    b. All PTRM GUI users will be forced-logged out
    c. All pre-set PTRM will be ineffective temporarily
    d. Orders from previously Blocked and/or Stopped PTLGs
5. Ensure good connection of PTRM GUI for daily operations and emergency usage. The Exchange(s) may reject Participants' request to process on-behalf the Prescribed Risk Controls in PTRM.
6. Participants are advised to notify their clients about PTRM in HKATS and the possible order rejections
7. Risk Limit Managers/ Trading Units are advised to ensure all PTLGs under their management are under proper monitoring
8. When performing actions such as creating/ deleting PTLGs, GUI users are advised to wait until the next day to check and confirm the changes, before setting limits for the corresponding PTLGs
9. Any type of risk limit settings, file uploads or Trading ID assignments among PTLGs, etc., are recommended to be done in non-trading hours. For Next Day Changes, Participants are advised to reconcile on the next day for their correctness
10. Notes for GCPs (Risk Limit Managers) and NCPs (Trading Units):

For GCPs' Risk Limit Managers	• Maintain good communication with their NCP clients about the risk limit settings on their PTLGs • Provide emergency contact for their NCP clients in case the Emergency Button s are executed, as well as for PTRM enquiries and operations • Set up email alerts for their NCP clients per PTLG • Making necessary changes in response to their NCPs' creation or deletion of Trading IDs
For NCPs' Trading Units	• Inform their Risk Limit Manager about any creation or deletion of Trading IDs for making necessary changes on the corresponding PTLGs

11. Trading Units of a self-clearing EP shall inform their Risk Limit Manager about any creation or deletion of Trading ID for making necessary changes on the corresponding PTLG
12. For receiving notification email, PTRM allows email addresses to be added in real-time. However, deletion of email addresses will be effective the next day.

Contingency Measures

In case of HKATS Risk Functions failure, the Exchange(s) has the absolute authority to disable HKATS Risk Functions to avoid a trading halt. Participants shall **not** solely rely on HKATS Risk Functions as it is only a back-stop complimentary to Participants' risk controls. In addition, participants should review their own procedures to incorporate the impact regarding the introduction of HKATS Risk Functions.

3.16 Connectivity Issues

In normal condition, GUI Users shall connect PTRM via the primary site gateway using the specific hostname and port assigned. GUI Users are advised to follow the connection details below under given contingency scenarios:

3.16.1 Failure of Gateway

In case of a gateway failure, GUI Users will be logged out by system and they are required to switch to another gateway of the same site manually. For example, when primary gateway 1 (PGENRGW001) experienced a failure, GUI Users are required to login to primary gateway 2 (PGENRGW002) **manually**.

Login to another gateway within the same site:

HKATS Risk Functions Login IDs	Server Gateway for HKATS Risk Functions Connection	Port Number
P_CXXXYYYYY	PGENRGW001	8090
P_CXXXYYYYY	PGENRGW002	8090

Example URL for logging into the assigned Primary Gateway:
https://pgenrgw001.hkex.com.hk:8090/grx

Example URL for logging into the assigned Primary Gateway:
https://pgenrgw002.hkex.com.hk:8090/grx

Change "1" into "2"

3.16.2 Failure of Server

In case of server failure, connections will be switched to another server within the same site automatically. For example, when server 1 experienced a failure, GUI User's connection will be switched to server 2 within the same site automatically, vice versa. HKATS Risk Functions is designed with a full resilience feature that if all servers in the primary site fail, GUI Users will be notified to log into the gateways at the secondary site for HKATS Risk Functions connections without a trading halt.

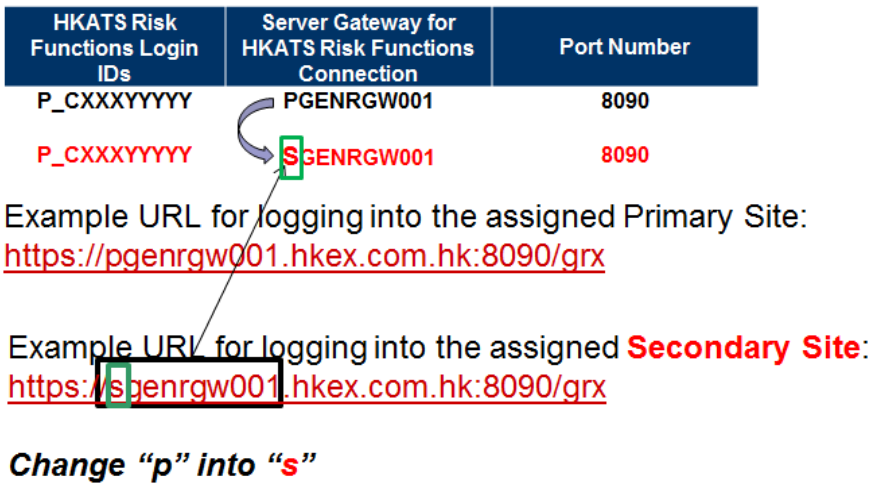
3.17 Disabling HKATS Risk Functions

In the unlikely event of a failure in the HKATS Risk Functions, the Exchange(s) has the ability to disable HKATS Risk Functions including all risk checks and emergency buttons while still allowing trading to continue in HKATS. Under this scenario, HKATS Risk Functions may not resume within the same day. Participants shall continue to use their own pre-trade risk controls and functions. All GUI Users will be logged out from the system while the events after disabling HKATS Risk Functions can also be captured. Participants shall receive announcement from the Exchange(s) regarding the contingency arrangement of disabling HKATS Risk Functions through HKATS Market Message. Since the risk checks are disabled, Stopped/blocked PTLGs will once again be able to place orders in the market. Participants will receive resumption of HKATS Risk Functions announcement from the Exchange(s) in due course.

3.18 Site Failover

Whenever there is an occurrence of site failover, the Exchange will notify all Participants through the HKATS Market Message or any other means of broadcasting channels. Once the failover completed, the Exchange will notify all Participants immediately through HKATS Market Message, or any other means of broadcasting channels. PTRM GUI users are required to connect Secondary Site the corresponding assigned gateway (SGENRGW001 / SGENRGW002) and port (8090-8093) of HKATS Risk Functions manually upon recovery. For more details regarding HKATS Site Failover, please refer to HKATS User's Guide (Contingency Measures).

Login to HKATS Risk Functions via Secondary Site:



Note:

1. All orders in order book will be removed after site failover. Previously accumulated exposure in Intraday Exposure for outstanding orders will be offset if Order Coefficients are set as non-zero.
2. Previously accumulated exposure in Intraday Position Limits and Order Reference Counters for outstanding orders will be offset
3. If the PTLG was blocked before the site failover, it will remain the same status after the site failover.

