BISTECH Pre-Trade Risk Management (PTRM)

User Guide

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1. INTRODUCTION

This user manual describes how to use BISTECH Pre-Trade Risk Management – PTRM application which is designed to enable the Exchange and its members to track and control the risks arising from the orders and trades.

Although this PTRM user guide has been prepared with the best effort to offer correct information, in case there is a contradiction between this user guide and any of the prevailing legal regulations, the regulations are valid.

Borsa Istanbul A.Ş. has the right to change any part of this user guide at any time and publish the changes.

2. OVERVIEW

BISTECH Pre-Trade Risk Management -PTRM- application is a risk management tool which is integrated with the matching engine (handling orders and trades) and Takasbank (Clearing House) real-time risk management module (RTM) and operates in an integrated way by exchanging data in real-time with the connected systems (see Figure 1).

PTRM application performs pre-trade risk controls within the pre-trade risk control module (RXP) which is positioned prior to the matching engine. Orders before entering the order book are subject to pre-order (pre-trade) risk controls by means of a simplified and fast algorithm. Orders that pass the risk checks on the RXP module are sent to the order book if they are accepted and then, they are evaluated for order matching by the matching engine. The orders that fail RXP risk checks do not enter in the order book and they are canceled without being evaluated by the matching engine. RXP module aiming to quickly evaluate orders by the risk checks without delay works in sync with the RX Server.

Figure 1 BISTECH Pre-Trade Risk Management – General Overview
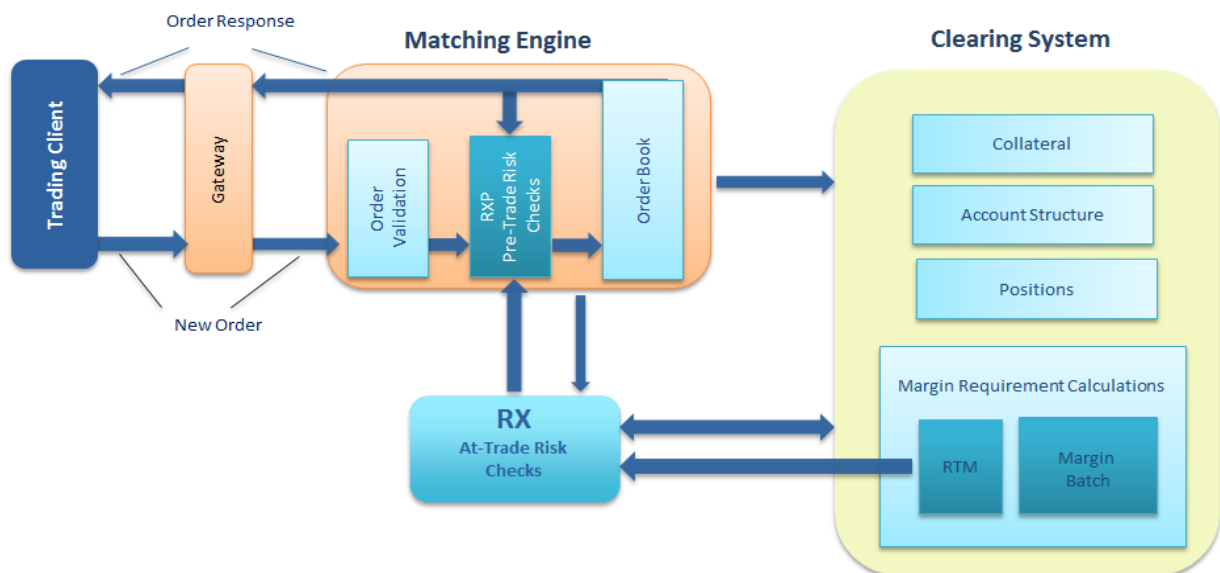
On the other hand, post-trade risk checks are performed on the Risk Management Server (RX Server) located outside the matching engine (in order to prevent latency in the matching engine). RX Server module performs post-trade risk checks using reference information (account structure, beginning of the day positions, unit margin values etc....) taken from the clearing system at the beginning of the day and updated information taken from Takasbank real-time risk management module (RTM) during the day without introducing an additional load on the matching engine.

With BISTECH PTRM application,

- risk group checks
- user and account-based validations
- account based margin check
- market and investor-based position limits (only in Derivatives Market)

may be performed. Performed risk checks and their results may be tracked with PTRM Graphical User Interface (PTRM GUI).

In addition to these controls, PTRM GUI can also be used to track status of the accounts which may be suspended for various reasons (the Exchange, Takasbank or breaches, etc.).

Exchange members may connect to the PTRM GUI application through Distant Remote Access. User information which is required for login to the PTRM GUI is provided by the Exchange.

3. GETTING STARTED

3.1. System Requirements

To run the BISTECH PTRM GUI application you must have "Windows" operating system installed on your computer. You will also need an internet connection and a web browser. All web browsers are supported such as Google Chrome, Internet Explorer, and Firefox etc.

3.2. Launching the Application

To download and run the application, complete the following steps:

1. Open the web browser and go to the launch page the link of which is specified by the Exchange.
2. Click the BISTECH PTRM Client link.

Figure 2 Starting PTRM Application

3. To install PTRM application, download the *PTRM-CLIENT.zip file* and save it to the desktop.

Figure 3 Installing PTRM Application
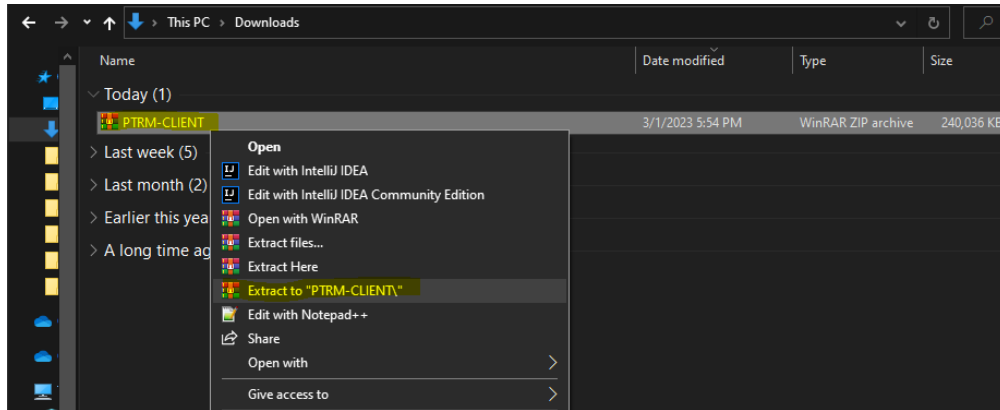
4. The version number and date information are included in the name of the PTRM-CLIENT exe file. The PTRM GUI application is started by running the exe file. In order to run the application, the exe file and the env folder must be together as shown in Figure 4.

Figure 4 Installing PTRM Application
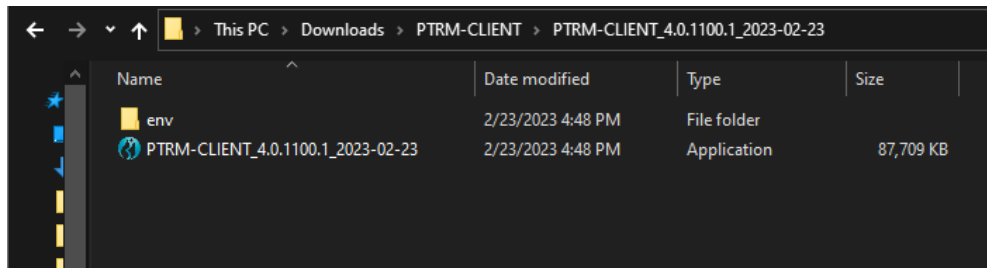
5. Select the language to use in the application: English or Turkish.
6. Enter user name and password (accessible for our participants on "connect").
7. Enter IP and Port (accessible for our participants on "connect").
8. Click the **Login** button.

Figure 5 PTRM Application Login Screen

9. The main window of the application will be displayed.
10. When you install the application, a shortcut is placed on the desktop. This shortcut can be used for next entries to the application.
11. Logging into the application, you may encounter the following errors:

- **Already logged in:** If an attempt is made to log in with a user that is already connected to the system, this warning will be displayed.
- **Login disabled:** If the login permission is disabled in the system you are trying to log in, this warning will be displayed.
- **User is locked:** If the user is locked, this warning will be displayed. You can request the lock to be removed via the Connect platform.
- **User is suspended:** If the user is suspended, this warning will be displayed. You can request the user to be reactivated via the Connect application.
- **Password is expired:** This warning will be displayed when your password has expired, new password can be created by members.
- **Not GUI user:** This warning will be displayed when you try to connect with a different type of user than the PTRM GUI user.
- **User not found or wrong password:** This warning will be displayed when you try to connect to the system with an incorrect username or password.
- **Server internal error:** This warning may occur when the versions do not match, you must download the new version.
- **Gateway internal error:** This warning may occur when the versions do not match, you must download the new version.
- **Client internal error:** This warning may occur when the versions do not match, you must download the new version.

Figure 6 PTRM Application Successful Login Screen
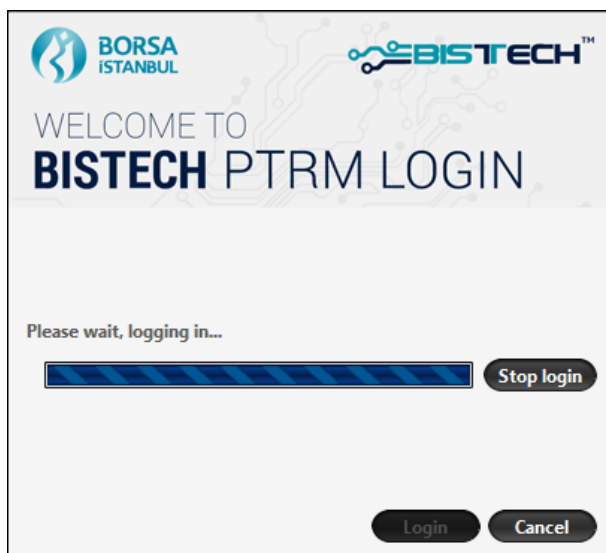
3.3. Password Change

When you enter the application for the first time, the screen below will be displayed. Passwords given by the Exchange have to be changed from the screen below.

Figure 8 PTRM Application Password Change Screen

Moreover, in line with the Borsa İstanbul user password policy, PTRM users must change their passwords every 90 days. In this regard, PTRM users can set their new password from the "change password" tab which is inside the "File" menu of BISTECH PTRM GUI when they deem it necessary or because the password has expired.

Figure 9 PTRM Application Password Change Menu
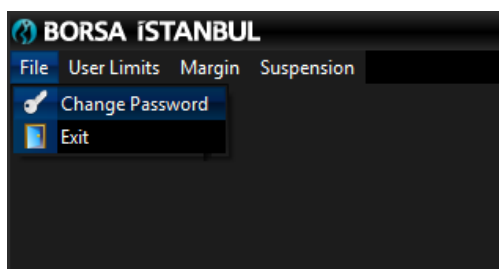
> **Note: It is the responsibility of the members that existing or new passwords are kept by PTRM users and not shared with anyone.**
> **BIST members can reach their PTRM GUI user names, first passwords given by Borsa Istanbul and IP address for PTRM GUI at BIST Connect system.**

3.4. Application Update

When the PTRM application is updated, the following error screen is encountered if it is entered with the old application shortcut. The version of the server running in the environment to be connected and the version of the application must be the same. In case of a version error, the current version of the zip file in Figure 3 should be downloaded again from the web page.

Figure 10 PTRM Application Update Warning
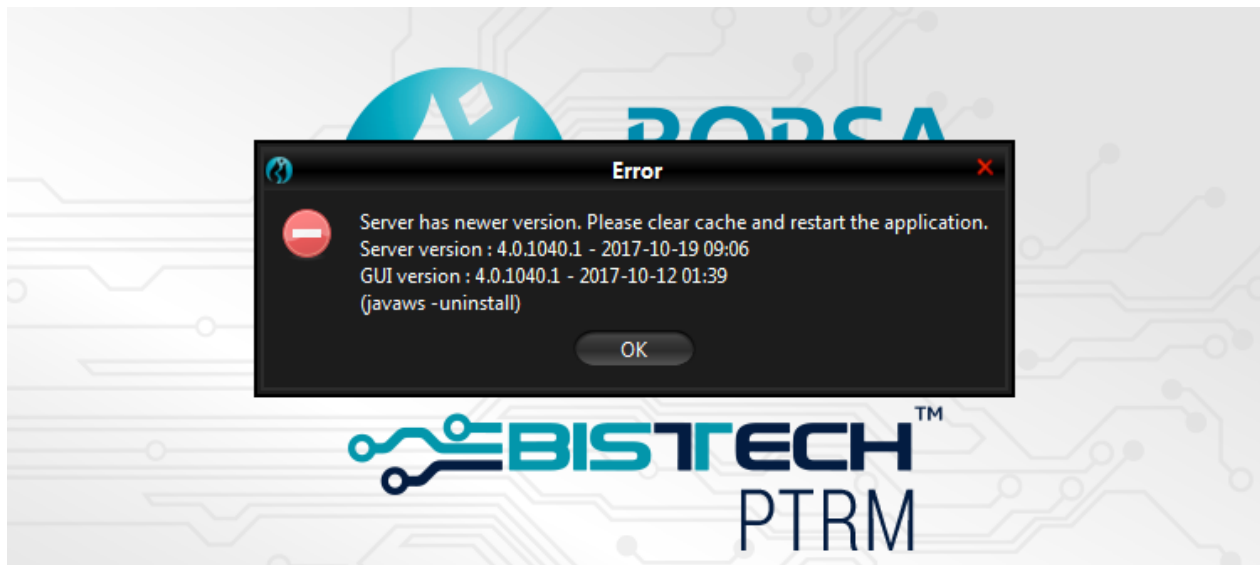
3.5. PTRM LOG FILE

PTRM application logs are recorded in the log file. In case a member encounters any problems; they can access the log file and contact the Borsa İstanbul with the log records.

As mentioned in the 3.2. Launching the Application section, after the installation is completed, you can access the PTRM Log file in the same folder, the figure of which is given below, in the same file.

Figure 11 PTRM Log File
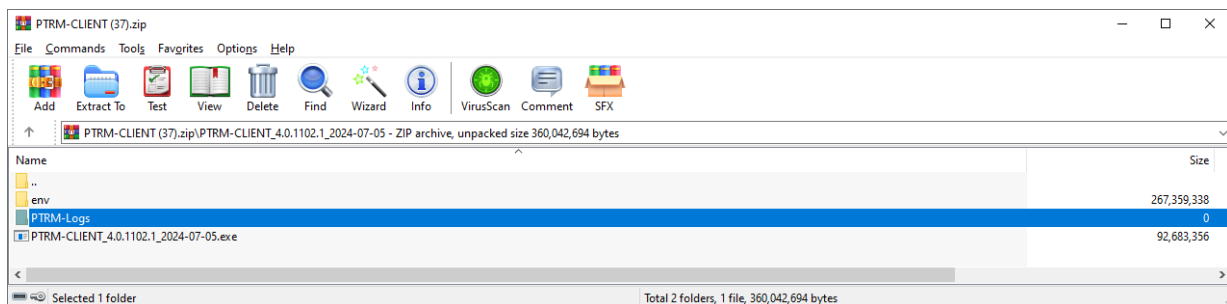
4. WINDOW LAYOUT

BISTECH PTRM Graphical User Interface (GUI) enables risk group checks which are comprised of a group of users connected to a participant in real time as well as allowing the users to view and edit risk limit

parameters. Furthermore, account-based margin check results and suspended accounts information can be monitored in real time.

4.1. GUI Menu

BISTECH PTRM GUI is composed of "File", "User Limits", "Margin" and "Suspension" menus.

4.1.1. User Limits

User limits menu includes "Member Settings" tab. This tab is made up of the sections numbered in the following screen display and explained in detail in the table below.

Figure 12 User Limits / Member Settings Display
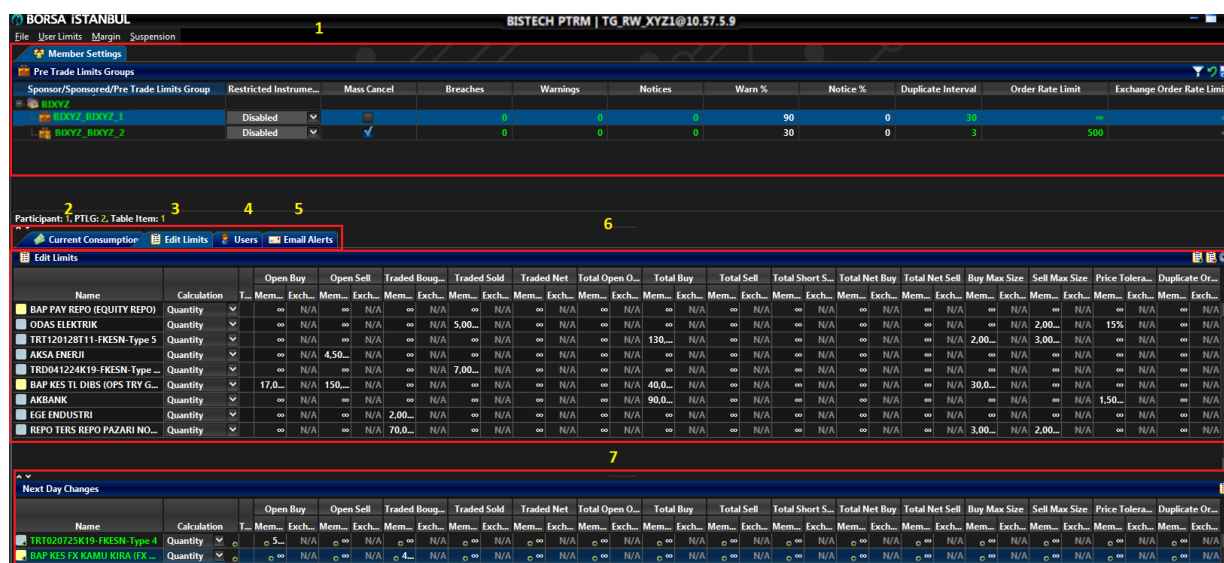
Table 1 User Limits / Member Settings Tab

ICON	COMMAND
1	**Pre-Trade Limits Group Panel:** This panel displays a hierarchy of risk groups which are comprised of users of a participant.
2	**Current Consumption Tab:** The current consumption tab shows the usage of all limits set on a risk group.
3	**Edit Limits Tab:** The edit limits tab lets you add and edit limits on a risk group.
4	**Users Tab:** The Users tab lets you add and remove users, and view which users are assigned to a risk group.
5	**Email Alerts Tab:** The email alerts tab is where users define e-mail addresses to which breaches, warnings and notices alerts for the risk group are. This tab also allows you to specify which types of alerts will be sent to the relevant group.
6	**Intraday Changes:** The intraday changes panel shows changes that are applied immediately when saved.
7	**Next Day Changes:** The next day changes panel shows changes that are sent to Exchange database when saved, and become effective when the system is started next day.

4.1.2. Margin

"Margin" menu includes the "Margin" and "Margin Coefficients" tabs. From these tabs, margin coefficients which are used in PTRM margin calculations and the results of account-based margin checks can be monitored in real time.

Figure 13 Margin Checks / Margin Display

Figure 14 Margin Checks/ Margin Coefficients Tab Display

4.1.3. Suspension

"Suspension" menu includes "Account" and "Product" menus.

Account

The "Account" menu under the Suspension menu includes "Suspension" and "Suspension Logs" tabs. Accounts that are automatically or manually suspended as a result of PTRM pre-trade risk controls and Takasbank post-trade risk controls, or if a participant is suspended, the related information can be tracked through these tabs.

Figure 15 Suspended Accounts Display

Figure 16 Suspension/Suspension Log History Display

Product

The "Product" menu under "the Suspension" menu includes the "Product Suspension" and "Product Suspension Logs" tabs. Under these tabs, the suspension and suspension logs tabs related to the investor based nominal limits set at market or market group level in the Derivative Market which are planned to be put into use by Takasbank at a later date can be tracked.

Figure 17 Suspended Products Display

Figure 18 Product Suspension Log History Display

4.2 Icons

Icons used in BISTECH PTRM GUI are detailed in the table below. It is also possible to display explanations if the cursor is moved onto the icon.

Table 2 Window Buttons

ICON	COMMAND
	From left to right: **Minimize**: Minimizes the application window to taskbar. **Maximize**: Maximizes the application window to fill the entire screen. **Close**: Closes the application.
	Revert Changes: Undo any unsaved changes.
	Save Changes: Saves your current changes.
	Add: Adds a limit, user or email recipient.
	Remove: Removes a limit, user or email recipient.
	Filter: Offers options for filtering on Member Settings, Margin, Margin Coefficients and Suspended Accounts tabs.

The status of the changes in intraday changes and next day changes panels are indicated by the icons in the table below.