3.19 Help Desk

Help desk service of the Exchange operates during trading hours of the HKATS market. Users may contact the help desk for assistance by calling the HKATS hotline at 2211 6360. All calls to the HKATS hotline would be recorded.

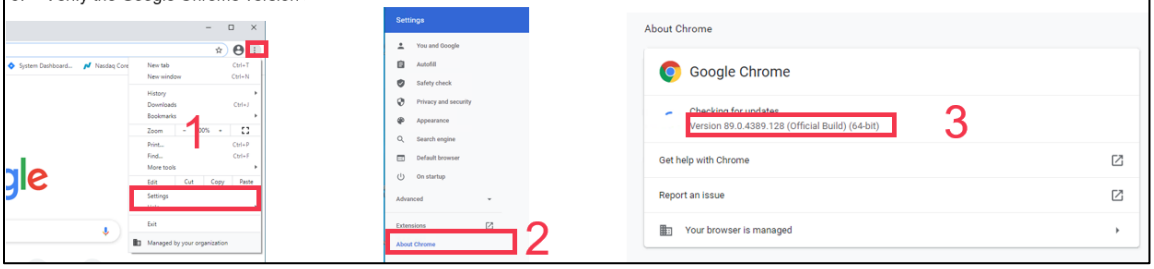
In the rare event that the telephone system of the HKATS hotline fails to operate, the Exchange may request users to contact the help desk by writing to the e-mail address deriopt@hkex.com.hk for supplementary information on orders or trades related matters.

Appendix A Troubleshoot PTRM Connectivity Problems

Before user failed to login / launch PTRM, please check the Chrome version, Java version and the existing Java cache.

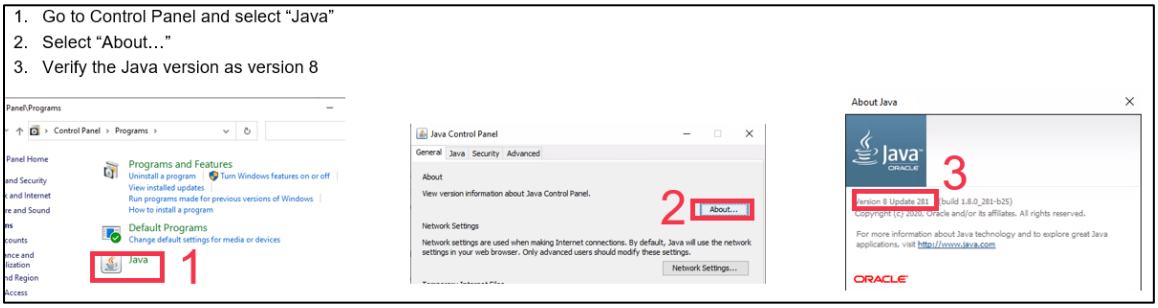
Check Chrome Version

1. Select the icon as circled from below and select “Settings”
2. Select “About Chrome”
3. Verify the Google Chrome version



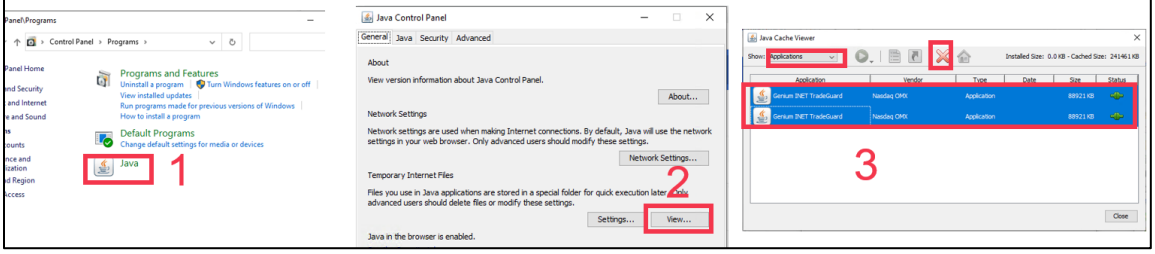
Check JAVA Version

1. Go to Control Panel and select “Java”
2. Select “About…”
3. Verify the Java version as version 8



Delete JAVA Cache

1. Go to Control Panel and select “Java”
2. Select “View…” under “Temporary Internet Files”
3. Select “Application” and highlight all existing Java Cache then press the delete icon



After performing the three checking above, please install the PTRM application by accessing the designated gateway URL and port through Google Chrome as mentioned in section 1.2.If the site cannot be reached, user can to use the gateway IP directly instead of the host name. However, EPs are advised to map correct hostname on their host name table. If the problem persists please report your problem to hkatssupport@hkex.com.hk with screen capture and contact us via +852 2211 6360.

Appendix B Templates of Email Notifications (Notice, Warn and Breach)

Templates of Email notifications (Maximum Intraday Exposure Check)

Maximum Intraday Exposure Check notice

Subject: NOTICE Breach Event - HKCZZA_HKZZA_BASE – ZZA1234
Breach Event
Group: HKCZZA_HKZZA_BASE
User: ZZA1234
Risk Check: Net Futures Short
Time: Tue Oct 19 09:29:20 HKT 2021
Event Level: NOTICE
Consumed: 1719552
Limit: 2700000

Maximum Intraday Exposure Check warn

Subject: WARN Breach Event - HKCZZA_HKZZA_BASE – ZZA1234
Breach Event
Group: HKCZZA_HKZZA_BASE
User: ZZA1234
Risk Check: Net Futures Short
Time: Tue Oct 19 09:29:21 HKT 2021
Event Level: WARN
Consumed: 2519552
Limit: 2700000

Maximum Intraday Exposure Check breach

Subject: BREACH Breach Event - HKCZZA_HKZZA_BASE – ZZA1234
Breach Event
Group: HKCZZA_HKZZA_BASE
User: ZZA1234
Risk Check: Net Futures Short
Time: Tue Oct 19 09:29:25 HKT 2021
Event Level: BREACH
Consumed: 2819552
Limit: 2700000

Execution Throttle Limits notice

Subject: NOTICE Breach Event - HKCZZA_HKZZA_BASE – ZZA1234
Breach Event
Group: HKCZZA_HKZZA_BASE
User: ZZA1234
Risk Check: Gross Futures Short Per Time
Time: Tue Oct 19 09:29:20 HKT 2021
Event Level: NOTICE
Consumed: 1719552
Limit: 2700000

Execution Throttle Limits warn

Subject: WARN Breach Event - HKCZZA_HKZZA_BASE – ZZA1234
Breach Event
Group: HKCZZA_HKZZA_BASE
User: ZZA1234
Risk Check: Gross Futures Short Per Time
Time: Tue Oct 19 09:29:21 HKT 2021
Event Level: WARN
Consumed: 2519552
Limit: 2700000

Execution Throttle Limits breach

Subject: BREACH Breach Event - HKCZZA_HKZZA_BASE – ZZA1234
Breach Event
Group: HKCZZA_HKZZA_BASE
User: ZZA1234
Risk Check: Gross Futures Short Per Time
Time: Tue Oct 19 09:29:25 HKT 2021
Event Level: BREACH
Consumed: 2819552
Limit: 2700000

Intraday Position Limits notice

Subject: NOTICE Breach Event - HKCZZA_HKZZA_BASE – ZZA1234
Breach Event
Group: HKCZZA_HKZZA_BASE
User: ZZA1234
Risk Check: Open Buy
Time: Tue Oct 19 09:29:20 HKT 2021
Event Level: NOTICE
Consumed: 175
Limit: 270

Intraday Position Limits warn

Subject: WARN Breach Event - HKCZZA_HKZZA_BASE – ZZA1234
Breach Event
Group: HKCZZA_HKZZA_BASE
User: ZZA1234
Risk Check: Open Buy
Time: Tue Oct 19 09:29:21 HKT 2021
Event Level: WARN
Consumed: 251
Limit: 270

Intraday Position Limits breach

Subject: BREACH Breach Event - HKCZZA_HKZZA_BASE – ZZA1234
Breach Event
Group: HKCZZA_HKZZA_BASE
User: ZZA1234
Risk Check: Open Buy
Time: Tue Oct 19 09:29:25 HKT 2021
Event Level: BREACH
Consumed: 281
Limit: 270

Maximum Order Size Limits breach

Subject: BREACH Breach Event - HKCZZA_HKZZA_BASE – ZZA1234
Breach Event
Group: HKCZZA_HKZZA_BASE
Instrument: HSI FUTURES
Trading ID: ZZA1234
Risk Check: Maximum Order Size Limits
Time: Mon 16 Nov 15:10:22 HKT 2015
Event Level: BREACH
Consumed: 0
Limit: 500

Maximum Block Trade Size breach

Subject: BREACH Breach Event - HKCZZA_HKZZA_BASE – ZZA1234
Breach Event
Group: HKCZZA_HKZZA_BASE
Instrument: HSI FUTURES
Trading ID: ZZA1234
Risk Check: Maximum Block Trade Size Limits
Time: Mon 16 Nov 15:10:22 HKT 2015
Event Level: BREACH
Consumed: 0
Limit: 500

Maximum Order Rate Limits breach

Subject: BREACH Breach Event - HKCZZA_HKZZA_BASE – ZZA1234
Breach Event
Group: HKCZZA_HKZZA_BASE
Trading ID: ZZA1234
Risk Check: Maximum Order Rate Limits
Time: Mon 16 Nov 15:10:22 HKT 2015
Event Level: Breach
Consumed: 11
Limit: 10

Emergency Buttons - Stop

Subject: STOP Button requested from RX GUI – HKCZZA_HKZZA_BASE
Group: HKCZZA_ZZA_BASE
Requested By: P_CZZA12345
Timestamp: Mon Nov 16 17:28:41 HKT2015

Emergency Buttons - Unstop

Subject: UNSTOP Button requested from RX GUI – HKCZZA_HKZZA_BASE
Group: HKCZZA_ZZA_BASE
Requested By: P_CZZA12345
Timestamp: Mon Nov 16 17:29:40HKT2015

Emergency Buttons – Mass Order Cancellation

Subject: Mass Cancel requested from RX GUI – HKCZZA_HKZZA_BASE
Group: HKCZZA_ZZA_BASE
Requested By: P_CZZA12345
Timestamp: Mon Nov 16 17:28:41 HKT2015

Emergency Buttons – Kill Switch

Subject: Kill Switch requested from RX GUI – HKCZZA_HKZZA_BASE
Group: HKCZZA_ZZA_BASE
Requested By: P_CZZA12345
Timestamp: Mon Nov 16 17:28:41 HKT2015

Appendix C Example Tradable Table for Maximum Order Size Limits

Instrument Tradable

Stock Index Futures & Options

Product Name	HKATS Code	Product Name Description (Class Level)	Product Name Description (Type Level)	Product Code for file upload (Class Level)	Product Code for file upload (Type Level)
CES 120 Index Futures	CHH	CHH – FUTURES	RCI FUTURES	CHHFUT	RCIF
Dividend Futures	DHH	DHH – FUTURES	DJI FUTURES	DHHFUT	DJIF
Dividend Futures	DHS	DHS – FUTURES	DJI FUTURES	DHSFUT	DJIF
Hang Seng Index Options	HSI	HSI – CALL OPTIONS	HSI CALL OPTION	HSICALL	HSIC
Hang Seng Index Options	HSI	HSI – PUT OPTIONS	HSI PUT OPTION	HSIPUT	HSIP
Hang Seng Index Futures	HSI	HSI – FUTURES	HSI FUTURES	HSIFUT	HSIF
Hang Seng China Enterprises Index Options	HHI	HHI – CALL OPTIONS	HHI CALL OPTIONS	HHICALL	HHIC
Hang Seng China Enterprises Index Options	HHI	HHI – PUT OPTIONS	HHI PUT OPTIONS	HHIPUT	HHIP
Hang Seng China Enterprises Index Futures	HHI	HHI – FUTURES	HHI FUTURES	HHIFUT	HHIF
Sector Index Futures	MBI	MBI – FUTURES	FXC FUTURES	MBIFUT	FXCF
Volatility Index Futures	VHS	VHS – FUTURES	VOL FUTURES	VHSFUT	VOLF
MSCI AC Asia ex Japan Net Total Return Index Futures	MXJ	MXJ – FUTURES	SI6 FUTURES	MXJFUT	SI6F
Hang Seng Index (Gross Total Return Index) Futures	HGT	HGT – FUTURES	PDTB6F FUTURES	HGTFUT	PDTB6F
Hang Seng Index (Net Total Return Index) Futures	HNT	HNT – FUTURES	PDTB6F FUTURES	HNTFUT	PDTB6F
Hang Seng China Enterprises Index (Gross Total return Index) Futures	HHT	HHT – FUTURES	PDTB6F FUTURES	HHTFUT	PDTB6F
Hang Seng China Enterprises Index (Net Total Return Index) Futures	HHN	HHN – FUTURES	PDTB6F FUTURES	HHNFUT	PDTB6F
Weekly Hang Seng Index Options	HSI	HSW – CALL OPTIONS	WK1 CALL OPTIONS	HSWCALL	WK1C
Weekly Hang Seng Index Options	HSI	HSW – PUT OPTIONS	WK1 PUT OPTIONS	HSWPUT	WK1P
Weekly Hang Seng China Enterprise Index Options	HHI	HHW – CALL OPTIONS	PDTB7 CALL OPTIONS	HHWCALL	PDTB7C
Weekly Hang Seng China Enterprise Index Options	HHI	HHW –PUT OPTIONS	PDTB7 PUT OPTIONS	HHWPUT	PDTB7P
Mini–Hang Seng Index Options	MHI	MHI – CALL OPTIONS	MHI CALL OPTIONS	MHICALL	MHIC
Mini–Hang Seng Index Options	MHI	MHI – PUT OPTIONS	MHI PUT OPTIONS	MHIPUT	MHIP