Table 3 Window Icons

ICON	COMMAND
	Removed: Indicates that this item is saved and marked for removal next day.
	Added: Indicates that this item is saved and marked to be added next day.

In the "Settings Panel" displayed with ( ) button which is on the right corner on "Current Consumption" and "Edit Limits" tabs under "User Limits" menu, it is possible to manage the information shown in these sections.

On the "Edit Limits" tab, in the "Tradeable Status" column, the following symbols may appear in some special cases regarding the status of the instruments.

Table 4 Tradeable Status Icons

Icon	Definition
	This indicates that PTRM GUI user is not authorized to make changes to the corresponding instrument. The limits of the instruments in this status cannot be changed and cannot be deleted.
	This indicates that the relevant instrument is no longer traded on the Exchange markets due to maturity or other valid reasons. The limits of the instruments in this status cannot be changed. However, their limits can be deleted.

The icons in the table below are used when displaying the information about participant and its accounts on "Margin" and "Margin Coefficients" tabs under "Margin" menu and information about suspended participant or accounts on "Suspended Accounts" tab under "Suspension" menu.

Table 5 Margin and Suspended Accounts Tabs Icons

Icon	Definition
	Trading Account: Indicates that the account is the trading account of the participant.
	Margin Calculation Account: Indicates that the account is the margin calculation account of the participant.
	Margin Requirement Account: Indicates that the account is the margin requirement account of the participant.
	Participant: Indicates the participant itself.

4.3 Menu Shortcuts

Pressing Alt + <underlined_letter> opens the menus.

Figure 20 PTRM Menu Shortcuts

Tabs are opened with shortcut keys specified beside the tab titles.
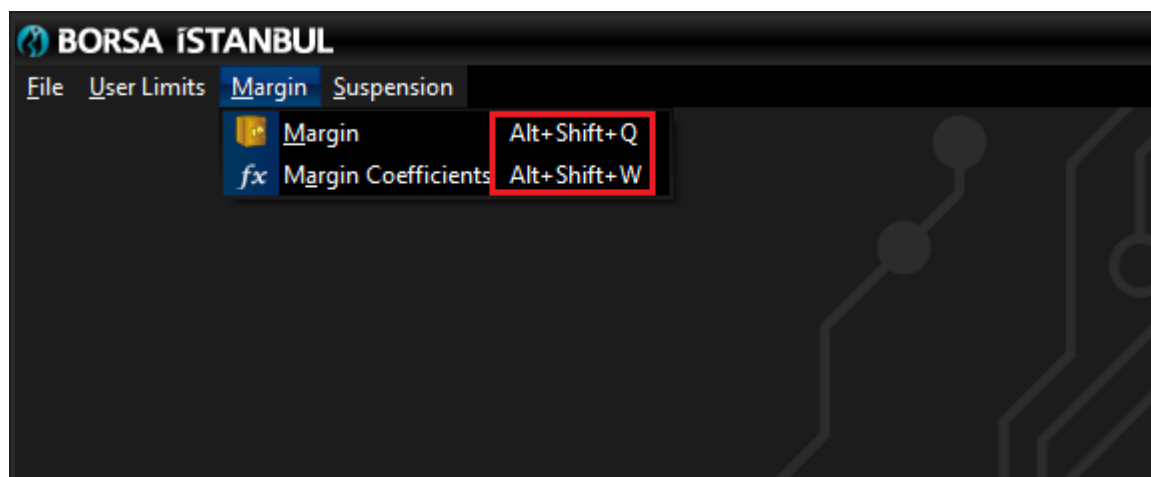
4.4 Expanding and Collapsing Panels

If you do not want to view a particular panel in the PRTM GUI application, you can hide it using collapse buttons. Alternatively, you can display it using expand buttons.

Table 6 Expanding and Collapsing Panels

ICON	COMMAND
⌄⌄	Clicking these buttons will hide or display panels in the application.

Figure 22 Expanding and Collapsing Panels Display
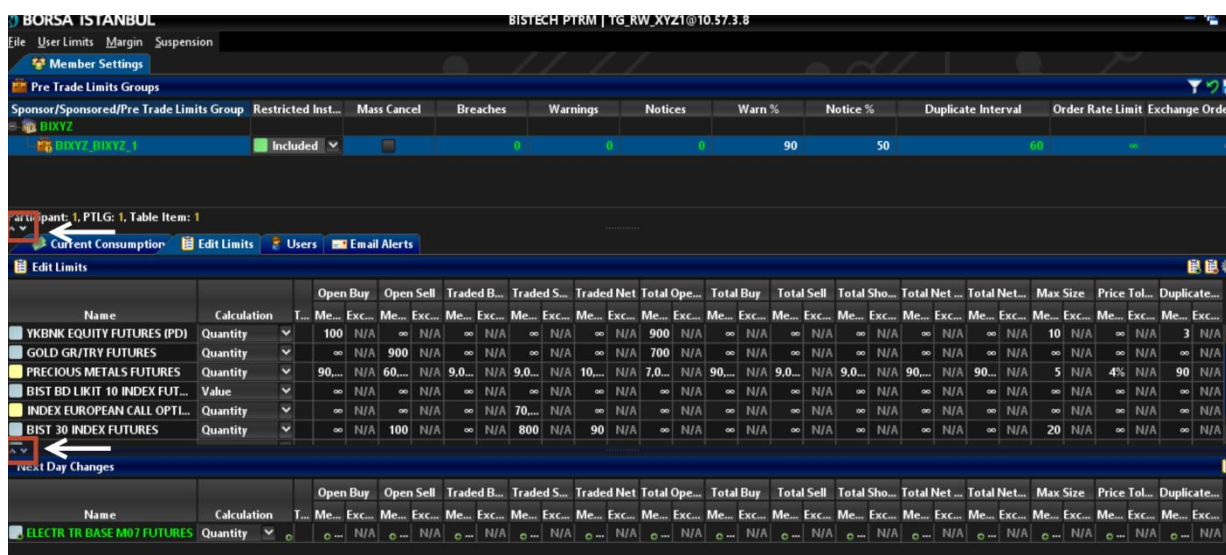
4.5 Changing the Screen View

It is possible to change PTRM screen view in a way that two different tabs can be displayed at the same time. The user can view the screen in two different tabs side by side or one under the other depending on his/her preference. These settings are made through "Move to Other View", "Change View Type" and "Swap Tabs" options which pop up by right clicking on the tab titles.

Figure 23 Changing Screen View Display
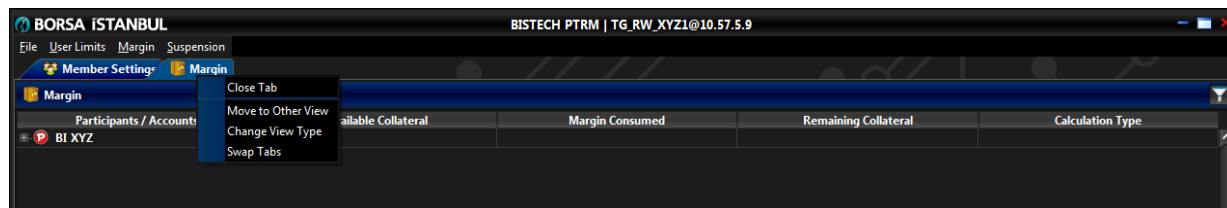
By clicking "Move to Other View", the relevant tab is sent to the right or bottom of the split screen according to the user's view type preference. The view type preference is set by "Change View Type" option. The "Swap Tabs" option changes the positions of the tabs. The "Close Tab" option closes the corresponding tab.

Figure 24 Two Tabs Side by Side Display
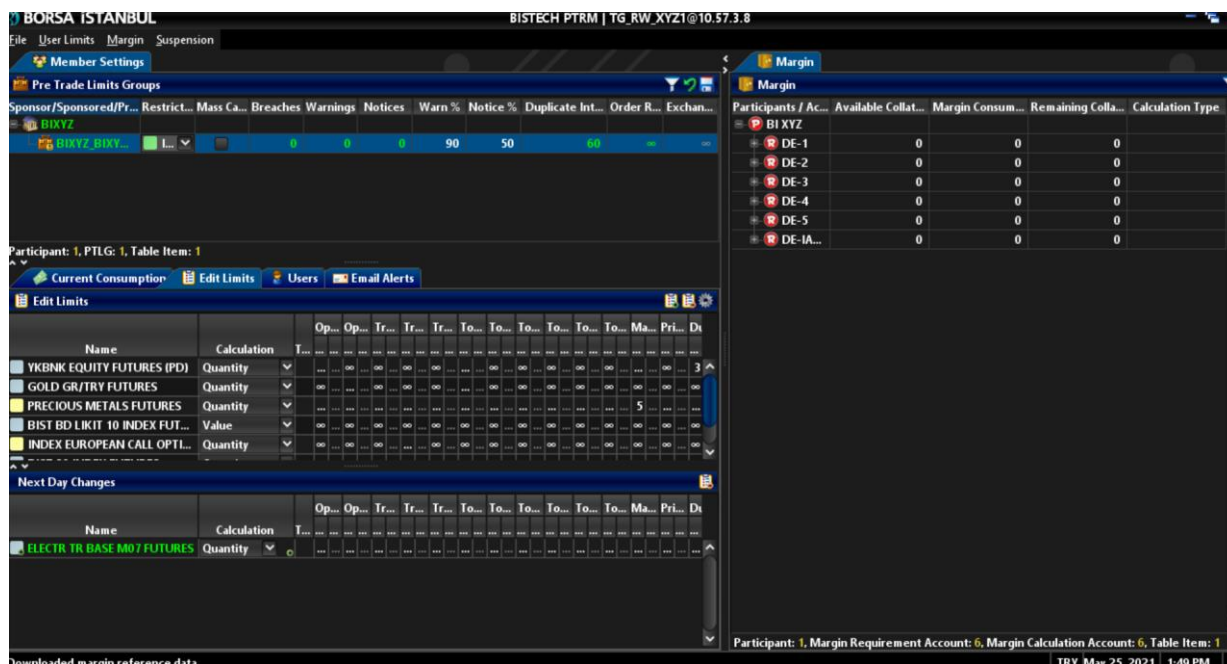
Figure 25 Two Tabs One under another Display
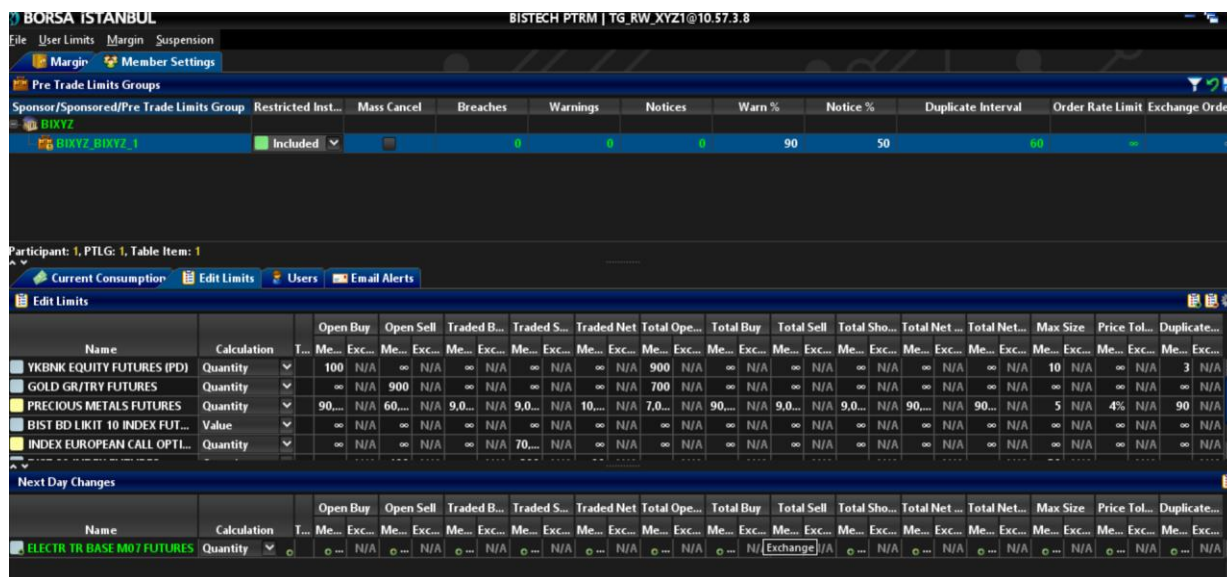
4.6   Starting and Stopping Updates

Click the "Stop Update" button in order to stop data updates in the "current consumption" tab and review details displayed in the application. Stopping data updates does not affect server processing, only real time updates in the "current consumption" tab will be paused. The server will continue monitoring the Risk Groups. To resume updates, click the Start Updates button.

Table 7 Starting and Stopping Updates
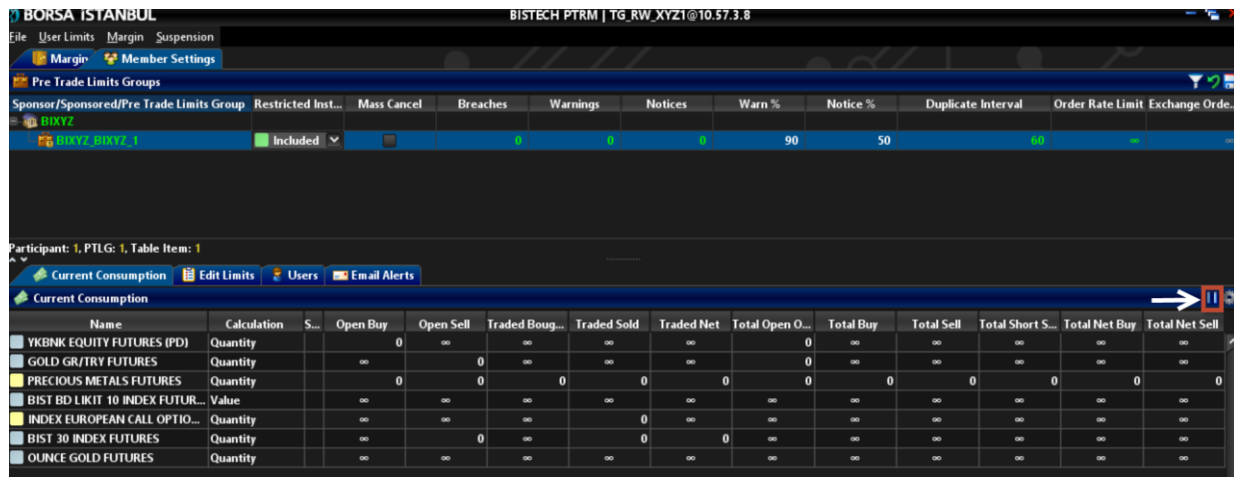
ICON	COMMAND
‖ ▶	• To stop updates, click the "Stop Update" button on the top right corner of a panel. • To resume updates to the user interface with the latest server data, click the "Start Update" button on the top right corner of the panel.

Figure 26 Starting and Stopping Updates Display

5. USER LIMITS (RISK GROUP CHECKS)

Risk group controls are performed according to the limits defined by the participant. Risk groups (Pre-Trade Limits Group –PTLG) are created by grouping the users connected to a participant. Members will be able to use this function on demand except for High Frequency Trading users. Authorizations regarding this function are granted upon member's requests.

The control of the various risks that may be caused by users sending orders and/or trading in BISTECH system is carried out with user limits defined by the "risk group". Risk groups are formed by grouping the users by the participant or by the Exchange when needed. PTRM makes the following checks using the limits that are defined at the risk group level:

➢ Pre-trade Risk Checks
  • Maximum buy size and maximum sell size
  • Restricted instruments
  • Price tolerance
➢ At-trade Risk Checks
  • Intraday position limits
  • Order rate limit (order/second)
  • Duplicate order interval/limit

The limits and calculation methods which are used in position risk limits, maximum buy size and maximum sell size, price tolerance limit and duplicate order limit controls may be set on either "instrument type" or "instrument class" level. If the specified limits are reached or exceeded (if the consumption is greater than or equal to the limit), the instrument type or class for which the limit is reached or exceeded switches into *breach* mode.

Figure 27 Risk Group Checks
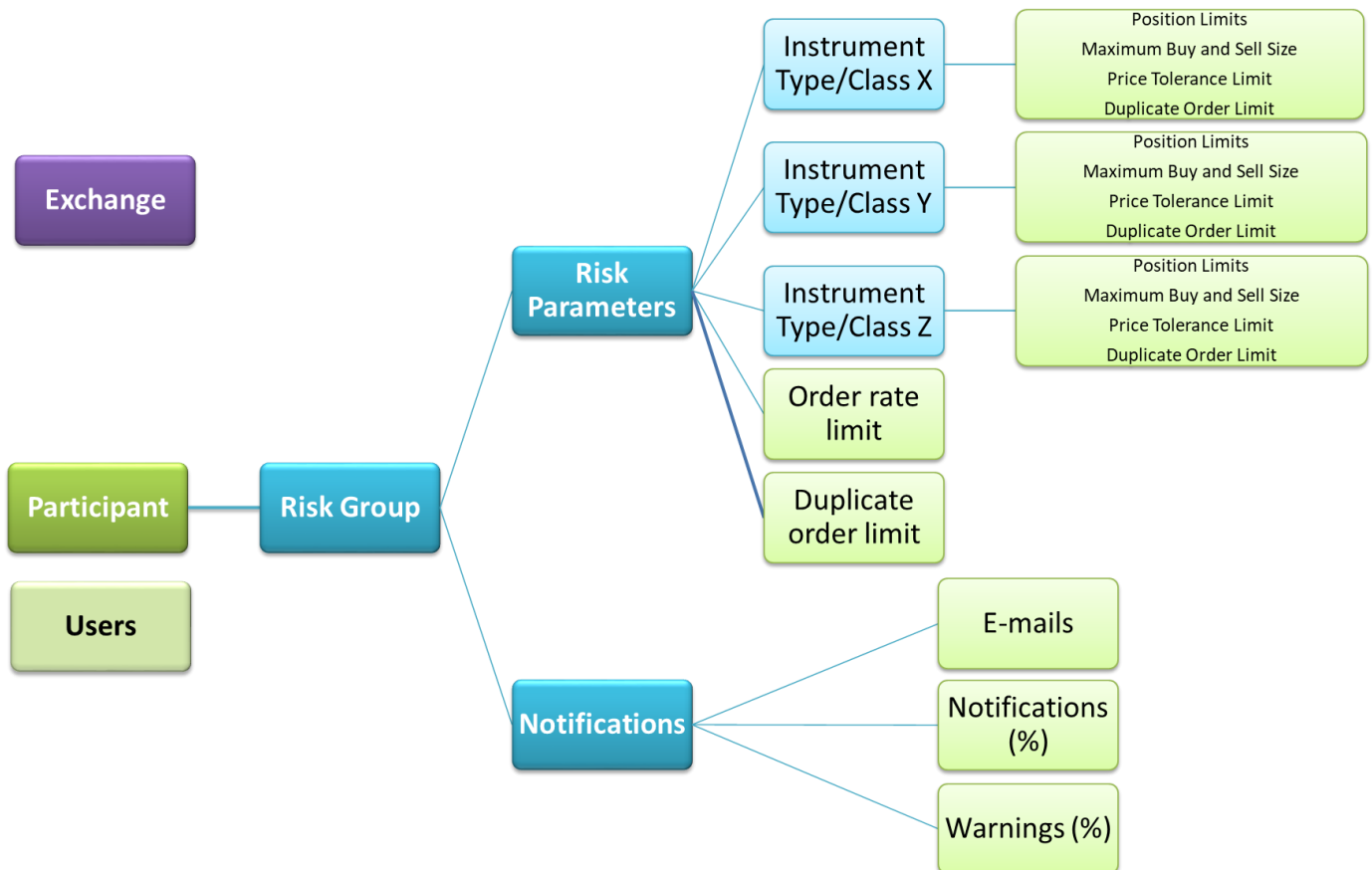
When a risk group is in the breach mode, the users in the risk group:

- Cannot enter new orders for the instruments of type and class which are breached.
- Cannot modify existing orders for the instruments of type and class which are breached.
- Are able to cancel open orders.
- Are able to enter new order for the instruments of type and class which are not breached.
- These breach limitations are automatically removed when the users in the risk group cancel their open orders to end the limit excess. Breach mode can be removed by the Exchange or the participant by increasing the exceeded limit during the day.

Defining the risk limit as zero means that the limit is infinite, and the system does not make any checks for the risk limits defined as zero. It starts to publish consumption data by taking into account the transactions that take place since the beginning of the day if the limits of the instruments whose limits that are specified as zero are changed to a value other than zero during the day.

Consumption data is not published for zero-defined risk limits in the PTRM API. If the non-zero value defined during the day is less than the current consumption at the time the risk limit definition is valid, a block occurs.

In the PTRM GUI, it is possible to see the consumption data for risk limits with zero definition. Clicking on the settings button on the bottom right of the current consumption screen, and removing the tick from the "Use Infinity Symbol" option will allow the current consumption of zero-defined items to be displayed.