Mini–Hang Seng Index Futures	MHI	MHI – FUTURES	MHI FUTURES	MHIFUT	MHIF
Mini – Hang Seng China Enterprises Index Options	MCH	MCH – CALL OPTIONS	HHI CALL OPTIONS	MCHCALL	HHIC
Mini– Hang Seng China Enterprises Index Options	MCH	MCH – PUT OPTIONS	HHI PUT OPTIONS	MCHPUT	HHIP
Mini– Hang Seng China Enterprises Index Futures	MCH	MCH – FUTURES	HHI FUTURES	MCHFUT	HHIF
MSCI China (USD) Index Futures	CHI	CHI - FUTURES	MNOP6 FUTURES	CHIFUT	MNOP6F
MSCI China Net Total Return (USD) Index Futures	CHN	CHN - FUTURES	MNOP1 FUTURES	CHNFUT	MNOP1F
MSCI Taiwan (USD) Index Futures	MTW	MTW – FUTURES	MNOP2 FUTURES	MTWFUT	MNOP2F
MSCI Taiwan Net Total Return (USD) Index Futures	MWN	MWN – FUTURES	MNOP1 FUTURES	MWNFUT	MNOP1F
MSCI Japan Net Total Return (USD) Index Futures	MJU	MJU – FUTURES	MNOP1 FUTURES	MJUFUT	MNOP1F
MSCI India Net Total Return (USD) Index Futures	MIN	MIN – FUTURES	MNOP1 FUTURES	MINFUT	MNOP1F
MSCI China Free Net Total Return (USD) Index Futures	MCN	MCN – FUTURES	MNOP1 FUTURES	MCNFUT	MNOP1F
MSCI Indonesia Net Total Return (USD) Index Futures	MDN	MDN – FUTURES	MNOP1 FUTURES	MDNFUT	MNOP1F
MSCI Australia Net Total Return (USD) Index Futures	MAN	MAN – FUTURES	MNOP1 FUTURES	MANFUT	MNOP1F
MSCI Thailand Net Total Return (USD) Index Futures	MTN	MTN – FUTURES	MNOP1 FUTURES	MTNFUT	MNOP1F
MSCI Malaysia Net Total Return (USD) Index Futures	MMN	MMN – FUTURES	MNOP1 FUTURES	MMNFUT	MNOP1F
MSCI EM Asia Net Total Return (USD) Index Futures	EAN	EAN – FUTURES	MNOP1 FUTURES	EANFUT	MNOP1F
MSCI Singapore Net Total Return (USD) Index Futures	MSN	MSN – FUTURES	MNOP1 FUTURES	MSNFUT	MNOP1F
MSCI Vietnam Net Total Return (USD) Index Futures	MVN	MVN – FUTURES	MNOP1 FUTURES	MVNFUT	MNOP1F
MSCI Hong Kong Net Total Return (USD) Index Futures	MHK	MHK – FUTURES	MNOP1 FUTURES	MHKFUT	MNOP1F
MSCI Philippines Net Total Return (USD) Index Futures	MPN	MPN – FUTURES	MNOP1 FUTURES	MPNFUT	MNOP1F
MSCI Indonesia Index (USD) Futures	MIA	MIA – FUTURES	MNOP9 FUTURES	MIAFUT	MNOP9F
MSCI Emerging Markets Net Total Return (USD) Index Futures	EMN	EMN – FUTURES	MNOP1 FUTURES	EMNFUT	MNOP1F
MSCI Emerging Markets (USD) Index Futures	MEI	MEI – FUTURES	MNOP5 FUTURES	MEIFUT	MNOP5F
MSCI India (USD) Index Futures	MND	MND – FUTURES	MNOP5 FUTURES	MNDFUT	MNOP5F
MSCI Thailand (USD) Index Futures	MTD	MTD – FUTURES	MNOP5 FUTURES	MTDFUT	MNOP5F
MSCI Malaysia (USD) Index Futures	MMA	MMA – FUTURES	MNOP9 FUTURES	MMAFUT	MNOP9F
MSCI Philippines (USD) Index Futures	MPS	MPS – FUTURES	MNOP6 FUTURES	MPSFUT	MNOP6F
MSCI Vietnam (USD) Index Futures	MVI	MVI – FUTURES	MNOP6 FUTURES	MVIFUT	MNOP6F