Figure 28 Current Consumption Screen
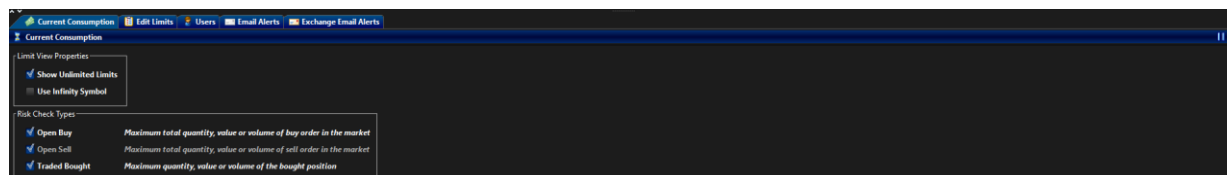
When the "Show Non-Existing Limits" option is selected on the Edit Limits screen, fields for which no limit definitions have been made appear as N/A, while if the option is not selected, there is no information in the relevant fields. (See Figure 29.)

Figure 29 Edit Limits Screen
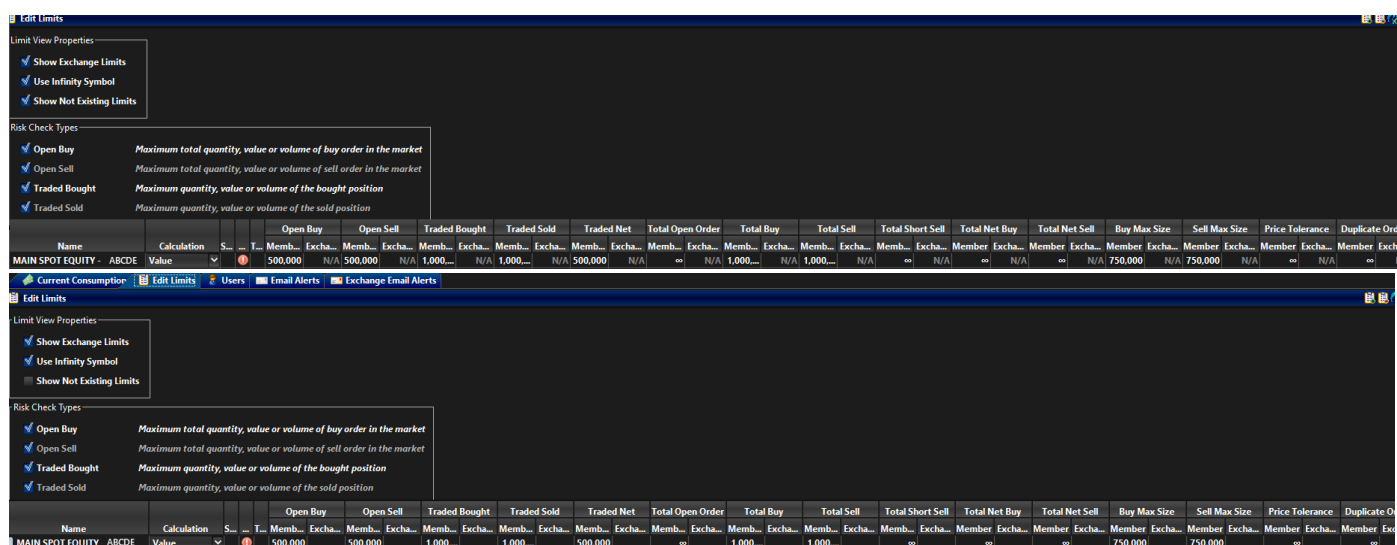
In the Edit limits, the option is ticked when you want the limits defined by the Exchange to be visible, and it can be unticked when you do not want the limits defined by the Exchange to be visible.

Figure 30 Show Exchange Limits Display

5.1. Risk Group Parameter Updates

Some of the risk parameters that are used for risk group checks can be updated intraday (effective as of the moment they are defined) and some of them can be updated next business day (the changes are effective one day after they are defined).

5.1.1. Intraday Changes

Below changes are effective as of the moment they are defined in PTRM GUI:
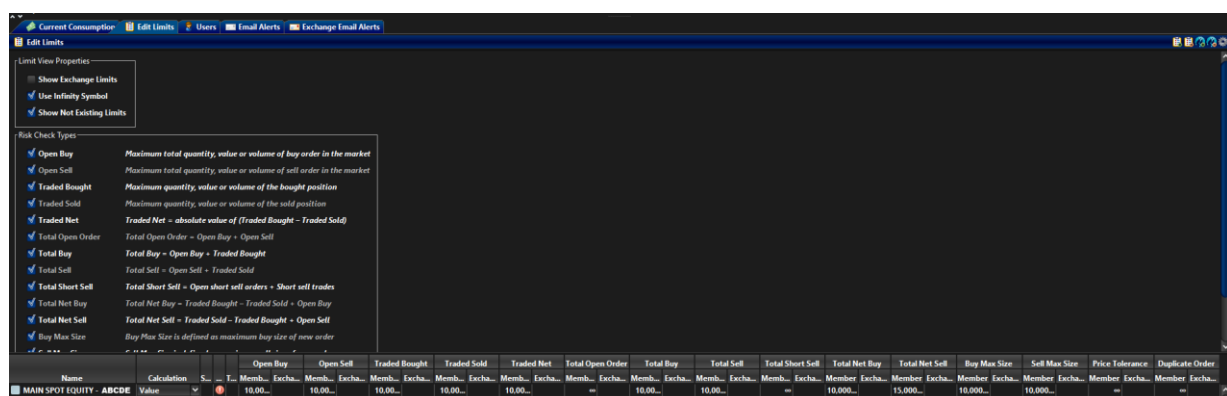
- Updating position limits, order rate limits and maximum buy and maximum sell size, duplicate order limit and price tolerance limit
- Changing Notice and Warning e-mails percentages
- Adding new e-mail alert recipient
- Blocking and unblocking all users in the risk group from entering orders
- Manually unblocking order rate breach
- Turning on/off restricted instrument flag
- Activation of mass cancellation which is the automatic cancellation of open orders when the risk group is in breach or the monitored user of the group is disconnected from the system
- Cancellation of all open orders of the users in a risk group at once
- Cancellation of all open orders of a specific user in a risk group at once
- Cancellation of all open orders of all users in member's all risk groups at once

Unsaved intraday changes are displayed in the intraday changes panel.

Figure 31 Intraday Changes Panel Display

5.1.2. Next Day Changes

When saved in the PTRM interface, next day changes are sent to Exchange database, and become effective when the system is started next day. The following changes are "next day".

- Adding a new limit or deleting an existing limit
- Activating e-mail notifications
- Removing existing e-mail alert recipients
- Adding new users to a risk group
- Creating or deleting a risk group
- Removing users from a risk group

- Changing monitored user of a risk group
- Setting the default group

Next day changes display in a different panel to illustrate that they are pending changes and will not be applied during the current trading day. If no next day change is made, next day changes panel will not be displayed.

If you add a next day change, and then if you need to modify that next day change before it is activated next day, the modification should be added to that change.

Figure 32 Next Day Changes Panel Display

5.2 User Limits - Pre-Trade Limits Group Panel

The Pre-Trade limits group panel shows the risk groups under the member in a hierarchical way.

The hierarchy contains the following levels:

- **Top level/Member:** Participant that trades at the Exchange.
- **2nd level/Risk Group:** Risk groups that are defined under the Exchange trading member. Risk groups are formed by grouping the users of the participant.
- **3rd level/Users:** Users under the risk groups.

Risk checks related to user limits are enforced on each risk group in real time as orders and execution messages are sent from the trading engine.

The following columns display on the Pre-Trade Limits Group Panel:

- **Restricted Instruments**: This column shows if the PTLG users are allowed to trade only the instruments for which members have defined trading limits or all other instruments excluding them.
- **Mass Cancel**: This checkbox shows whether all open orders of the users in the group will be canceled in case of a threshold breach or when the user in the group violates the order rate limit. If marked, open orders will be canceled automatically in the event of a breach.
- **Breaches**: Shows the number of risk check breaches by the risk group.
- **Warnings**: Shows the number of risk check warnings which belong to the risk group.
- **Notices**: Shows the number of notices which belong to the risk group.

- **Warn%**: When the risk group reaches this limit percentage, warning email alerts will be generated.
- **Duplicate interval**: Displays the duplicate interval in terms of seconds for duplicate order limit set by the Participant for a risk group on instrument type or class basis.
- **Notice%:** When the risk group reaches this limit percentage, notice email alerts will be generated. Notice percentage has to be configured equal as or smaller than warn percentage.
- **Order rate limit**: Displays the order per second limit set by the Participant for a risk group.
- **Exchange order limit**: Displays the order per second limit set by the exchange for a risk group. The lowest of the member and exchange order rate limits will be enforced.

In the risk group panel, you can access the filtering options by clicking anywhere on the section where the "Pre-Trade Limits Group" heading is located.

Figure 33 Pre-Trade Limits Group Panel Filtering Options Display
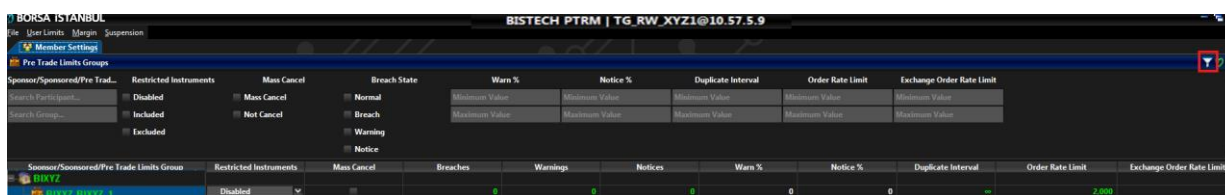
If the member has more than one risk group, risk groups can be filtered by putting the risk group number between two asterisks (*) in the "search group" row or by using the other options in Figure 29 regarding the other settings made by the member within the scope of risk group controls on the filtering screen.

5.2.1 Notice, Warn and Breach Indicators in the Pre-Trade Limits Group Panel

Risk groups in the Pre-Trade Limits Group panel will display in different colors depending on the alarm level of the group. The color corresponds to any notice, warn, and breach events that have occurred for that group.

- **Green:** The exposure of the group is currently below the notice level.
- **Yellow:** The group has reached/exceeded the notice level on a limit.
- **Orange:** The group has reached/exceeded the warning level on a limit.
- **Red:** The group has breached a limit.

While the group is breached, users of the group cannot submit any orders for the instruments whose limit is breached. Members of the group can still cancel open orders for these instruments.

To remove the breach of a risk group, see "**Unbreaching a Risk Group**" Section.

Figure 34 Notice, Warn and Breach Indicators Display

5.2.2   Setting Warn and Notice Percentages

You can configure warning and notice percentages to monitor Risk Group levels.

- **Notice:** Notice is the lowest level of alert.
- **Warning:** Warning is the next highest level of alert.
- **Breach:** Risk limits have been reached/exceeded.

To set the warning and notification percentages of a risk group:

1. Double-click the Warn% or Notice% column in the row of a risk group.
2. Enter a new value for Warn% or Notice%.

Figure 35 Setting Warning and Notice Percentages Display

3. Click the save button in the Pre-Trade Limits Group panel to save the changes.

Figure 36 Saving Warning and Notification Percentages Display

4. A pre-trade limits group saver window will appear, confirming the changes you have made to the risk group(s). Click the send selected items button to confirm the change(s) you made and send them to the system.
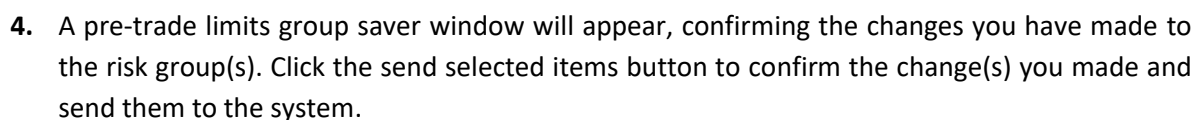
Figure 37 Sending the changes
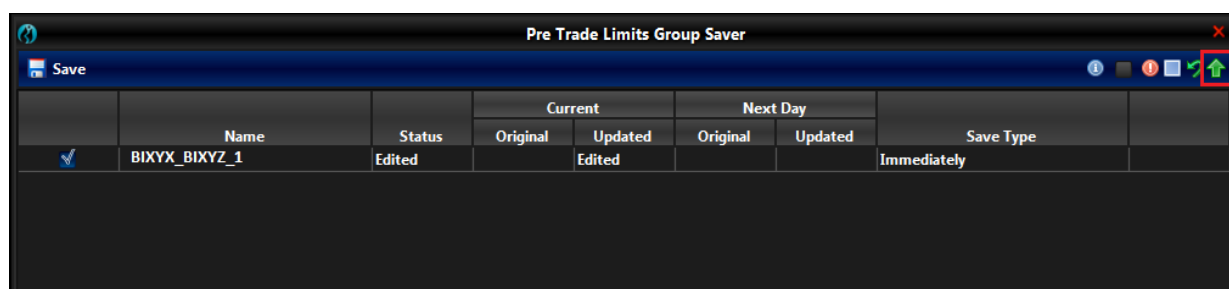
> **Note: This is an intraday change. This change becomes effective immediately. For more information about intraday changes, please see intraday changes section.**

5.2.3 Restricting Instruments for a Risk Group

The Pre-Trade Limits Group panel displays a column for Restricted Instruments. This column controls whether the risk group is allowed to trade only with the instruments that have member risk limits defined.

When **"disabled"** option is selected in the restricted instruments column (this is also the default option), the group can trade any instruments, and risk control is performed only on the instruments whose limits are defined and breaches will occur only for these instruments.

If **"included"** option is selected, users under this risk group may only trade in the instrument types / classes for which limits are configured by the member. Users in the risk group are not allowed to enter orders on other instruments. If only an exchange limit is defined for an instrument and no limit is defined by the member, orders cannot be entered in this instrument when this option is selected.

If **"excluded"** option is selected, users in the risk group cannot enter orders on instruments whose risk limit is defined by the member, and orders / transactions are allowed on other instruments. Orders are

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allowed for instruments where the Exchange limit is defined but the member limit is not defined. In order to restrict a risk group to trade only the instruments that have risk limits defined, complete the following steps:

1. On the Pre-Trade Limits Group Panel, select a risk group.
2. Select "included" or "excluded" option on the Restricted Instruments column. Click the Save button.

Figure 38 Enabling Restricted Instruments Display
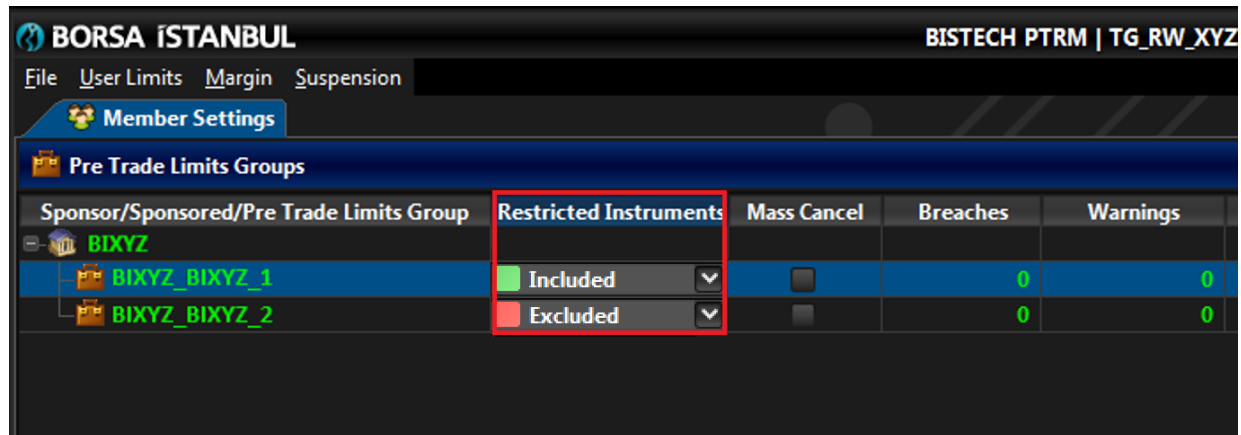
3. A pre-trade limits group saver window will appear, confirming the changes you have made to the risk group(s). Click the send selected items button to confirm the change(s) you made and send them to the system.

Figure 39 Sending the changes
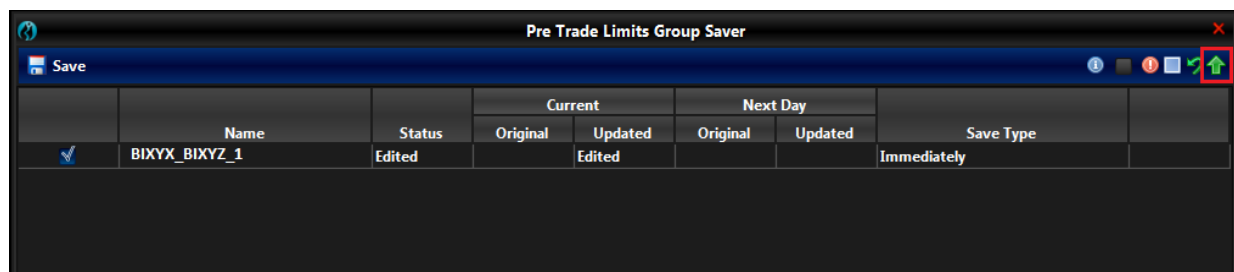
> **Note: This is an intraday change. This change becomes effective immediately.**

5.2.4 Mass Cancel

Mass cancel provides the possibility for the automatic cancellation of open orders of all users in the risk group in case of a limit breach for any of the instruments that have risk limits defined, or when any user in the group violates the order rate limit or when the monitored user is disconnected. If checked, open orders which belong to the users of the risk group will be automatically canceled according to the following rules.

In case of a limit breach for an Instrument Type or Class that has risk limits defined, all open orders owned by all users in the risk group in any Instrument that shares the same Instrument Type or Class will be canceled.

When the order rate limit is breached, all open orders owned by all users in the risk group will be canceled.

If the connection of the monitored user is broken, all open orders from the users under the risk group will be canceled.

In order to enable mass cancel function;

1. On the Pre-Trade Limits Group Panel, select a risk group.
2. Check the box for Mass Cancel. Click the Save button.

Figure 40 Enabling Mass Cancel Display
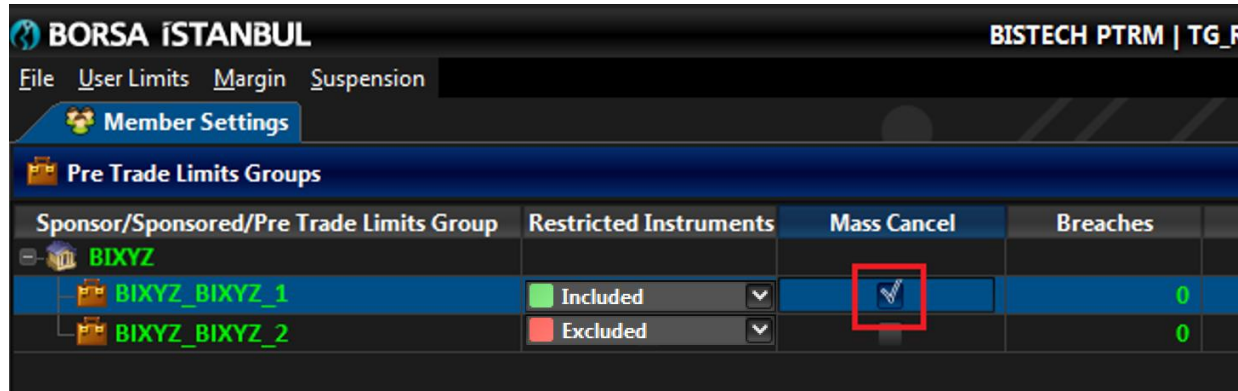
3. A pre-trade limits group saver window will appear, confirming the changes you have made to the risk group(s). Click the send selected items button to confirm the change(s) you made and send them to the system.

Figure 41 Sending the changes
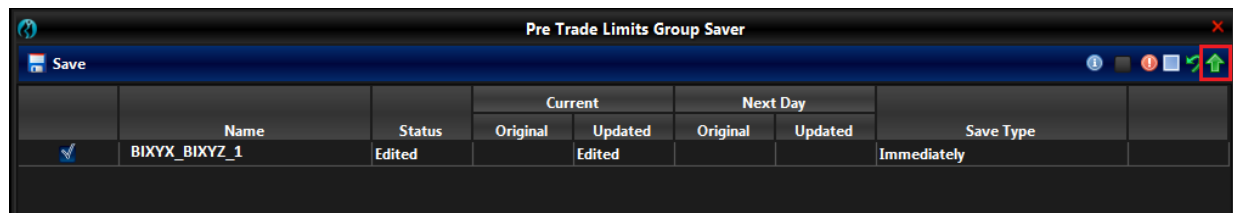
> **Note: This is an intraday change. This change becomes effective immediately.**

5.2.5 Setting the Order Rate Limits

Order rate limit is a restriction that is applied on PTLG basis and is managed from "User Limits" menu on risk group basis. This restriction is not limited to the instruments that have risk limits defined, but covers all instruments. When calculating risk, this function sums up all orders sent by all users in the risk group to the trading system.

Order rate limit check is based on new orders inserted into the order book. Below transactions are ignored by the order rate limit check:
  • Order Cancel requests
  • Rejected orders
  • Order modifications
  • Orders that do not stay in the order book such as Fill or Kill (FoK) orders (orders that are matched at the order entry are taken into account).

Order rate limit is defined as new orders per second. The order rate limit is checked every 1/10th of a second. If the order rate is equal to or exceeds 1/10th of the limit, an event of breach occurs.

Both the PTRM user of the participant and/or the Exchange can set an order rate limit for a risk group. Both are displayed on the Pre-Trade Limits Group panel. The most restrictive of the limits will be used when two different limits are defined by the participant and the Exchange. The limit in effect is displayed in green and the inactive one is displayed in grey. Currently, there is no plan to define any order rate limit for risk groups by the Exchange. However, the Exchange can use this restriction when needed.

To set an order rate limit on a risk group:

1. Double click the order rate column in the row of a risk group.
2. Enter a new value for the order rate.

Figure 42 Setting the Order Rate Limit Display
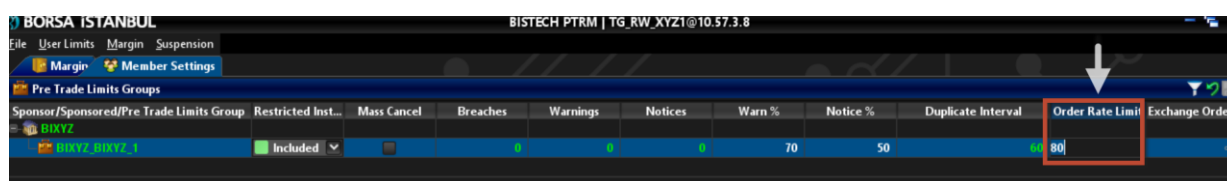
3. Click the save button on the Pre-Trade Limits Group panel to save your changes.

Figure 43 Saving the Order Rate Limit Display
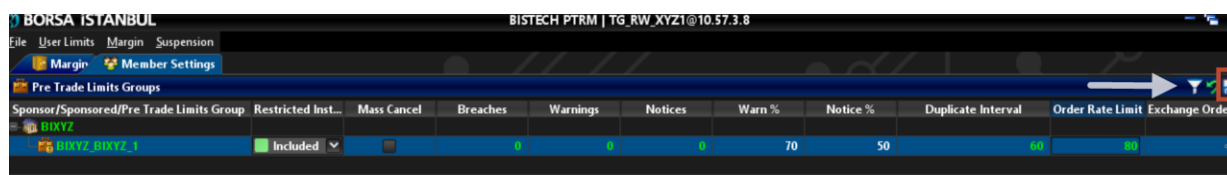
4. A pre-trade limits group saver window will appear, confirming the changes you have made to the risk group(s). Click the send selected items button to confirm the change(s) you made and send them to the system.

Figure 44 Sending the changes
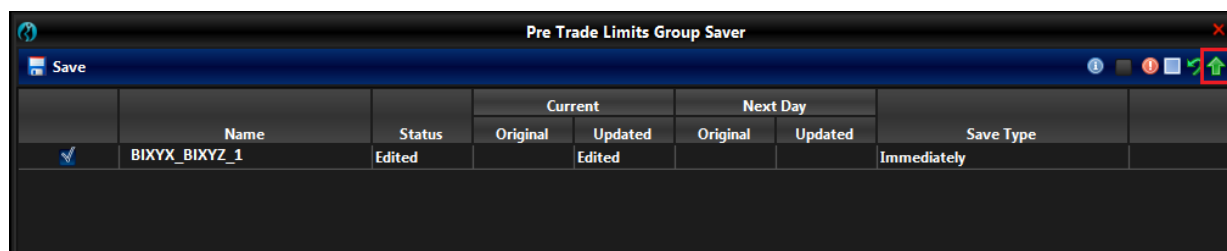
> **Note: This is an intraday change. This change becomes effective immediately.**

A screenshot of the information on the Pre-Trade Limits Group panel can be taken. It is possible to export the information on Pre-Trade Limits Group panel as a screen image or csv file, open the folder where the image or the file is saved, change the folder in which the image or the file will be saved and change the format of the screen image or the delimiter (separator) which is used in csv file with the export function which pops up by right-clicking anywhere in the section where the suspended accounts heading is located. The folder in which the image/file will be saved, the format of the image and the delimiter

which will be used in csv file may be changed through the "Settings". The "Open Containing Folder", "Screenshot" and "CSV" options will not be activated without selecting the folder that the image/file will be saved under the "Settings" option.

Figure 45 Export Pre-Trade Limits Group Panel Information Display

Figure 46 Export Pre-Trade Limits Group Panel Information Settings Display
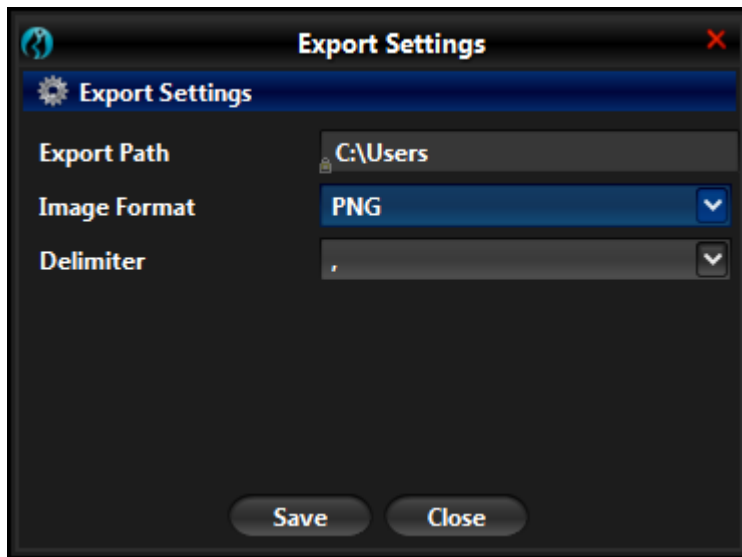
5.3 User Limits Current Consumption Tab

The current consumption tab displays instrument-based limit calculation methods and current usage of the limits which are defined for each risk group. In addition, current consumption of the instruments whose risk are calculated due to indirect usage caused by the fact that the Exchange sets limits for these instruments but the participant does not in case when restricted instruments function is enabled.

Figure 47 Current Consumption Tab Display

The following columns are shown in the current consumption tab:

- **Name:** The name of the instrument type or instrument class.

- **Calculation:** This shows the calculation method which is used for risk calculations. This can be selected as quantity, volume or value. All these three methods may be selected for Borsa İstanbul Equity Market and Derivatives Market. However, only quantity method may be selected for Borsa İstanbul Debt Securities Market and Precious Metals and Diamond Market.
- **Status:** If a risk limit has been defined for an instrument by the Exchange, "Status" indicates that the use of the limit will occur at the limits set by the Exchange.
- **Open Buy:** The current consumption of open buy orders for the instrument type or instrument class.
- **Open Sell:** The current consumption of open sell orders for the instrument type or instrument class.
- **Traded Bought:** The current consumption of executed buy orders for the instrument type or instrument class.
- **Traded Sold:** The current consumption of executed sell orders for the instrument type or instrument class.
- **Traded Net:** The absolute value of traded bought minus traded sold for the instrument type or instrument class.
- **Total Open Order:** The current consumption of open buy and sell orders for the instrument type or instrument class.
- **Total Buy:** The current consumption of open buy orders and trades (bought) for the instrument type or instrument class.
- **Total Sell:** The current consumption of open sell orders and trades (sold) sell orders for the instrument type or instrument class.
- **Total Short Sell:** The current consumption of open short sell orders and short sell trades for the instrument type or instrument class.
- **Total Net Buy:** Traded Bought – Traded Sold + Open Buy for the instrument type or instrument class.
- **Total Net Sale:** Traded Sold – Traded Bought + Open Sell for the instrument type or instrument class.

Click the title section of the current consumption tab for filtering options.

Figure 48 Filtering Options on the Current Consumption Tab Display
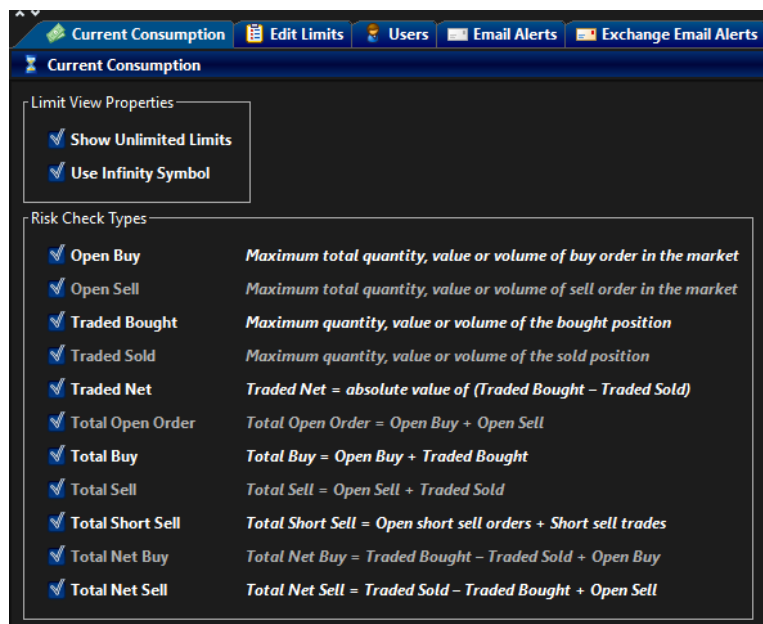
5.4 Working with Risk Groups

5.4.1 Adding a Risk Group

To add a risk group, complete the following steps:

1. Right-click on the participant's name using mouse, and then select Add Pre-Trade Limits Group from menu.

Figure 49 Adding a Risk Group Display
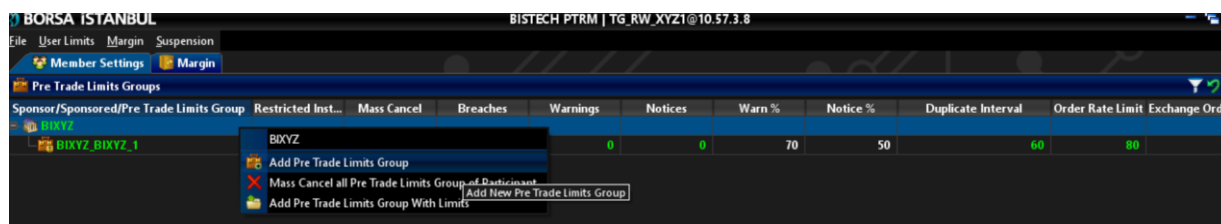
2. The Input window appears. Enter the name of the new risk group. Click the OK button, you can click the cancel button to cancel the action.

Figure 50 Naming the New Risk Group Display
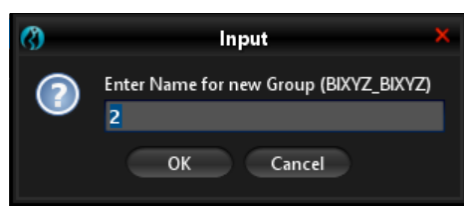
Note: A risk group must be given a unique name. The name should use the following naming convention: [BIMember Code] _ [BIMember Code] _ [Group Name]

3. Assign a user or multiple users to the new risk group from user picker by clicking select user button.

Figure 51 Adding User to a Risk Group Display
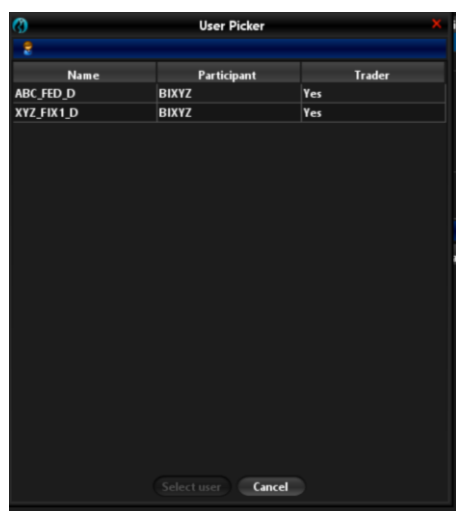
4. Assign a single or multiple tradeable (instrument type or instrument series) to the new group by clicking the "Add New Tradeable" button.

Figure 52 Adding New Tradeable Display
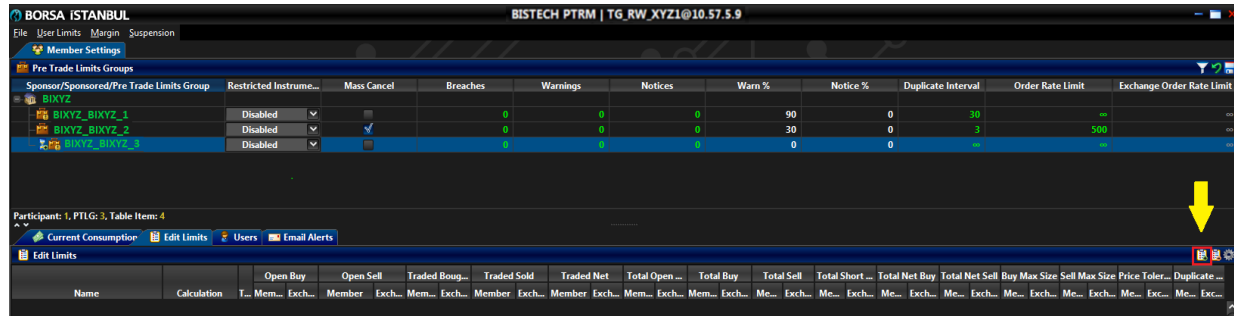
5. You can add a new tradeable by choosing the market, tradeable name (instrument type or instrument class) and risk calculation method (quantity, volume and value methods can be selected for Equity Market and Derivatives Market, only quantity method can be selected for Debt Securities Market and Precious Metals and Diamond Market) from the Add New Tradeable window.

Figure 53 Selecting Instrument Type/ Instrument Class and Risk Calculation Method Display
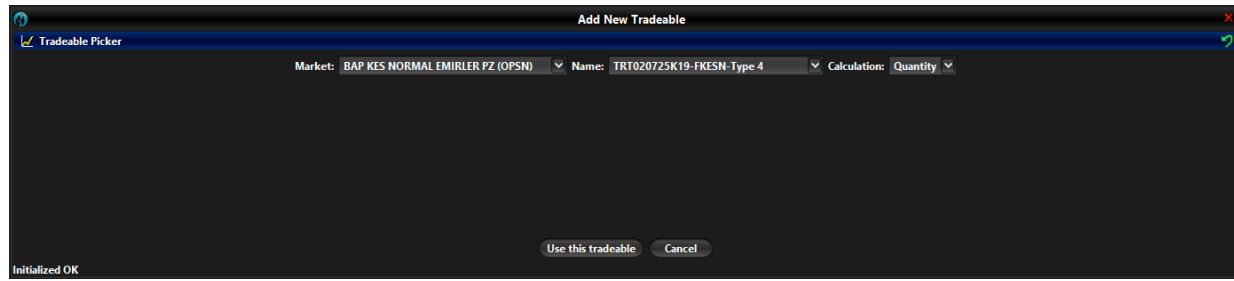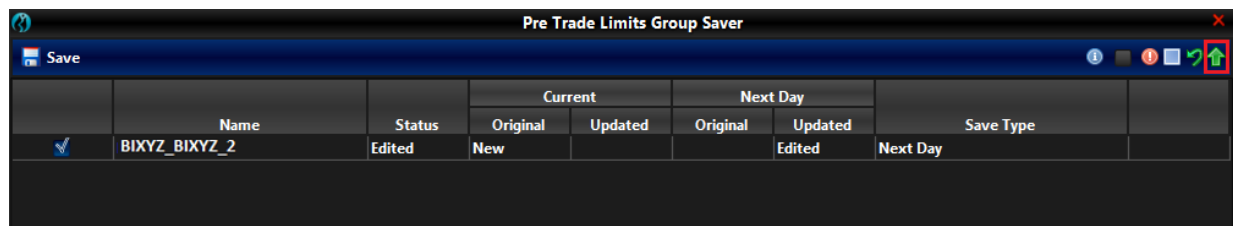
6. Click the save button in the Pre-Trade Limits Group panel to save your changes.

Figure 54 Saving Instrument Type/ Instrument Class and Risk Calculation Method Display
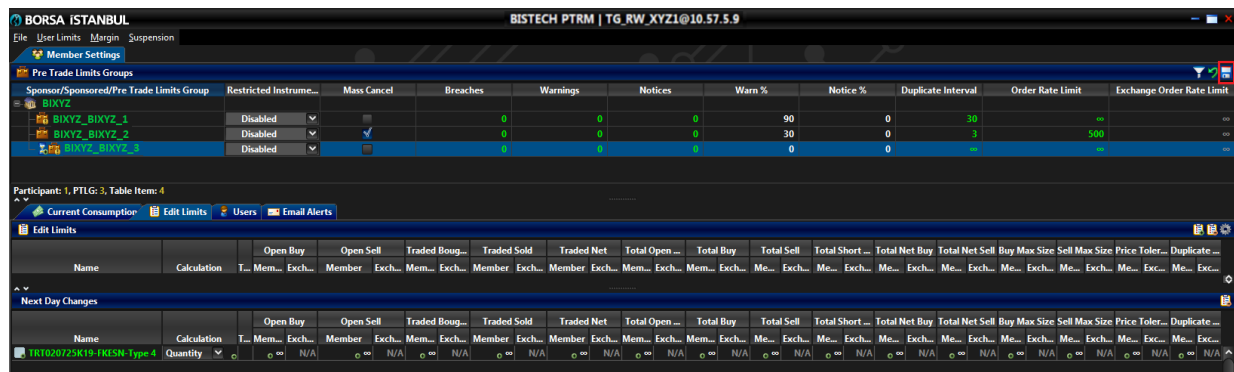
7. Pre-Trade Limits Group Saver window appears after confirming the new group or groups you have formed or existing group or groups you have changed by adding new instruments and setting risk limits for these new instruments. As these changes are next day changes, next day changes column will be updated in the Pre-Trade Limits Group Saver window. Click Send selected items button in order to save your change.
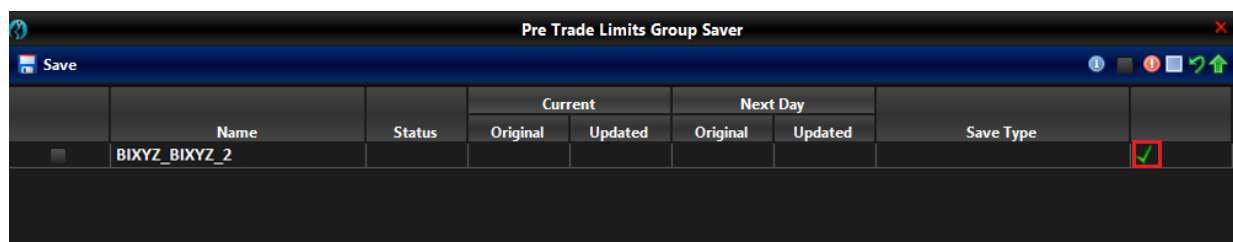
Figure 55 Pre-Trade Limits Group Saving Display

8. When the changes are successfully saved, a green check will appear in result of committing new values column. Confirmed changes will appear in the next day changes panel and become active the next trading day.

Figure 56 Save Risk Group Screen

> Note: This is a next day change. Saving the change sends it to the exchange database and becomes effective when the system is started next day. See next day change section for more information about next day changes.

5.4.2 Cloning a Risk Group

Risk group cloning allows a member to create a similar version of an existing risk group that already exists. When cloning, a new user must be assigned to the group, a new group name must be given, and there must be no group lock. Features such as the order rate limit and duplicate interval defined at the risk group level are also cloned. Along with these, tradeables and e-mail alerts become identical to the cloned group. Members cannot clone limits and features defined by Borsa Istanbul.

The existing group definitions that will be valid the next day are also cloned. For example, when a group that includes the ABCDE.E. instrument valid today and the FGHIJ.E. instrument valid the next day is cloned, a new group with the ABCDE.E. and FGHIJ.E. instruments will be created on the next day.

As an exception to this, if the existing email address is deleted so that the change takes effect the next day, it will still appear in the cloned group the next day.

After the cloning process, the existing cloned group can be deleted.