MSCI Singapore Free Net Total Return (USD) Index Futures	MGN	MGN – FUTURES	MNOP1 FUTURES	MGNFUT	MNOP1F
MSCI New Zealand Net Total Return (USD) Index Futures	MNZ	MNZ – FUTURES	MNOP1 FUTURES	MNZFUT	MNOP1F
MSCI EM ex China Net Total Return (USD) Index Futures	MXC	MXC – FUTURES	MNOP1 FUTURES	MXCFUT	MNOP1F
MSCI EM ex Korea Net Total Return (USD) Index Futures	MXK	MXK – FUTURES	MNOP1 FUTURES	MXKFUT	MNOP1F
MSCI EM Asia ex China Net Total Return (USD) Index Futures	MAC	MAC – FUTURES	MNOP1 FUTURES	MACFUT	MNOP1F
MSCI EM Asia ex Korea Net Total Return (USD) Index Futures	MAK	MAK – FUTURES	MNOP1 FUTURES	MAKFUT	MNOP1F
MSCI EM EMEA Net Total Return (USD) Index Futures	MEE	MEE – FUTURES	MNOP1 FUTURES	MEEFUT	MNOP1F
MSCI EM LatAm Net Total Return (USD) Index Futures	MEL	MEL – FUTURES	MNOP1 FUTURES	MELFUT	MNOP1F
MSCI Pacific Net Total Return (USD) Index Futures	MPC	MPC – FUTURES	MNOP1 FUTURES	MPCFUT	MNOP1F
MSCI Pacific ex Japan Net Total Return (USD) Index Futures	MPJ	MPJ – FUTURES	MNOP1 FUTURES	MPJFUT	MNOP1F
MSCI Taiwan 25/50 Net Total Return (USD) Index Futures	TWN	TWN – FUTURES	MNOP1 FUTURES	TWNFUT	MNOP1F
MSCI Taiwan 25/50 (USD) Index Futures	TWP	TWP – FUTURES	MNOP2 FUTURES	TWPFUT	MNOP2F
MSCI Singapore Free (SGD) Index Futures	MSG	MSG – FUTURES	MNOP4 FUTURES	MSGFUT	MNOP4F
MSCI China A 50 Connect (USD) Index Futures	MCA	MCA – FUTURES	PDT53 FUTURES	MCAFUT	PDT53F
Hang Seng TECH Index Futures	HTI	HTI – FUTURES	PDTB6F FUTURES	HTIFUT	PDTB6F
Hang Seng TECH Index Options	HTI	HTI – CALL OPTIONS	PDTB6 CALL OPTIONS	HTICALL	PDTB6C
Hang Seng TECH Index Options	HTI	HTI – PUT OPTIONS	PDTB6 PUT OPTIONS	HTIPUT	PDTB6P
MSCI Taiwan (USD) Index Options	MTW	MTW – CALL OPTIONS	MNOP2 CALL OPTIONS	MTWCALL	MNOP2C
MSCI Taiwan (USD) Index Options	MTW	MTW – PUT OPTIONS	MNOP2 PUT OPTIONS	MTWPUT	MNOP2P
Hang Seng Index Futures Options	PHS	PHS – CALL OPTIONS	PSE1 CALL OPTIONS	PHSCALL	PSE1C
Hang Seng Index Futures Options	PHS	PHS – PUT OPTIONS	PSE1 PUT OPTIONS	PHSPUT	PSE1P
HSCEI Futures Options	PHH	PHH – CALL OPTIONS	PSE2 CALL OPTIONS	PHHCALL	PSE2C
HSCEI Futures Options	PHH	PHH – PUT OPTIONS	PSE2 PUT OPTIONS	PHHPUT	PSE2P
Hang Seng TECH Index Futures Options	PTE	PTE – CALL OPTIONS	PSE3 CALL OPTIONS	PTECALL	PSE3C
Hang Seng TECH Index Futures Options	PTE	PTE – PUT OPTIONS	PSE3 CALL OPTIONS	PTECALL	PSE3P
Flexible Hang Seng China Enterprises Index Options	XHH	XHH – CALL OPTIONS	XHH CALL OPTIONS	XHHCALL	XHHC

Flexible Hang Seng China Enterprises Index Options	XHH	XHH – PUT OPTIONS	XHH PUT OPTIONS	XHHPUT	XHHP
Flexible Hang Seng Index Options	XHS	XHS – CALL OPTIONS	XHS CALL OPTIONS	XHSCALL	XHSC
Flexible Hang Seng Index Options	XHS	XHS – PUT OPTIONS	XHS PUT OPTIONS	XHSPUT	XHSP

Interest Rate, Commodity and Currency Futures and Options

Product Name	HKATS Code	Product Name Description (Class Level)	Product Name Description (Type Level)	Product Code for file upload (Class Level)	Product Code for file upload (Type Level)
HIBOR Futures	HB1	1-MONTH HIBOR FUTURES	HIBOR FUTURES	HB1FUT	HIBF
HIBOR Futures	HB3	3-MONTH HIBOR FUTURES	HIBOR FUTURES	HB3FUT	HIBF
HIBOR Futures	H1S	1-MONTH HIBOR STRIPS	HIBOR FUTURES	H1SFUT	HIBF
HIBOR Futures	H3S	3-MONTH HIBOR STRIPS	HIBOR FUTURES	H3SFUT	HIBF
Iron Ore Futures (Monthly Contracts)	FEM	FEM – FUTURES	PDT8 FUTURES	FEMFUT	PT8F
Iron Ore Futures (Quarterly Contracts)	FEQ	FEQ – FUTURES	PDT8 FUTURES	FEQFUT	PT8F
CNH – London Metal Mini Futures	LRA	LRA – FUTURES	PDT4 FUTURES	LRAFUT	PT4F
CNH – London Metal Mini Futures	LRC	LRC – FUTURES	PDT4 FUTURES	LRCFUT	PT4F
CNH – London Metal Mini Futures	LRN	LRN – FUTURES	PDT4 FUTURES	LRNFUT	PT4F
CNH – London Metal Mini Futures	LRP	LRP – FUTURES	PDT4 FUTURES	LRPFUT	PT4F
CNH – London Metal Mini Futures	LRS	LRS – FUTURES	PDT4 FUTURES	LRSFUT	PT4F
CNH – London Metal Mini Futures	LRZ	LRZ – FUTURES	PDT4 FUTURES	LRZFUT	PT4F
USD – London Metal Mini Futures	LUA	LUA – FUTURES	PDT8 FUTURES	LUAFUT	PT8F
USD – London Metal Mini Futures	LUC	LUC – FUTURES	PDT8 FUTURES	LUCFUT	PT8F
USD – London Metal Mini Futures	LUN	LUN – FUTURES	PDT8 FUTURES	LUNFUT	PT8F
USD – London Metal Mini Futures	LUP	LUP – FUTURES	PDT8 FUTURES	LUPFUT	PT8F
USD – London Metal Mini Futures	LUS	LUS – FUTURES	PDT8 FUTURES	LUSFUT	PT8F
USD – London Metal Mini Futures	LUZ	LUZ – FUTURES	PDT8 FUTURES	LUZFUT	PT8F
USD Gold Futures	GDU	GDU – FUTURES	PDT10 FUTURES	GDUFUT	PT10F
CNH Gold Futures	GDR	GDR – FUTURES	PDT9 FUTURES	GDRFUT	PT9F
USD Silver Futures	SIU	SIU – FUTURES	PDT1 FUTURES	SIUFUT	PT1F
CNH Silver Futures	SIR	SIR – FUTURES	PDT5 FUTURES	SIRFUT	PT5F
RMB Currency Futures - USD/CNH Options	CUS	CUS – CALL OPTIONS	CNY CALL OPTIONS	CUSCALL	CNYC
RMB Currency Futures - USD/CNH Options	CUS	CUS – PUT OPTIONS	CNY PUT OPTIONS	CUSPUT	CNYP
RMB Currency Futures - USD/CNH Futures	CUS	CUS – FUTURES	CNY FUTURES	CUSFUT	CNYF
RMB Currency Futures - EUR/CNH Futures	CEU	CEU – FUTURES	FI02 FUTURES	CEUFUT	FI2F
RMB Currency Futures - JPY/CNH Futures	CJP	CJP – FUTURES	FI02 FUTURES	CJPFUT	FI2F

RMB Currency Futures - AUD/CNH Futures	CAU	CAU – FUTURES	FI02 FUTURES	CAUFUT	FI2F
INR Currency Futures - INR/CNH Futures	CIN	CIN – FUTURES	FI02 FUTURES	CINFUT	FI2F
RMB Currency Futures - USD/CNH Options	UCN	UCN – FUTURES	FI05 FUTURES	UCNFUT	FI5F
RMB Currency Futures - USD/CNH Options	UIN	UIN – FUTURES	FI05 FUTURES	UINFUT	FI5F
Mini USD/CNH Futures	MCS	MCS – FUTURES	FI02 FUTURES	MCSFUT	FI2F

Stock Futures & Options

Product Name	Product Name Description (Class Level)	Product Name Description (Type Level)	Product Code for file upload (Class Level)	Product Code for file upload (Type Level)
Stock Futures	[HKATS Code] - FUTURES	STOCK FUTURES, DEC=2	[HKATS Code]FUT	SFU2
Stock Options	[HKATS Code] - CALL OPTIONS	STOCK CALL OPTION	[HKATS Code]CALL	SOMC
Stock Options	[HKATS Code] - PUT OPTIONS	STOCK PUT OPTION	[HKATS Code]PUT	SOMP

* For the HKATS Code of stock futures & options classes, please visit the below website for details:

Stock Options: https://www.hkex.com.hk/Products/Listed-Derivatives/Single-Stock/Stock-Options
Stock Futures: https://www.hkex.com.hk/Products/Listed-Derivatives/Single-Stock/Stock-Futures

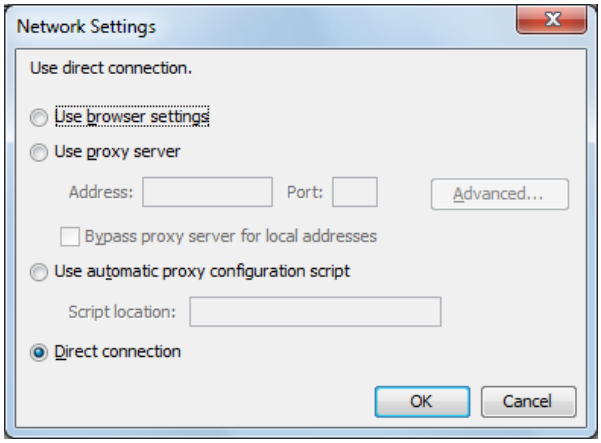
* Capital adjusted stock futures and options can also be found in the drop-down list.

Appendix D Terminology

Terms	Description
GUI User	Authorized users of the HKATS Risk Functions. It includes both the Risk Limit Managers and Trading Units.
HKATS Risk Functions (GUI)	A Pre-Trade Risk Management application of HKATS for Risk Limit Manager and Trading Units.
Prescribed Risk Controls	Refers to all the risk control functions provided by the HKATS Risk Functions.
Pre-Trade Limit Group (PTLG)	A group of Trading IDs from the same EP Mnemonic. Pre-Trade Limit Groups are managed by Risk Limit Managers to set up Prescribed Risk Controls.
Risk Limit Manager	Risk Limit Manager is a person being authorized by a Participant to define, maintain and monitor PTLGs and their corresponding Prescribed Risk Controls. Trading Unit's risk limits are prescribed by the corresponding Risk Limits Managers. The authorized persons of Trading Units can only execute Emergency Buttons (except unblock/unstop)
Risk Limit	Includes Maximum Order Rate Limits, Maximum Intraday Exposure Limits, Maximum Order Size Limits, Intraday Position Limits, Execution Throttle Limits and Maximum Block Trade Size Limits.
Trading ID	The HKATS Username with trading functions.
Tradable	A set of instruments traded, which typically have some common characteristics. This group of instruments may be an "instrument type", "instrument class", "combo type" or "combo class". The exposure of each Pre-Trade Limit Group to a tradeable is monitored and limited by PTRM.

Appendix E General Security Settings for Google Chrome and Java

1. **Network Settings through the Java Control Panel**
    a. In the Control Panel, click Java Control Panel
    b. Click on the **General** tab.
    c. Click Network Settings
    d. Select the appropriate connection ***(In general, "Use browser settings" and "Direct connection" are highly recommended)***
    e. Click "**OK**" to save changes made to the Java
    f. **Click Apply**



2. Setting the Security levels through the Java Control Panel

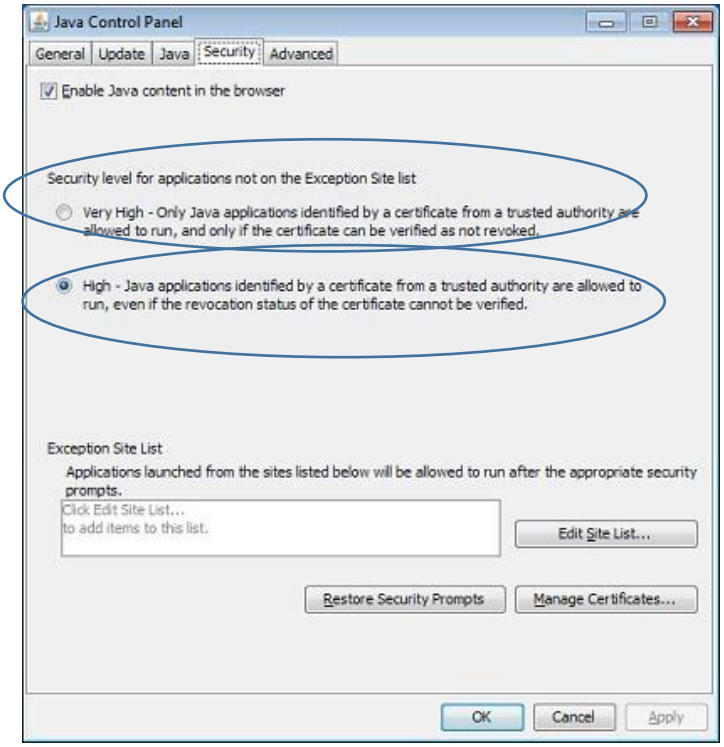
a. In the Java Control Panel, click on the **Security** tab.

b. Select the Medium or High Security level.