To clone a risk group, complete the following steps:

1. Select the risk group you want to clone from the risk group panel in the BISTECH PTRM user interface.

2. Right-click and then select the Clone Pre-Trade Limits Group option from the menu.

Figure 57 Cloning a Risk Group Display
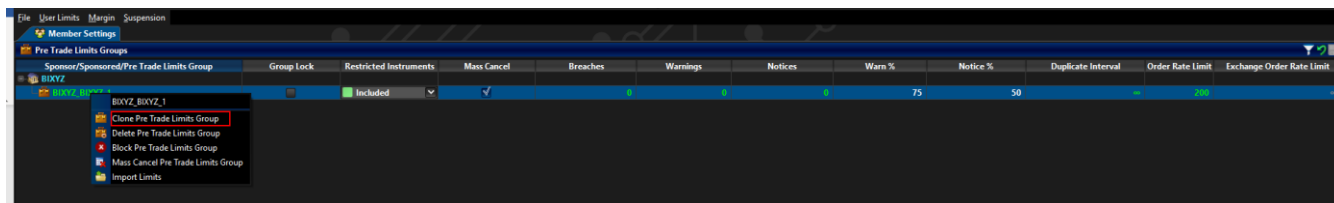
3. Enter the name of the new risk group. Assign a user or multiple users to the new risk group.

Figure 58 Naming the Risk Group Display
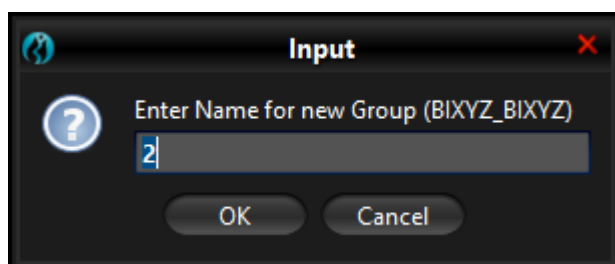
Figure 59 Adding User to a Risk Group Display
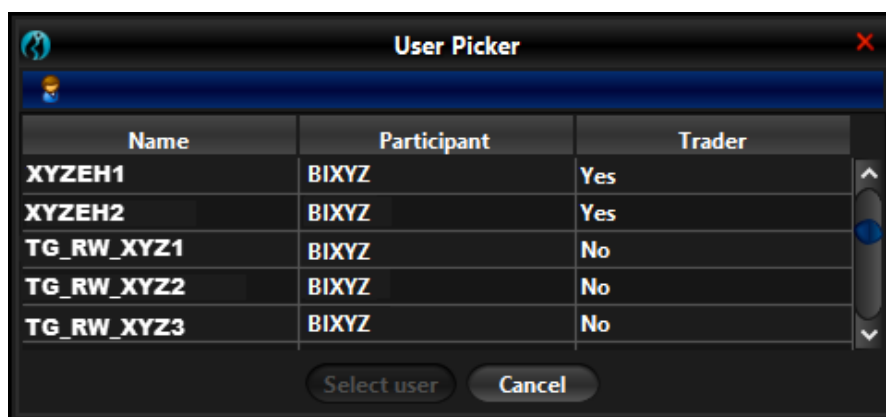
4. After selecting the group name and users, save the changes in field number "1" as shown below. The group is cloned by sending the selected items from field number "2".

Figure 60 Save Risk Group Screen
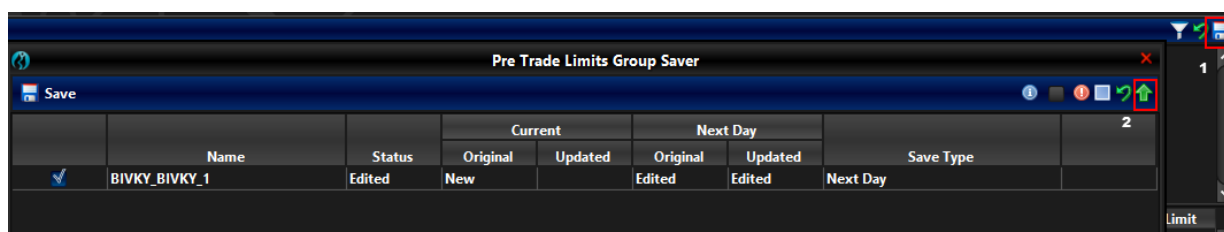
Note: This is a next day change. Saving the change sends it to the exchange database and becomes effective when the system is started next day.

5.4.3   Blocking a Risk Group

A risk group can also be blocked manually by the Exchange or the participant. Users of blocked groups cannot enter new orders. Nor will they be able to alter existing orders.

Users of a blocked risk group:

- Able to delete existing orders,
- Allowed to login, and
- Allowed to receive broadcasts, and send queries. Thus, they can monitor the market.

Manually blocked risk groups are never unblocked automatically intraday. A blocked risk group can be unblocked intraday by the participant or by the Exchange. If the block of the risk group has not been manually removed during that trading day, the blocking will be automatically removed at the beginning of the next trading day.

To block a risk group manually, follow these steps:

1. Select a risk group from the Pre-Trade Limits Group panel in BISTECH PTRM user interface.
2. Right-click using the mouse and then select the Block Pre-Trade Limits Group from the right-click menu.

Figure 61 Pre-Trade Limits Group Saving Display
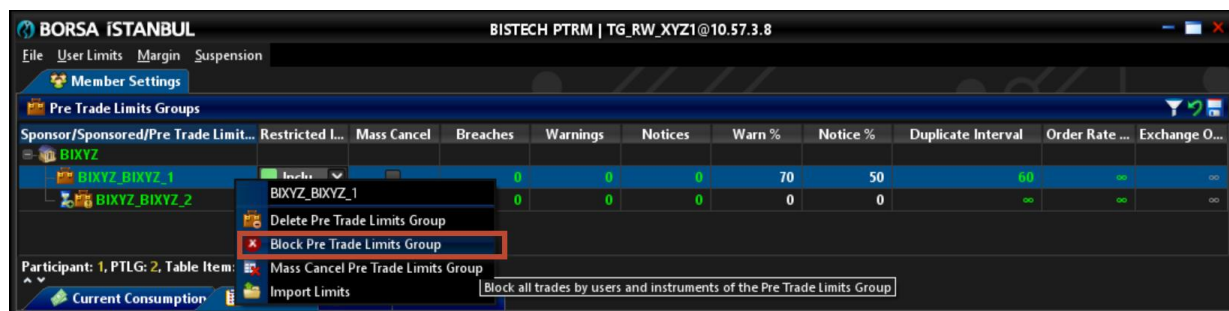
3. The icon for the group changes to indicate this condition.

Figure 62 Blocked Risk Group Display
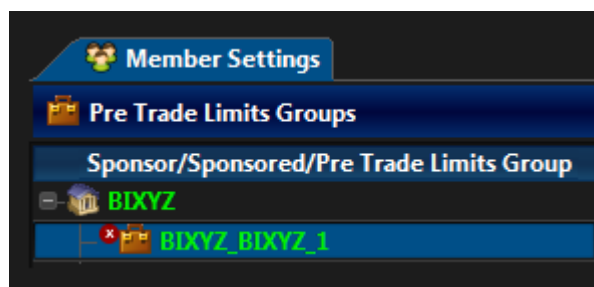
> **Note: This is an intraday change. This change becomes effective immediately.**

5.4.4   Deleting a Risk Group

To delete a risk group, complete the following steps:

1. Select a risk group from the Pre-Trade Limits Group panel in BISTECH PTRM user interface.
2. Right-click using mouse, and then select Delete Pre-Trade Limits Group from the right-click menu.

Figure 63 Deleting a Risk Group Display
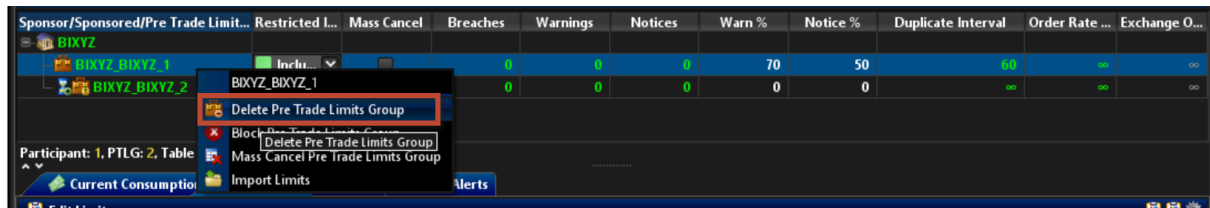
3. Click the Save button.

Figure 64 Saving a Risk Group Deletion Display
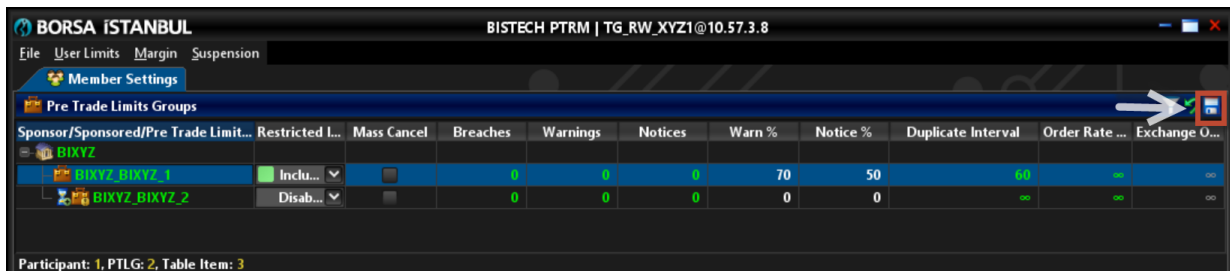
4. Pre-Trade Limits Group Saver window will open. In order to delete the group, click send selected items button. In order to cancel the action, click the undo selected items button (☑).

Figure 65 Sending the changes
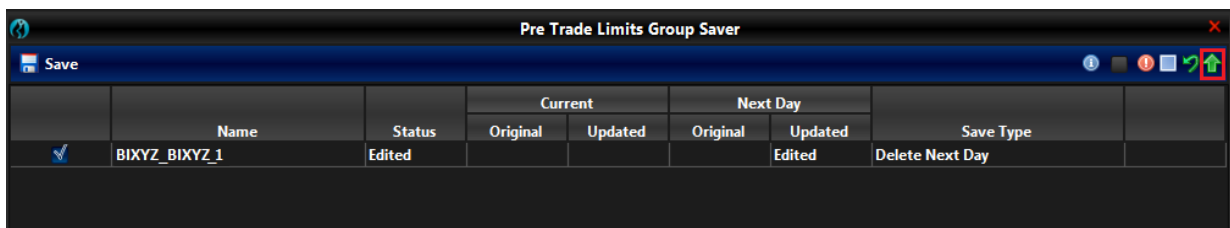
> **Note: This is a next day change. Saving the change sends it to the exchange database and becomes effective when the system is started next day.**

5.4.5 Mass Canceling Orders

Mass Canceling Orders of a Risk Group

The cancellation allows the authorized PTRM user to cancel all of the open orders owned by users in a specific risk group. To mass cancel orders for a risk group, complete the following steps:

1. Select a risk group from the Pre-Trade Limits Group panel in BISTECH PTRM user interface.
2. Right-click using mouse and then select Mass Cancel Pre-Trade Limits Group from the right-click menu.

3. All open orders for the group will be cancelled.

> **Note: This is an intraday change. This change will take effect immediately.**

Mass Canceling Orders on Member Level

The authorized PTRM user may collectively cancel the open orders of the users in all member's risk groups at once. To mass cancel orders for all member's risk groups, complete the following steps:

1. Select the member from the Pre-Trade Limits Group panel in BISTECH PTRM user interface.
2. Right-click using mouse and then select Mass Cancel all Pre-Trade Limits Group of Participant from the right-click menu.

Figure 67 Mass Canceling Orders of Member's Risk Groups Display
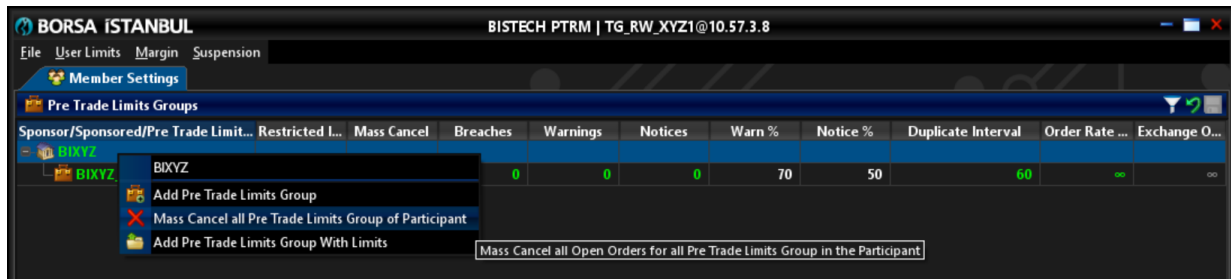
3. All open orders for all risk groups of the member will be cancelled.

Mass Canceling Orders on User Level

The authorized PTRM user may cancel all open orders of a specific user in a member's risk group at once. To mass cancel orders for a specific user in member's risk groups, complete the following steps:

1. From the Pre-Trade Limits Group panel, click the Risk Group that contains the user you want to mass cancel and then click the users tab.
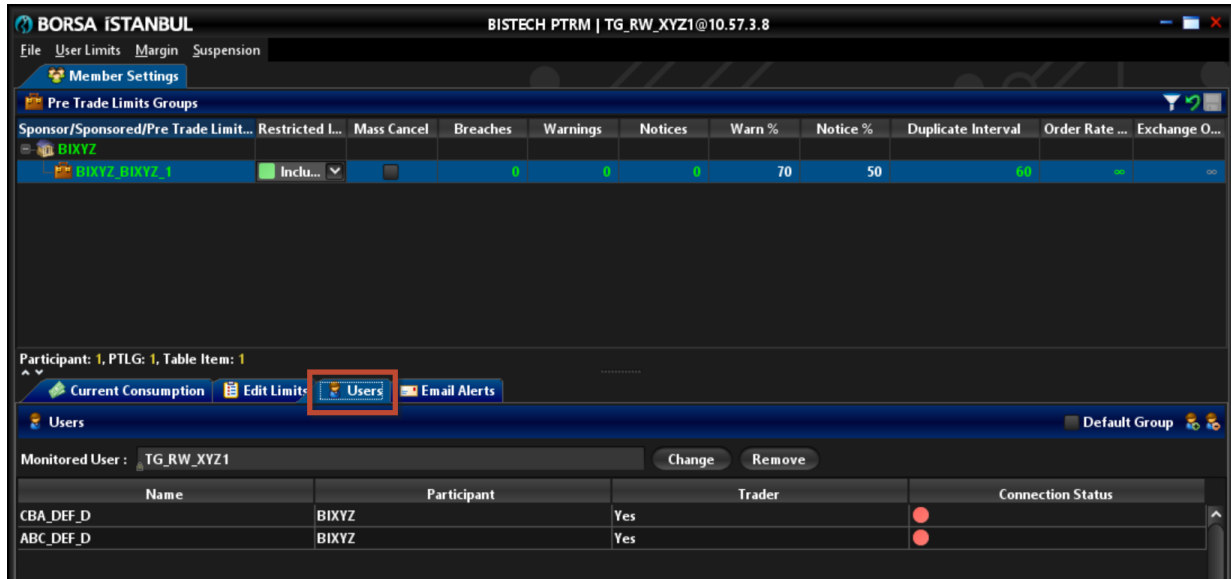
2. Right-click on the user you want to mass cancel and then select "mass cancel for user" from the drop-down menu.
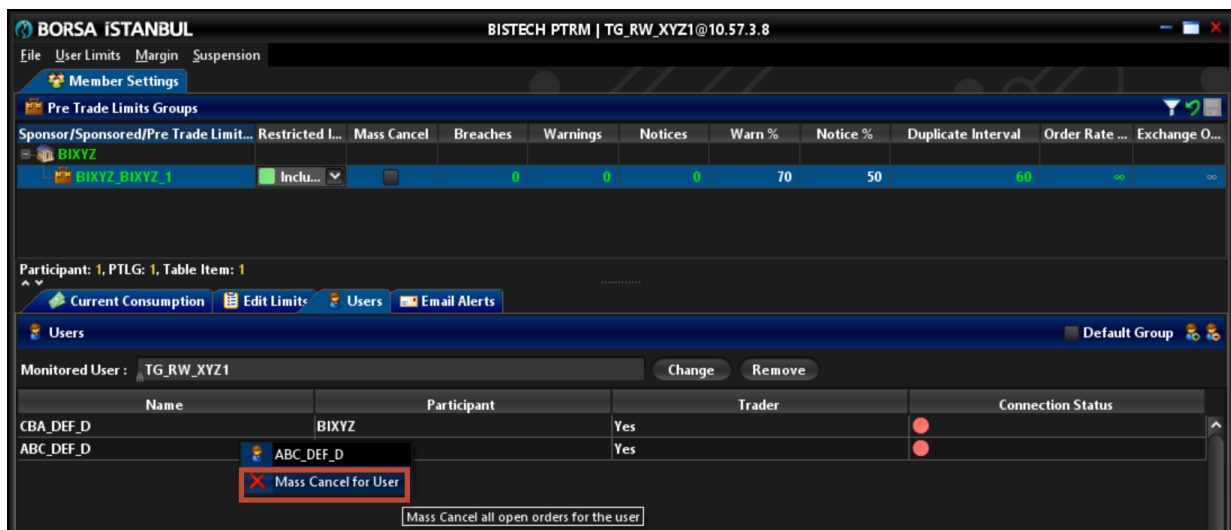
3. All open orders for the selected user will be cancelled.

5.4.6 Unblocking a Risk Group

To unblock a risk group, follow these steps:

1. Select a risk group from the Pre-Trade Limits Group panel in BISTECH PTRM user interface.
2. Right-click using mouse, and then select Unblock Pre-Trade Limits Group from the right-click menu. Blocking of the group will be removed. The icon used for the group changes to indicate this. Once the risk group is unblocked, users in the group are allowed to enter orders and trade normally.

Figure 70 Unblocking a Risk Group Display
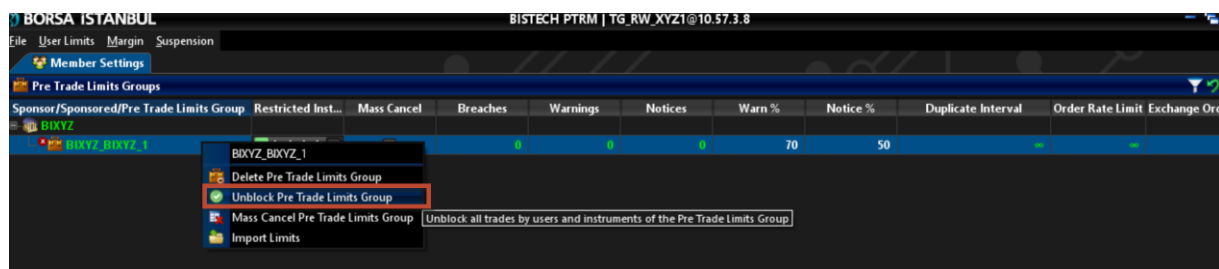
> **Note: This is an intraday change. This change becomes effective immediately.**

5.4.7 Unblocking an Order Rate Breach

If a risk group breaches their order rate limit, they will not be able to submit any new orders. A manual unblock from an authorized PTRM user is required to remove the breach restriction.

Follow these steps to unblock an order rate breach;

1. Select a blocked risk group in the Pre-Trade Limits Group panel.
2. Right-click using mouse and then select Unblock order rate from the right-click menu.

Figure 71 Unblocking an Order Rate Breach Display
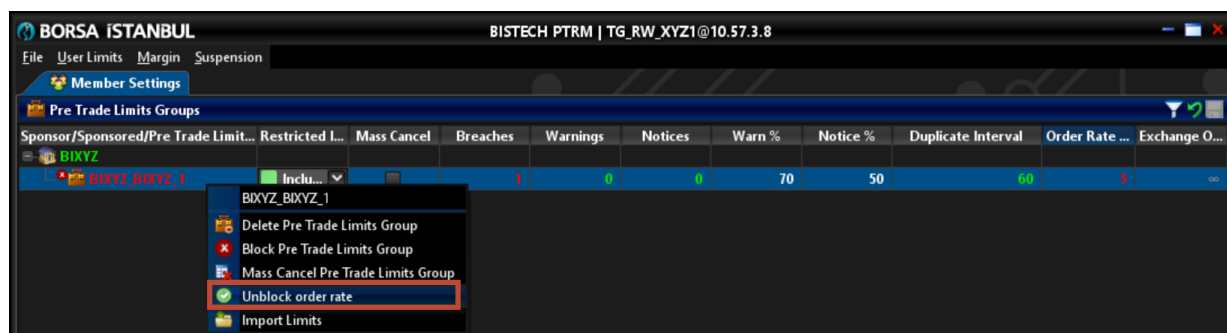
> **Note: This is an intraday change. This change becomes effective immediately.**

5.4.8 Removing the Intraday Instrument Position Limit breach of a Risk Group

In the case of a breach of an instrument position limit, users in the group can:

- Cancel open orders.
- Send orders and trade normally in instrument types and instrument classes that are not breached.