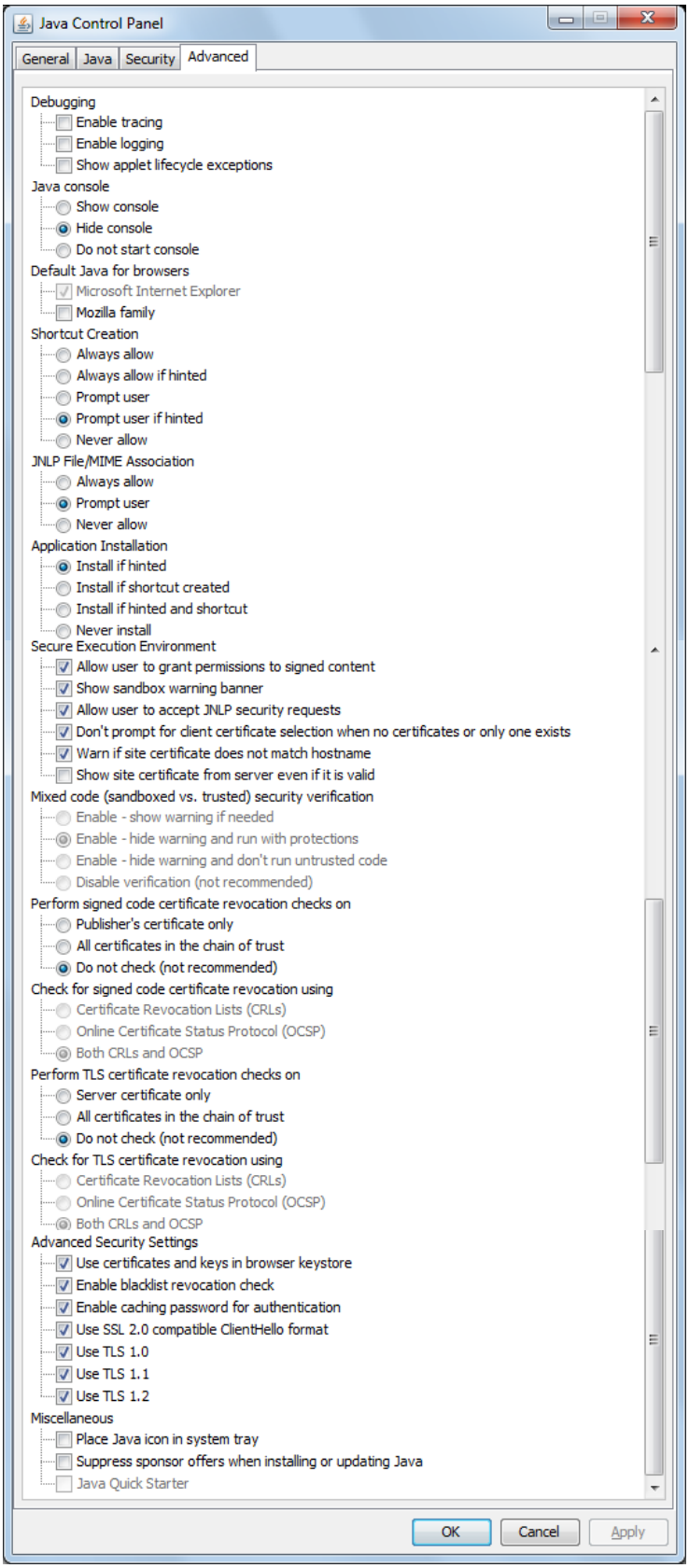
c. Click **Apply**.

d. Click "**OK**" to save changes made to the Java Control Panel.

Java Control Panel - Java 8



3. **Setting Advanced Settings through the Java Control Panel**
    a. Please follow the below settings
    b. **Click Apply**


Java Control Panel
General
Java
Security
Advanced
Debugging
Enable tracing
Enable logging
Show applet lifecycle exceptions
Java console
Show console
Hide console
Do not start console
Default Java for browsers
Microsoft Internet Explorer
Mozilla family
Shortcut Creation
Always allow
Always allow if hinted
Prompt user
Prompt user if hinted
Never allow
JNLP File/MIME Association
Always allow
Prompt user
Never allow
Application Installation
Install if hinted
Install if shortcut created
Install if hinted and shortcut
Never install
Secure Execution Environment
Allow user to grant permissions to signed content
Show sandbox warning banner
Allow user to accept JNLP security requests
Don't prompt for client certificate selection when no certificates or only one exists
Warn if site certificate does not match hostname
Show site certificate from server even if it is valid
Mixed code (sandboxed vs. trusted) security verification
Enable - show warning if needed
Enable - hide warning and run with protections
Enable - hide warning and don't run untrusted code
Disable verification (not recommended)
Perform signed code certificate revocation checks on
Publisher's certificate only
All certificates in the chain of trust
Do not check (not recommended)
Check for signed code certificate revocation using
Certificate Revocation Lists (CRLs)
Online Certificate Status Protocol (OCSP)
Both CRLs and OCSP
Perform TLS certificate revocation checks on
Server certificate only
All certificates in the chain of trust
Do not check (not recommended)
Check for TLS certificate revocation using
Certificate Revocation Lists (CRLs)
Online Certificate Status Protocol (OCSP)
Both CRLs and OCSP
Advanced Security Settings
Use certificates and keys in browser keystore
Enable blacklist revocation check
Enable caching password for authentication
Use SSL 2.0 compatible ClientHello format
Use TLS 1.0
Use TLS 1.1
Use TLS 1.2
Miscellaneous
Place Java icon in system tray
Suppress sponsor offers when installing or updating Java
Java Quick Starter
OK
Cancel
Apply

4. **Turn off the Windows Firewall**
    a. Open Control Panel
    b. Click Windows Firewall
    c. Turn off Windows Firewall

Note:

Default settings for both Google Chrome and Java are recommended for HKATS Risk Functions connections.

Appendix F Audit and Utilization Reports

There are two PTRM reports recording changes made in HKATS Risk Functions, the Audit Report and Utilization Report. The audit report shows the activities of the PTLGs managed by the Risk Limit Manager on the last business day. The utilization report shows the maximum utilization of relevant risk counters, e.g., Order Size, Order Rate, Intraday Exposure, Execution Throttle, Intraday Position Limits and Maximum Block Trade Size for each PTLG. Both reports are available and can be downloaded directly via secure file transfer protocol (SFTP) facility. **For detail information, please refer to the DCASS Online User Guide and the Report Retrieval Solution for Listed Derivatives Markets Technical Guide.**

Note:

1) For Audit Report, the changes on intraday exposure notice % and warning % would not be reflected.