Users in the risk group cannot:

- Place new orders for the instruments whose instrument types or classes are breached.
- Alter an existing order for the instruments whose instrument types or classes are breached.

If a trader cancels the orders until their limit is no longer in breach, the breach restriction is removed automatically and they can send orders and trade normally. In order to remove a breach of a risk group, the participant may increase the limit for the breached instrument type or class. When breach occurs as

a result of duplicate order limits, it can be removed by increasing the limit or removing the breach manually.

5.4.9 Risk Group Lock

The Exchange user can lock member risk groups to prevent the users of the participant from making changes. A locked-down risk group is not authorized to take the following actions;

* The member will not be able to add or remove users to the existing risk group(s).
* The member will not be able to change alert levels for email alerts.

A locked-down risk group is authorized to take the following actions;

* Add and remove e-mail alerts recipients.

> **Note: This is an intraday change. This change becomes effective immediately.**

5.5 Editing Instrument Limits

Instrument limits and risk calculation methods used in risk calculations are defined per tradeable (instrument type or instrument class). In BISTECH PTRM application, you can configure the tradeable limits by setting the following parameters:

1. Select an instrument type or instrument class. If the name of the instrument defined for a risk group starts with a gray square icon, the defined instrument is an instrument class, if the icon is yellow, the defined instrument is an instrument type.

Figure 72 Instrument Type / Instrument Class Limits

2. Select a risk calculation method. Quantity, volume and value methods can be selected for Equity Market and Derivatives Market in the current phase. However, only quantity method can be selected for Debt Securities Market and Precious Metals and Diamond Market.

> **Note: For Debt Securities Market and Precious Metals and Diamond Market, position risk limits can be defined only on Quantity basis. In Equity Market and Derivatives Market, position risk limits can be defined on Quantity, Volume and Value basis.**

Risk calculation methods used in risk calculations for position risk limit checks and maximum buy and maximum sell size checks are as below:

* **Quantity** (number of instruments)
* **Volume** (number of instruments * instrument size)

• **Value** (number of instruments * instrument size * price * exchange rate)

Position risk limit checks are performed by the following 11 different risk calculations taking into account the orders placed in the order book and the trades executed from the beginning of the day by the users included in the risk group:

Table 8 Position Risk Limits

A:	Open Buy Orders	
B:	Open Sell Orders	
C:	Traded Bought	
D:	Traded Sell	
E:	Traded Net	**E = |C-D|**
F:	Total Open Order	**F=A+B**
G:	Total Buy	**G = A+C**
H:	Total Sell	**H = B+D**
I:	Total Short Sell*	**Open short sell orders + Short sell trades**
J:	Total Net Buy	**I = C-D+A**
K:	Total Net Sell	**J = D-C+B**

*Total short sell includes the open sell orders sent with short sell flag and the trades resulting from these orders.

Maximum buy size and maximum sell size which are among the pre-trade risk checks refer to the maximum buy order size that can be sent to the system at once and the maximum sell order size that can be sent to the system at once, respectively.

5.5.1 Price Tolerance Limit

Price Tolerance Limit can be set by members for rejecting orders with a price deviance which is equal to or more than the determined price tolerance percentage calculated over the control price.

Price tolerance limit is set as percentage. It assures the order price is within the range of percentage set for the control price. It is set at instrument type and instrument class level in the same manner with the other position limits and maximum buy and maximum sell size.

If there is a value (in percentage) set for the price limit, PTRM checks the price of new orders and the modified orders before admitting them to the system, according to the price controls stated below:

If;

- Order Price ≤ Control Price - (Price Tolerance Limit * Control Price)➔order is rejected
- Order Price ≥ Control Price + (Price Tolerance Limit * Control Price)➔order is rejected
- Control Price - (Price Tolerance Limit * Control Price) < Order Price < Control Price + (Price Tolerance Limit * Control Price)➔order is accepted

In Derivatives Market, if control price of strategy orders is between -1 and +1, control price will be taken as 1 for price tolerance limit.

Control price is on an instrument series basis. Following are considered as the control price in below order, depending on their existence in the system.

- **Last Match Price**: It is the price of the intraday last trade. It indicates the price of the last trade in that trading day regardless of the session state changes. Trade report prices are not taken into consideration as last match price. For instruments that are traded at Debt Securities Market, the price of the non-cleared trades may be the last match price. Base price (not the last trade price in the normal session) will be used as a control price till the first trade in the evening session of the Derivatives market.
- **Base Price:** If there is no intraday last match price, base price becomes the control price. Base price is the price that is the basis for determining the upper and lower price limits between which the instruments can be traded during a session. In BISTECH System, the closing price of the previous trading day is determined as the base price. There is no base price for the instruments that are traded at Debt Securities Market. In the Derivatives Market base price for the evening session is the daily settlement price announced at the end of the normal session.
- **Best bid price or best ask price**: If there is no last match price or the base price for the instrument, for bid orders, the best bid price; and for the ask orders best ask price on that order book becomes the control price.
- **Reference Price**: If there is no best bid/ask price, base price or last match price, reference price will become the control price.
    - o For Debt Securities Market closing price of the previous day may be considered as reference price.
    - o For Equity Market, where none of the above are present, reference price expresses the following in terms, according to their presence in the system:
        - ▪ Injected reference price
        - ▪ Settlement price of the last trading day
    - o There is no reference price for Derivatives Market instruments.
- There will be no check if none of the last match, base, best order or reference prices exist in the system.

If no price tolerance limit is set (no additional control is made in this case) or if the price calculated with the control price and the set limit exceeds the price limits set by the Exchange within the trading rules, the price limits set by the Exchange shall apply.

To set a price tolerance limit on a risk group at the level of the instrument of the given risk group:

1. If price tolerance limit is to be set for an instrument of which the instrument type or class is already defined under the risk group, double click the price tolerance limit column in the row of the instrument.

2. Enter a new value for the price tolerance limit.

3. Click the save button on the Pre-Trade Limits Group panel to save your changes.

Figure 73 Setting the Price Tolerance Limit Display

4. A pre-trade limits group saver window will appear, confirming the changes you have made to the risk group(s). Click the send selected items button to confirm the change(s) you made and send them to the system.

5. If price tolerance limit is to be set for a new instrument of which the instrument type or class is not already defined under the risk group, new instrument type or class has to be defined firstly as shown in Figure 45. This will be a next day change. Next day, when the instrument (type/class) is activated, price tolerance limit can be set as described in the first 4 steps and this will be an intraday change.

Figure 74 Saving the Price Tolerance Limit Display

Stop and Strategy Orders

Stop orders at Derivatives Market will be subject to price tolerance limit control after they are activated.

Strategy orders at Derivatives Market are not checked through the limits set for instruments (legs of the strategy). Instead, they are checked through the limits set for strategy orders themselves.

5.5.2 Duplicate Order Limit

Duplicate order limit is the limit set for the number of orders for the same contract/instrument under the related instrument class and/or instrument type with the same quantity, price and side (buy/sell) of a user for a certain time interval (in seconds). This limit control can be defined either only setting the number of duplicate orders or in addition to this, duplicate time interval in seconds can be set as well.

Duplicate order interval is the time interval during which the duplicate orders sent for the same contract/instrument under the related instrument class and/or instrument type with the same quantity, price and side (buy/sell) of a user defined under the risk group are counted. It can be defined in terms

of seconds. When the duplicate interval limit is set as infinite, duplicate order count will continue during the trading day.

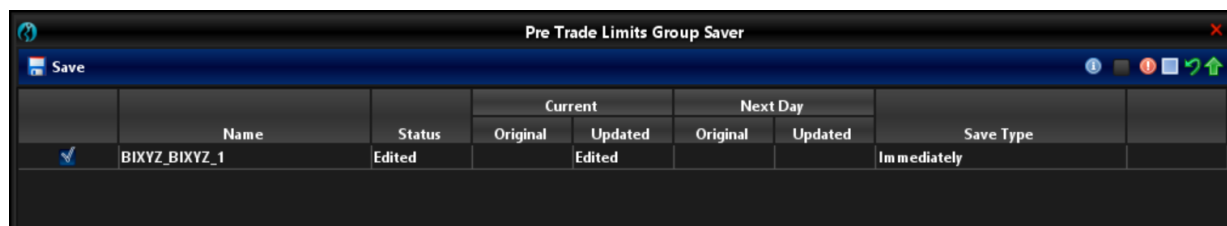To set a duplicate order time interval:

1. Double click the duplicate interval column at the given risk group level.

2. Enter a value for duplicate interval in terms of seconds.

3. Click the save button on the Pre-Trade Limits Group panel to save your changes.

Figure 75 Setting Duplicate Interval Display
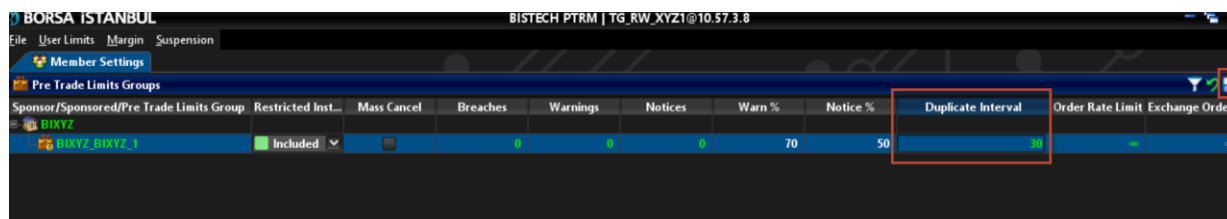
4. A pre-trade limits group saver window will appear, confirming the changes you have made to the risk group(s). Click the send selected items button to confirm the change(s) you made and send them to the system.

Figure 76 Saving the Duplicate Interval Display

			Current		Next Day			
	Name	**Status**	**Original**	**Updated**	**Original**	**Updated**	**Save Type**	
✓	BIXYZ_BIXYZ_1	Edited		Edited			Immediately	

Note: This is an intraday change. This change becomes effective immediately.

Not: If there is no limit set for the duplicate interval, duplicate order counting will continue during the trading day.

Duplicate order limit, which can be defined on the basis of instrument type and/or class, refers to the maximum number of duplicate orders that can be entered separately for each instrument within the instrument type / class for which the definition is made.

To set a duplicate order limit:

1. If duplicate order limit is to be set for an already defined instrument type or class under the risk group, double click the duplicate order for the instrument of the given risk group.

2. Enter a value for duplicate order limit.

Figure 77 Setting the Duplicate Order Limit Display

3. Click the save button on the Pre-Trade Limits Group panel to save your changes.

Figure 78 Saving the Duplicate Order Limit Display

In case of a breach in the duplicate order limit on an instrument, related risk group is blocked on the instrument type or class and the users under the risk group are not allowed to submit new orders to the any of the instruments/contracts of this instrument type/class. Duplicate order breach is not removed automatically. A blocked risk group can be unblocked intraday by the participant in two ways. Either the participant may increase the limit for the breached instrument type or class - in this case counting for the instrument will not be reset - or the participant/Exchange may manually remove the block - in this case counting for the instrument will be reset.

If the block of the risk group has not been manually removed during that trading day, the blocking will be automatically removed at the beginning of the next trading day.

If the block of the risk group has not been manually removed during that trading day, the blocking will be automatically removed at the beginning of the next trading day.

Figure 79 Unblock of Duplicate Order Limit Breach Display

Counting in the instrument will be reset once an order is cancelled or replaced with a new price or quantity. Furthermore, counting in the instrument will be reset when an order with a different quantity, price or direction is placed.

5.5.3 Exchange Limits and Member Limits

Limits used for risk group checks may be set by participants and the Exchange as well. Exchange may also set an exchange wide limit per instrument type and instrument class. Exchange may also set limits on risk group basis. If the limit set by the Exchange on the risk group is more restrictive than the Exchange wide limit, the limit set for the risk group will apply. The participant may set a more restrictive limit than the limit set by the Exchange on the risk group. The most restrictive of the limits determined by the Exchange and the member shall be effective.

It is not planned to set exchange-wide limits for risk group limits in the current stage of the BISTECH system.

5.5.4 Breached Limits

If any of the risk limits are reached/exceeded, users of this risk group are:

- Not allowed to submit new orders for any instruments connected to the affected instrument type or class.
- Not allowed to amend existing orders on any instruments connected to the affected instrument type or class.
- Allowed to cancel open orders, quotations.
- Allowed to enter new orders for the instruments connected to unbreached instrument type or class.

Once the users in the risk group cancel open orders until their limit is no longer in breach, the breach restriction is removed automatically. The Exchange or the participant can remove the breach event by increasing the breached limit during the day

Post-order and at trade risk controls are performed after orders and trades. If the consumption is equal to or greater than the given limit, breach occurs. The order or trade causing the limit to be exceeded is not blocked. Consumption is updated after the orders or trades are processed by PTRM. It is possible for

a breach to occur during the time elapsed until the transmission of orders or the realization of trades is reflected in consumption. After the breach occurs, actions are implemented in accordance with the predetermined rules of Exchange or Member.

5.5.5 Adding a New Instrument Limit

To add a new instrument limit for a risk group, complete the following steps:

1. Click on the risk group for which you want to modify limits, and then click on the edit limits tab. Then click the Add New Exchange Tradeable button.
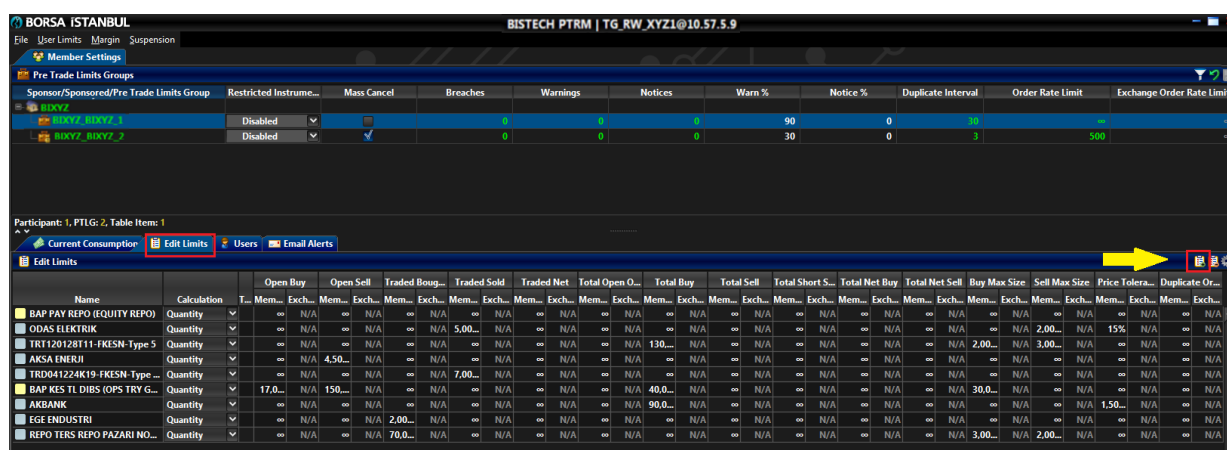
2. The Add New Tradeable window appears. Select an instrument type or instrument class;
    Market: Select the market where the instrument is offered. Leaving this field blank will show all tradeables in all markets.
    Name: The instrument type or instrument class to monitor.
3. For the risk checks of the limits, all three methods (quantity, volume and value) are used in Equity Market and Derivatives Market. However, only "quantity" method is used as calculation method in Debt Securities Market and Precious Metals and Diamond Market. Other calculations methods (volume and value) will not appear in the calculation method selection area for the instruments which are traded at Debt Securities Market and Precious Metals and Diamond Market.
4. Click the "Use this tradeable" button.
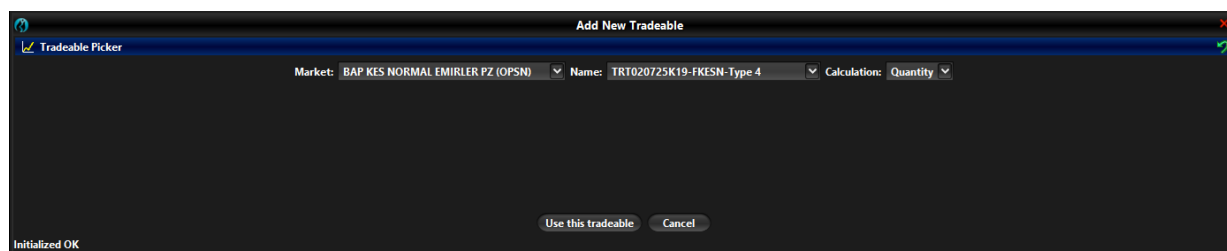
> **Note: The listed instruments are those that are defined at the level of the instrument type or class that is valid only for the logged in user type.**

5. A row with the new tradeable instrument will appear in "Next Day Changes" panel in "Edit Limits" tab. Set any limits to be enforced on the selected tradeables on this row.

Figure 82 Setting Instrument Limit Display

6. Click on the save button. Pre-Trade Limits Group Saver window appears. Click Save button to confirm your change.

Figure 83 Next Day Changes Available Display

7. To confirm the changes, click on the send selected items button.

8. The new limits will appear in the next day changes panel and become active the next trading day.
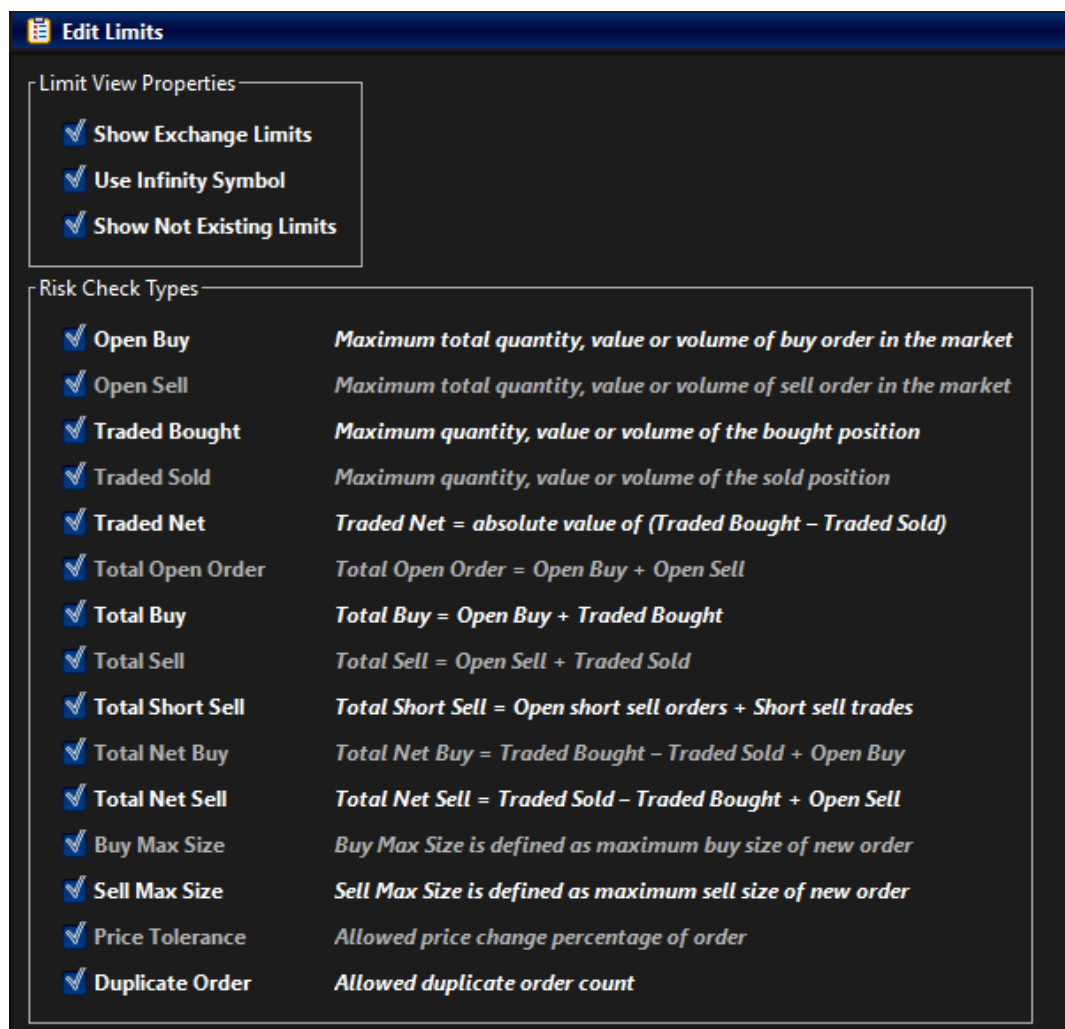
> **Note: A zero limit means there is no limit defined.**

Figure 84 Saved Instruments Limits Display

> **Note: This is a next day change. Saving the change sends it to the exchange database and becomes effective when the system is started next day.**

Click on the top of the edit limits tab for filtering options:

Figure 85 Filtering Options on the Edit Limits Tab Display

5.5.6 Editing Instrument Limits

To edit a limit on a risk group, complete the following steps:

1. Click on the risk group for which you want to set limits in PTRM user interface, and then click the Edit limits tab.
2. In the Intraday Changes Panel, review or change the fields if needed.

Figure 86 Edit Instrument Limits Display

3. Click Save button.

Figure 87 Saving Instrument Limits Display
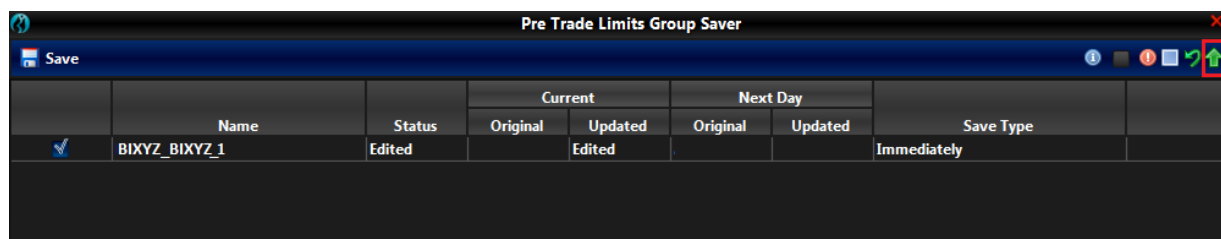
4. The Pre-Trade Limits Group Saver window appears confirming the changes you have made to the risk group(s). Click "send selected items" button to confirm the changes you have done and send them to the system database.

> Note: This is an intraday change. This change becomes effective immediately.

5.5.7 Deleting Instrument Limits

To delete an existing instrument limit defined in a risk group, complete the following steps;

1. Click on the risk group for which you want to edit the limits, then click the Edit Limits tab.
2. In either the Intraday Changes or the Next Day Changes panel depending on the timing of the configuration, select the instrument whose limits to be deleted.
3. In the appropriate panel (intraday changes or next day changes), click the remove button.

Figure 88 Deleting an Instrument Limit Display
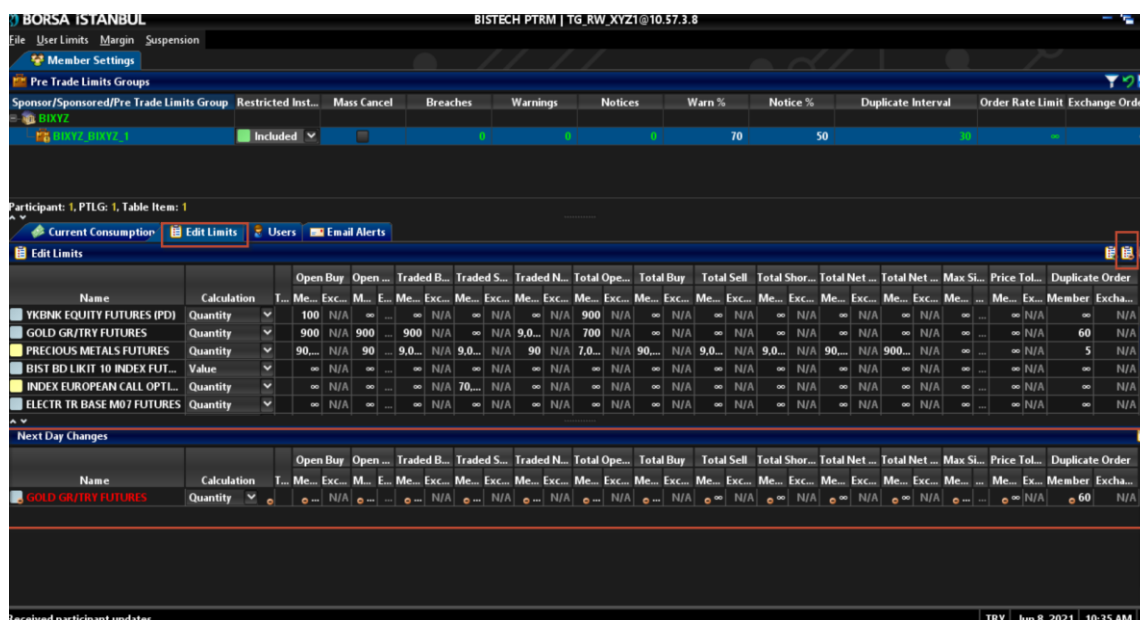
4. Click the Save button. The Pre-Trade Limits Group Saver window appears confirming the changes for the group or groups you have changed. Click "send selected items" button to confirm the changes you have done and send them to the system database.

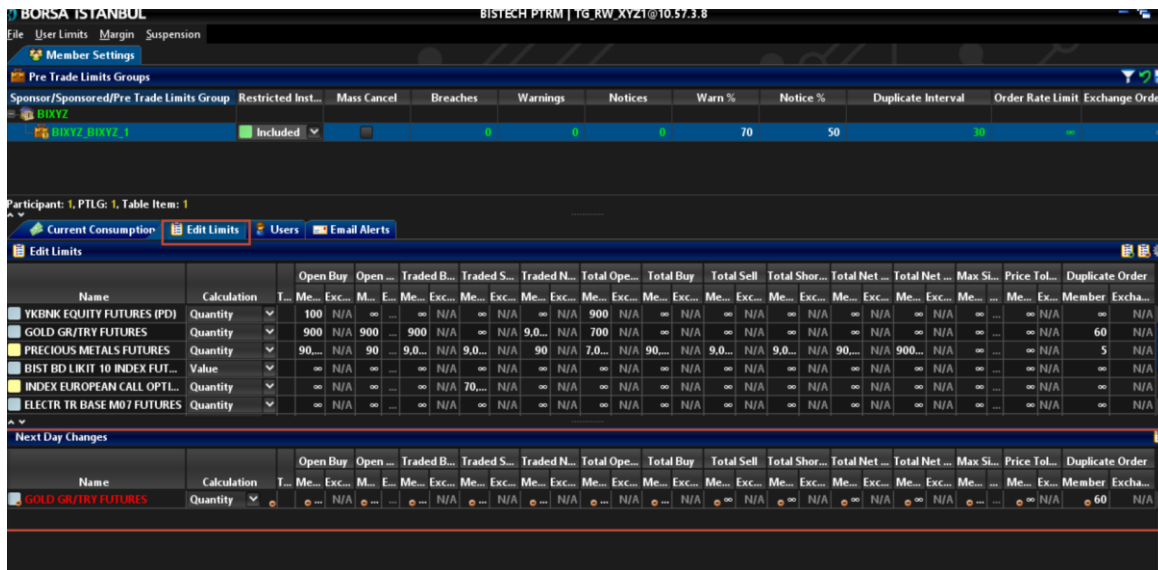**Figure 89 Saving Deleted Instrument Limit Display**
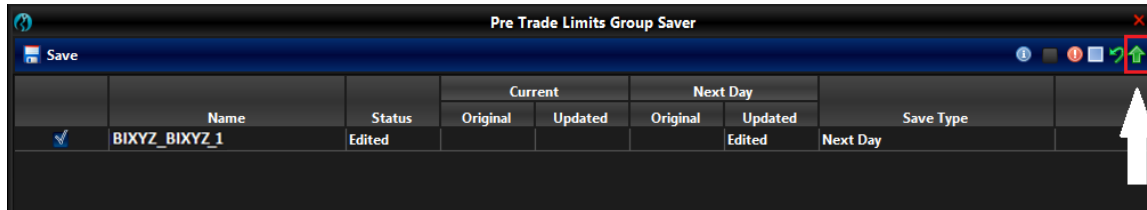
5. The instrument whose limit to be deleted will appear in red on next day changes panel. If a newly added limit which is on the next day changes panel and which will be effective next day is deleted, this instrument limit will disappear immediately from next day's panel.

Figure 90 Deleted Instrument Limit Display

> **Note: This is a next day change. Saving the change sends it to the exchange database and becomes effective when the system is started next day.**

5.5.8 Bulk Editing Instrument Limits via Csv File

Configurations regarding instrument limits (adding, modifying, deleting instrument limits) can be performed in bulk for multiple instrument types and instrument classes by means of a csv file to be uploaded at the risk group level to the PTRM application. In order to bulk edit instrument limits of a risk group, follow these steps:

1. Select a risk group from the Pre-Trade Limits Group Panel in PTRM user interface.
2.   Right-click on the selected risk group and select "*Import Limits*" from the drop-down menu.

Figure 91 Bulk Editing Risk Group Instrument Limits Display
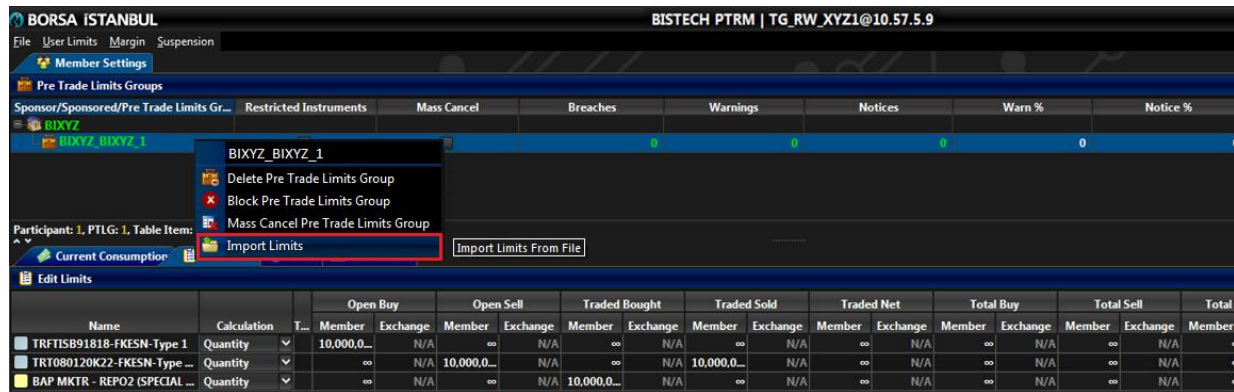
3. Select the csv file which contains instrument limits from the window which pops up following the selection of "*Import Limits*" function. Risk control types should be defined as 15 control types, including Open Buy, Open Sell, Traded Bought, Traded Sold, Traded Net, Total Open Order, Total Buy, Total Sell, Total Short Sell, Total Net Buy, Total Net Sell, Maximum Buy Size, Maximum Sell Size, Price Limit (Price tolerance limit) and duplicate order limit. As for the risk calculation method, only **Quantity** method may be selected for Debt Securities Market and Precious Metals and Diamond Market. For Equity Market and Derivatives Market **Quantity, Volume** and **Value** Methods may be selected.

Figure 92 Uploading CSV File Display
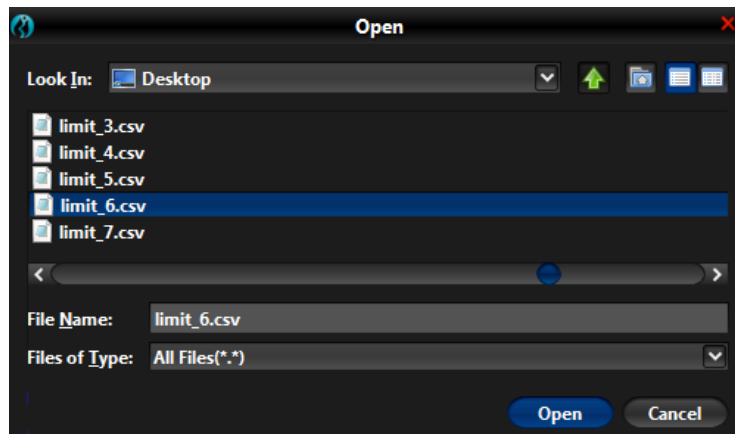
Csv file formats are shown at the table below.

Debt Securities Market:

SAMPLE FILE CONTENT

Name;Calculation;Open Buy;Open Sell;Traded Bought;Traded Sold;Traded Net;Total Open Order;Total Buy;Total Sell;Total Short Sell;Total Net Buy;Total Net Sell;Buy Max Size;Sell Max Size;Price Tolerance;Duplicate Order
BAP KESS TL DİBS (TRY GOV DS);Quantity;2000000;3000000;0;0;0;0;0;0;0;25000000;25000000;0;0;0;0
REPO TERS REPO PAZARI Normal;Quantity;5000000000;0;0;0;0;0;0;0;5000000000;5000000000;0;0;0;0

Equity Market:

Sample File Content

Name;Calculation;Open Buy;Open Sell;Traded Bought;Traded Sold;Traded Net;Total Open Order;Total Buy;Total Sell;Total Short Sell;Total Net Buy;Total Net Sell;Buy Max Size;Sell Max Size;Price Tolerance;Duplicate Order
MAIN SPOT EQUITY - TOASO;Quantity;2000000;3000000;0;0;0;0;0;0;0;25000000;25000000;0;0;0;0
MAIN SPOT EQUITY -
TUPRS;Value;5000000000;250;500;1000;2000;4000;8000;16000;32000;50000000;50000000;250000;250000;8;89

Derivatives Market:

Sample File Content

Name;Calculation;Open Buy;Open Sell;Traded Bought;Traded Sold;Traded Net;Total Open Order;Total Buy;Total Sell;Total Short Sell;Total Net Buy;Total Net Sell;Buy Max Size;Sell Max Size;Price Tolerance;Duplicate Order
AKSEN EQUITY FUTURES (PD);Value;0;0;0;0;5000;0;0;0;0;500;500;50;500;1;1
TSKB EQUITY FUTURES (PD);Quantity;0;0;0;0;100;0;0;0;0;100;1000;500;50;1;10

When the csv file is uploaded into the PTRM application, an information message is given by the application. This message contains information about whether the file reading is completed smoothly or the details about the error if there is an error in the file. If the file reading is handled smoothly, the configurations in the csv file are reflected in the PTRM interface.

**Figure 93 Information Window Display**
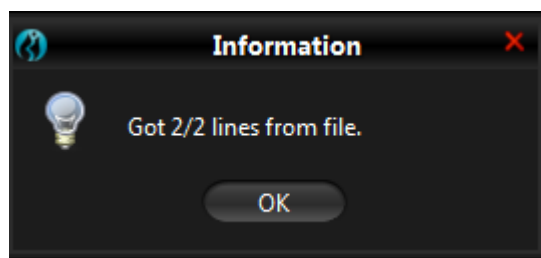
4. In order to save the changes, click the save button.

Figure 94 Adding Risk Group Instrument Limits Display

5. The Pre-Trade Limits Group Saver window appears confirming the changes for the group or groups you have changed. Click "send selected items" button to confirm the changes you have made and send them to the system database.

Figure 95 Saving Risk Group Instrument Limits Display
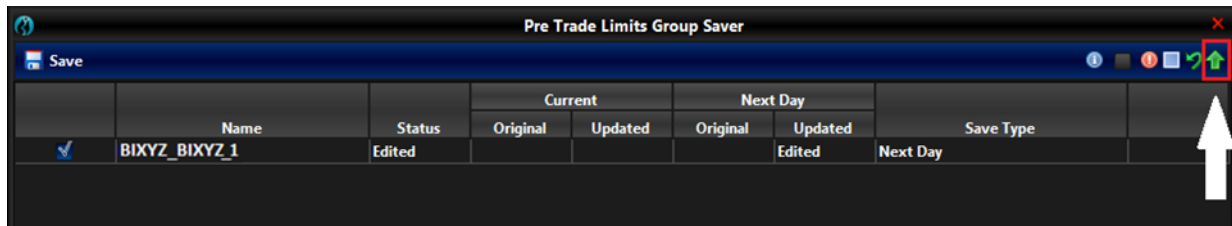
Bulk editing instrument limits with a CSV file function can also be used when creating a new risk group. Follow the steps below in order to add instrument limits in bulk when creating a new risk group:

1. Right-click on the participant's name using a mouse, and then select Add Pre-Trade Limits Group with Limits from the menu.

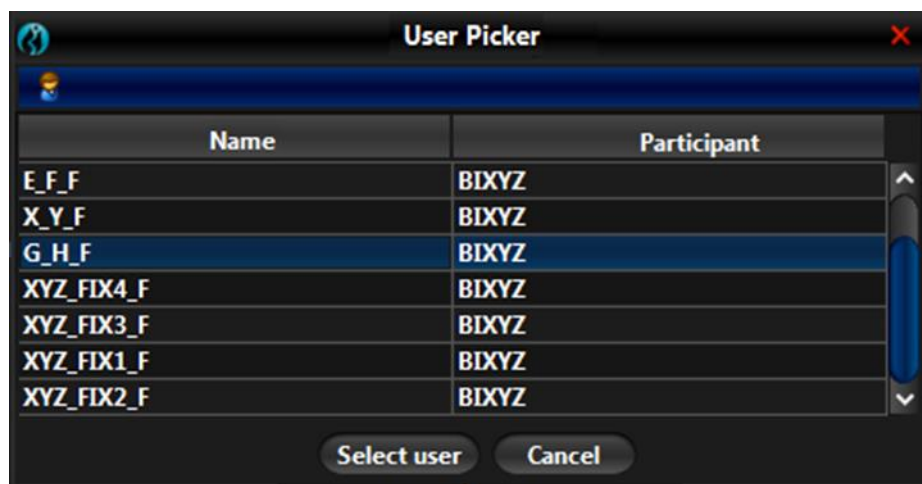**Figure 96 Adding a Risk Group with Instrument Limits Display**
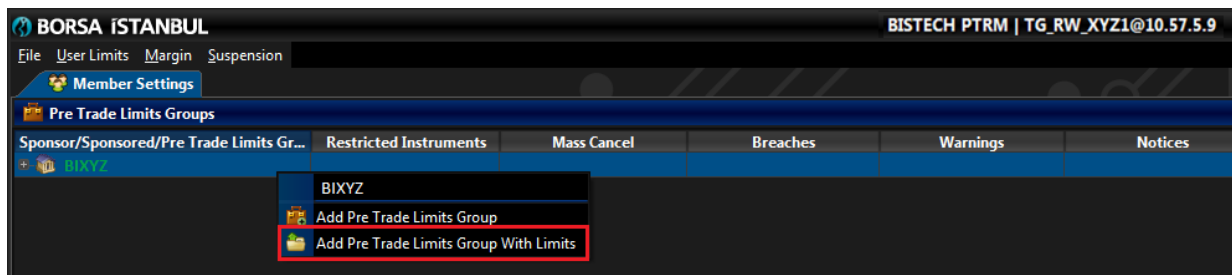
2. Following this, the Input window appears. Enter the name of the new risk group. Click the OK button.

Figure 97 Naming the New Risk Group Display
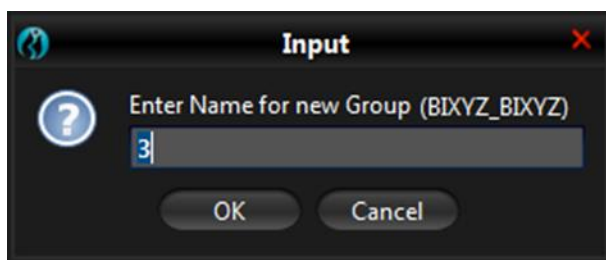
3. Assign a user or multiple users to the new risk group from user picker by clicking select user button.

Figure 98 Adding User to a Risk Group Display

4. Once the users have been selected, the csv file upload window will open automatically. Select the csv file containing the instrument limits.

Figure 99 Uploading CSV File Display
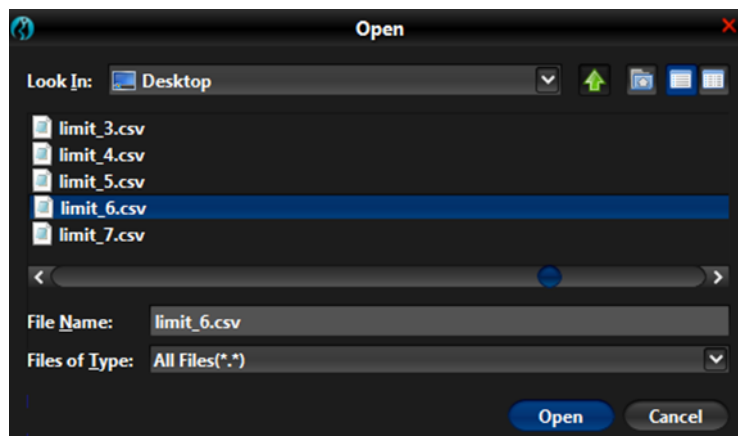
5. After selecting the file, the above steps are followed. The file is read into the application smoothly. The configurations in the file are then reflected in the PTRM interface. The corresponding changes are saved.

5.5.9 Bulk Editing Instrument Limits via Uploadable Csv File

Editing the existing instrument limits (adding, changing, deleting instrument limits, etc.) is possible for multiple instrument types and classes by exporting the existing limits at the risk group level from PTRM GUI. One can make the relevant changes to the downloaded csv file and then upload the new version.