2) For Audit Report, only actions of adding a tradable will be reflected if the PTLG has both actions on adding and deleting the same amount of tradables on the same business day.

3) For Audit Report, records of retriggered Event Levels (Notice, Warning and Breach) of the same Event Risk Type under the same PTLG will not be displayed in the Audit Report after a Breach Event is triggered.

Appendix G Unit Margin Rate (UMR)

UMRs in HKATS Risk Functions for Maximum Intraday Exposure checks and Execution Throttle Limits are the Client Initial Margin Requirements for each product series in HKATS calculated based on the corresponding underlying closing prices of the previous day and the latest margin parameters as determined by the Clearing Houses from time to time.
At the start of a business day, a new set of UMRs will be uploaded into the risk servers for exposure calculations for the rest of the day. Orders being entered into HKATS will be assigned a value being the UMR of that product series multiplied by its order size for risk exposure calculation. Risk Limit Managers are reminded to take note of the existing system behavior on the order validity on **Last Trading Days** and normal trade days related to Maximum Intraday Exposure checks and take consideration of them when setting in their exposure limits.

Products	Existing Order Behavior on Last Trading Days	Note on Exposure
AHT Products	• T only orders WILL be inactivated after the last trading time before AHT	• Exposure of the inactivated T orders will be released
	• T + 1 orders WILL NOT be inactivated after the last trading time before AHT	• Exposure of these T+1 orders will not be released
Non-AHT Products	• Orders WILL NOT be inactivated before AHT	• Exposure of Non-AHT orders will be reflected in AHT if these orders are not canceled during Day Sessions

Appendix H Exposure Calculation Examples for Maximum Intraday Exposure Limits

Net Futures Long Example

Trading Unit A has been set up HKATS Risk Functions, and has been created a PTLG with Trading ID B1.

Contract X's UMR = HKD 100

Contract Y's UMR = HKD 200

Net Futures Long Limit = HKD 10,000

Futures Order Coefficient = 50%

Calculation Logic

1. B1 enters a buy order for 60 X. Net Futures Long Consumption = HKD 3,000 = {(0*100) – (0*100) + (60*100 *0.5)}
2. Buy 60 X matched fully. Net Futures Long Consumption = HKD 6,000 = 3,000 + {(60*100) – (0*100) + (-60*100*0.5)}
3. B1 enters a sells order for 60 Y and matched fully. Net Futures Long Consumption = HKD -6,000 = 6,000 + {(0*200) – (60*200) + (0*200 *0.5)}
4. B1 enters a buy order for 101 Y and immediately matched fully. Net Futures Long Consumption = HKD 14,200 = -6,000 + {(101*200) – (0*200) + (0*200 *0.5)}
5. The Net futures limit is breached (14,200 > 10,000)

B1 enters a buy order for 1 X The order is rejected with the reject reason "User has breached Maximum Intraday Exposure Limit" (-850006)

Gross Futures Long Example

Trading Unit A has been set up HKATS Risk Functions and has been created a PTLG with Trading ID B1.

Contract X's UMR = HKD 100

Contract Y's UMR = HKD 200

Gross Futures Long Limit = HKD 10,000

Futures Order Coefficient = 50%

Calculation Logic

1. B1 enters a buy order for 60 X. Gross Futures Long Consumption = HKD 3,000 = {(0*100) + (60*100*0.5)}
2. Buy 60 X matched. Gross Futures Long Consumption = HKD 6,000 = 3,000 + {(60*100) + (-60*100*0.5)}

3. B1 enters a sells order for 60 Y. Gross Futures Long Consumption = HKD 6,000 (no change)
4. B1 enters a buy order for 50 Y. Gross Futures Long Consumption = HKD 11,000 = 6,000 + {(0*200) + (50*200*0.5)}. The Gross futures limit is breached

B1 enters a buy order for 1 X. The order is rejected with the reject reason “User has breached Maximum Intraday Exposure Limit” (-850006)

Net Options Long Example

Trading Unit A has been set up HKATS Risk Functions, and has been created a PTLG with Trading ID B1.

Long Call Options X’s UMR = HKD 100

Short Call Options X’s UMR = HKD 200

Long Put Options Y’s UMR = HKD 200

Short Put Options Y’s UMR = HKD 300

Options Order Coefficient = 50%

Calculation Logic

1. B1 enters a buy order for 10 Call X. Net Options Long Consumption = HKD 500 = {(0*100) - (0*200) + (0*300) - (0*200) + (10*100*0.5) + (0*300*0.5)}
2. The order for 10 Call X matched fully. Net Options Long Consumption = HKD 1,000 = 500 + {(10*100) - (0*200) + (0*300) - (0*200) + (-10*100*0.5) + (0*300*0.5)}
3. B1 sells 5 Call X and the order matched fully. Net Options Long Consumption = HKD 0 = 1,000 + {(0*100) - (5*200) + (0*300) - (0*200) + (0*100*0.5) + (0*300*0.5)}
4. B1 enters a sell order for 10 Put Y. Net Options Long Consumption = HKD 1,500 = 0 + {(0*100) - (0*200) + (0*300) - (0*200) + (0*100*0.5) + (10*300*0.5)}
5. A match occurs for 5 Put Y, leaving 5 open. Net Options Long Consumption = HKD 2,250 = 1,500 + {(0*100) - (0*200) + (5*300) - (0*200) + (0*100*0.5) + (-5*300*0.5)}
6. B1 increases the remaining quantity to sell 15 Put Y from selling 5 Put Y. Net Options Long Consumption = HKD 3,750 = 2,250 + {(0*100) - (0*200) + (0*300) - (0*200) + (0*100*0.5) + (10*300*0.5)}
7. B1 cancels the Put Y order. Net Options Long Consumption = HKD 1,500 = 3,750 + {(0*100) - (0*200) + (0*300) - (0*200) + (0*100*0.5) + (-15*300*0.5)}

Gross Options Long Example

Trading Unit A has been set up HKATS Risk Functions, and has been created a PTLG with Trading ID B1.

Long Call Options X's UMR = HKD 100

Short Call Options X's UMR = HKD 200

Long Put Options Y's UMR = HKD 200

Short Put Options Y's UMR = HKD 300

Options Order Coefficient = 50%

Calculation Logic

1. B1 enters a buy order for 10 Call X. The order is matched partially on 5 lots immediately. Net Options Long Consumption = HKD 750 = {(5*100) + (0*300) + (5*100*0.5) + (0*300*0.5)}
2. Cancel the remaining 5 Call X thereafter. Net Options Long Consumption = HKD 500 = 750 + {(0*100) + (0*300) + (-5*100*0.5) + (0*300)}