Figure 100 Edit Limits Tab's Export Settings Display
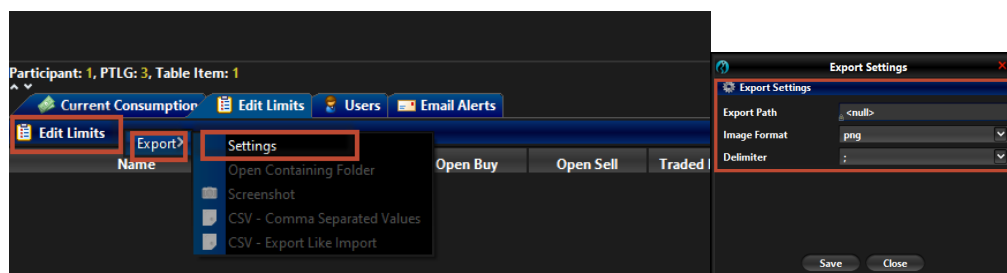
After making changes or additions to this csv file in an uploadable format, the file can be uploaded. The upload steps are shown in the figures above.
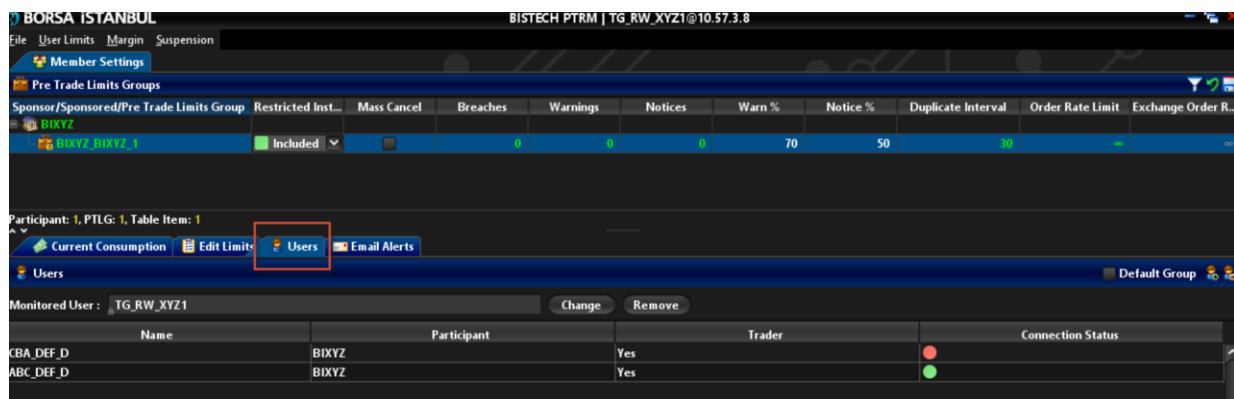
5.6 Managing Users

The Users tab shows which users are assigned to a risk group.

5.6.1 Reviewing Users

To review the users that are assigned to a risk group, complete the following steps:

1. From the main window, click the risk group you want to view the users of and then click the users tab.

Figure 101 Risk Group Users Display

2. Review the users assigned to the group:
   - **Name:** Displays the user's name. The "F" extension at the end indicates that the user is the user who trades on Debt Securities (Fixed Income) Market.
   - **Member:** Displays the member that the user belongs to.
   - **Trader:** Indicates whether the user is the type of user who trades/ sends orders on the Exchange.

5.6.2 Adding User to a Risk Group

Users are grouped by being assigned to a risk group in BISTECH PTRM application. A user can be assigned to only one risk group. To add a user to a risk group, complete the following steps:

1. Click the risk group for which you want to add a new user in BISTECH PTRM user interface, and then click the Users tab.
2. Click the "Add New User" button.

> **Note: A user can be assigned to only one risk group.**

Figure 102 Adding a New User to Risk Group Display
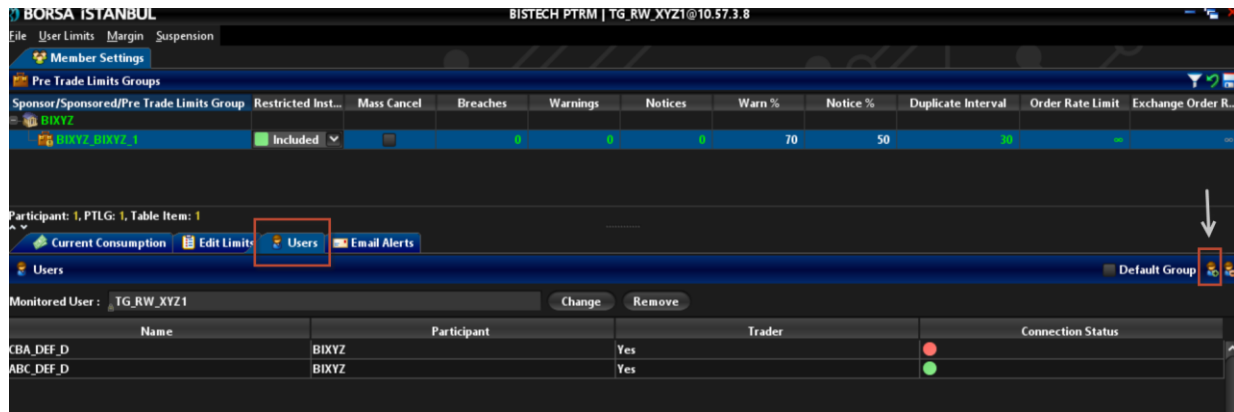

3. The User Picker window shows up.

   User Picker window shows users who are not assigned to risk groups. Review the following fields to determine which user you want to add:

   - **Name:** Displays the user's name.
   - **Member:** Displays the member that the user belongs to.
   - **Trader:** Indicates whether the user is the type of user who trades/ sends orders on the Exchange.

4. Select a user from the table.

5. Click the Select User button.

Figure 103 User Picker Display
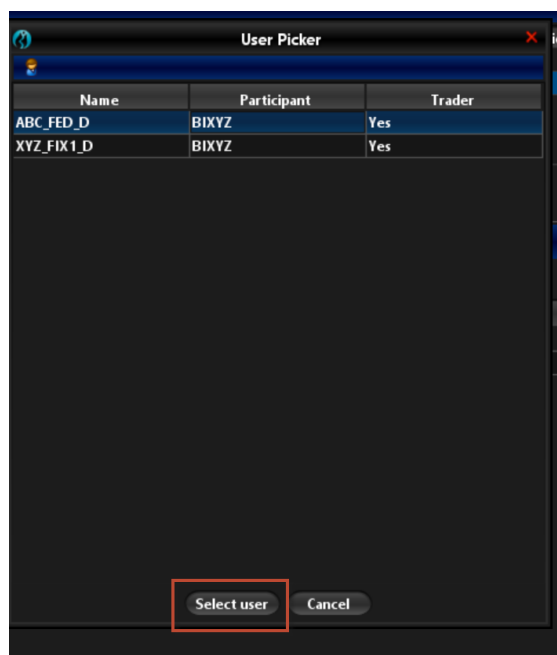
6. The new users will be added to the "next day changes panel" on the Users tab. Click Save button.

7. The Pre-Trade Limits Group Saver window appears confirming the changes you have made to the risk group(s). Click "send selected items" button to confirm the changes you have done and send them to the system database.
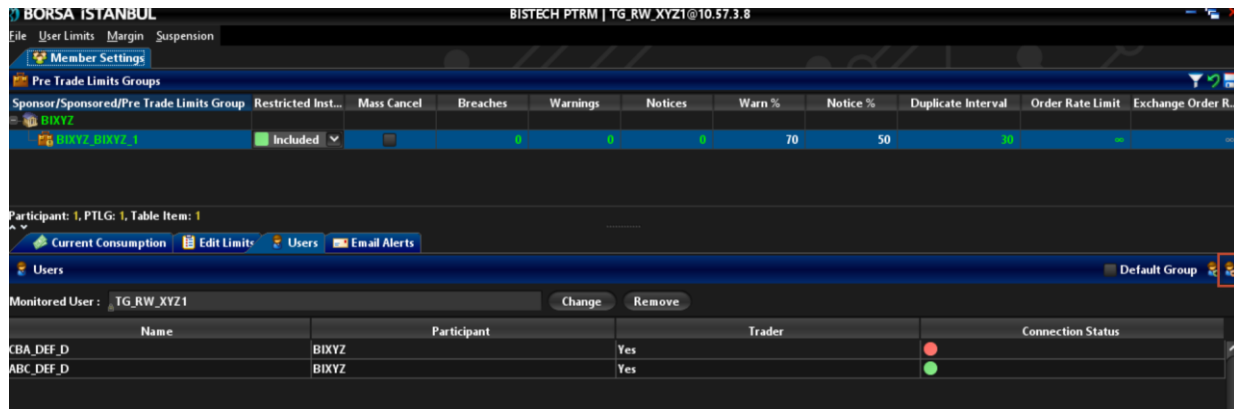
Figure 105 Saving Users Display
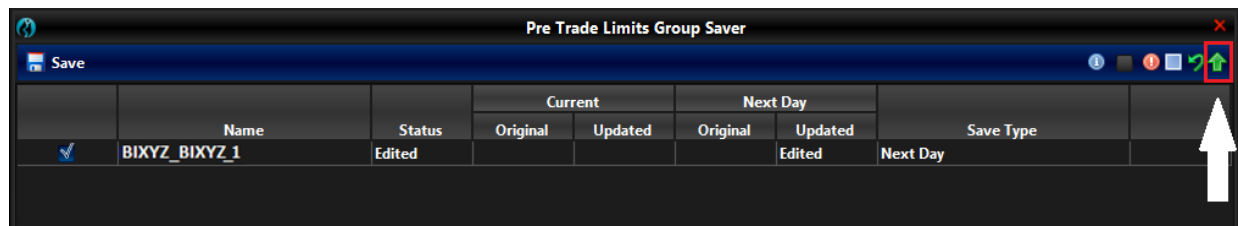
> **Note: This is a next day change. Saving the change sends it to the exchange database and becomes effective when the system is started next day.**

5.6.3 Removing User from a Group

To remove a user from a group, complete the following steps:

1. Click the risk group you want to modify and then click the users tab.
2. Select the user to be removed. Click the remove user button.

**Figure 106 Removing User from a Group Display**

3. The user to be removed will appear in red on next day changes panel. Click the Save button.

Figure 107 Saving Removed User from a Risk Group Display
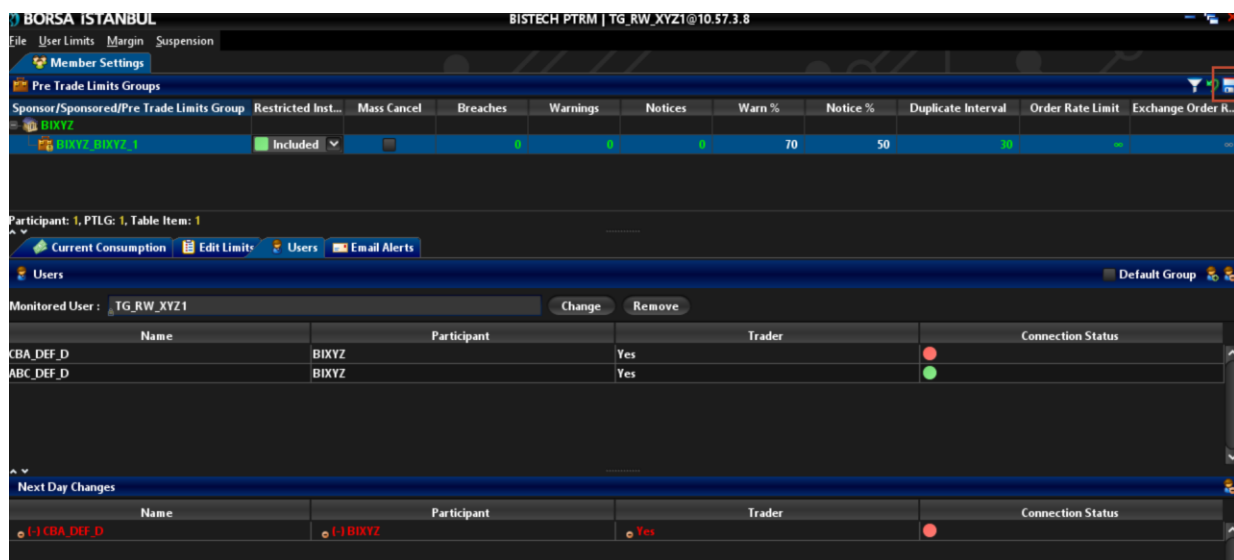
The Pre-Trade Limits Group Saver window appears confirming the changes you have made to the risk group(s). Click "send selected items" button to confirm the changes you have done and send them to the system database.
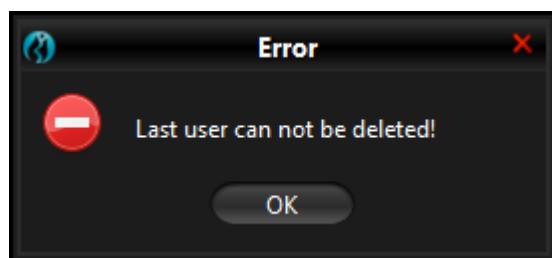
Figure 108 Saving Pre-Trade Limits Group Display
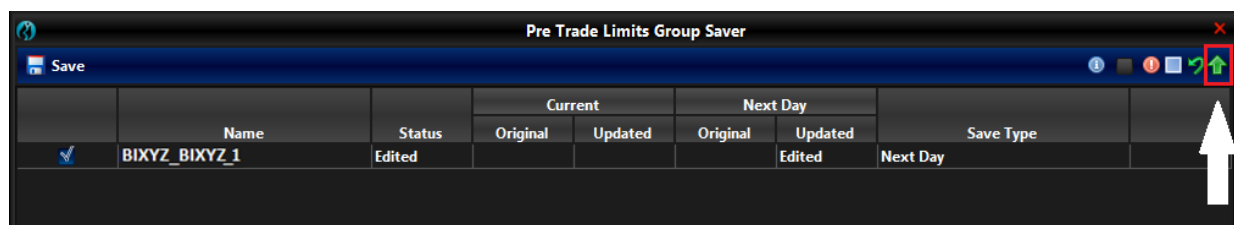
> **Note: This is a next day change. Saving the change sends it to the exchange database and becomes effective when the system is started next day.**

At least one user must be present in each risk group. The last user in the risk group cannot be removed. This is rejected with the error message below.

Figure 109 Warning screen

5.7 Default Group

If a PTLG is defined as "*default group*", the risk of transactions that do not involve a valid user ID in their user field is also tracked under this risk group. Otherwise, these kinds of transactions will not be represented in the overall risk calculated. Default group is added to the risk group by checking the default group box. Alternatively, the tick in the default group box is removed to remove the default group from the risk group. This change is a next day change.

> Note: The default group can be assigned to only one risk group defined under the same member.

Figure 110 Adding Default Group to a Risk Group Display
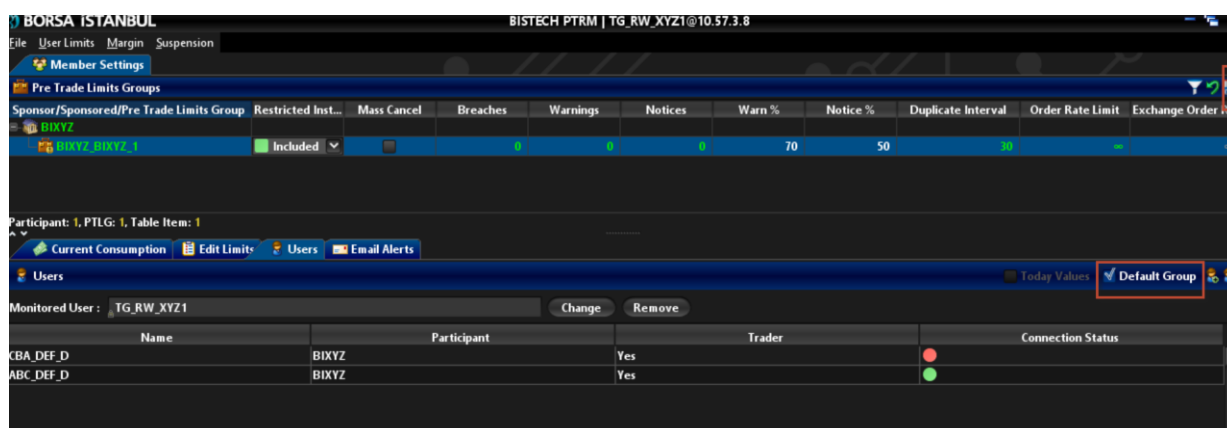
Unlike other next day's changes, the next day changes panel is not opened for this change. Instead, a "today values" box in gray pale color appears. Unchecked today values box indicates that the default group option is not effective today and will be effective tomorrow. If the default group option is enabled for today, the "today values" option is displayed with the checkmark.
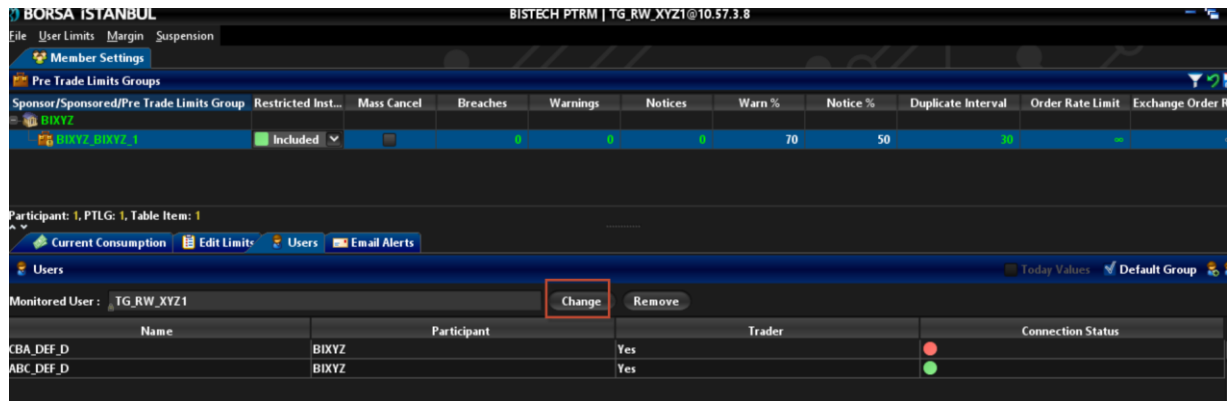
Figure 111 Today Values Display

5.8 Adding or Removing a Monitored User

A risk group can be configured in a way to monitor the connection status of a specified user in real-time. If the monitored user disconnects, the users in the risk group are automatically blocked from entering orders until the monitored user connects again and the block on the risk group is removed manually. Setting a monitored user is optional. Members are expected to assign only PTRM GUI users to monitor for the monitored user function.

Complete the following steps to set or delete a monitored user:

1. Click the risk group for which you want to add or delete a monitored user and then click the Users tab.
2. Click the Change button. Alternatively, click the remove button to remove the selected user.
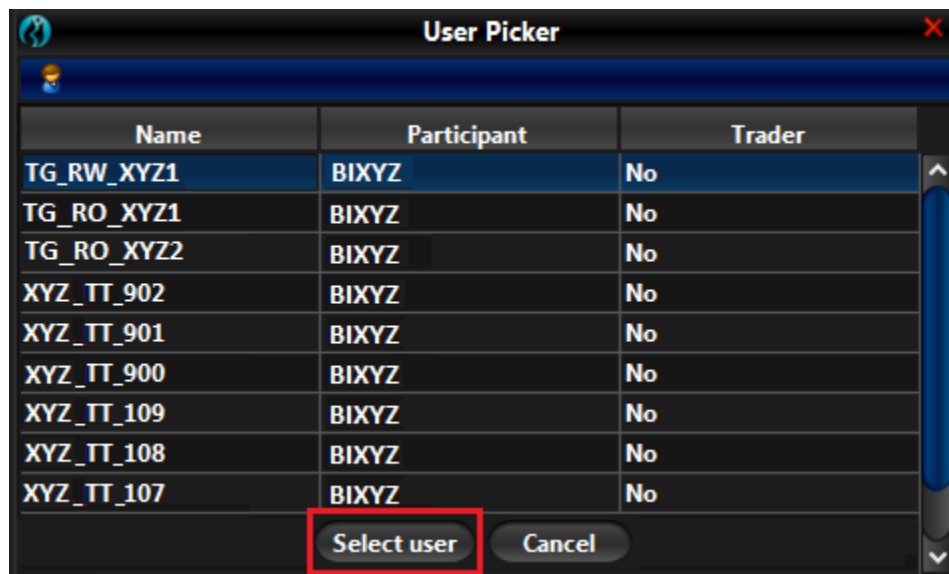
3. The user picker window will be displayed. Click the user you want to choose as the monitored user, and then click the select user button.
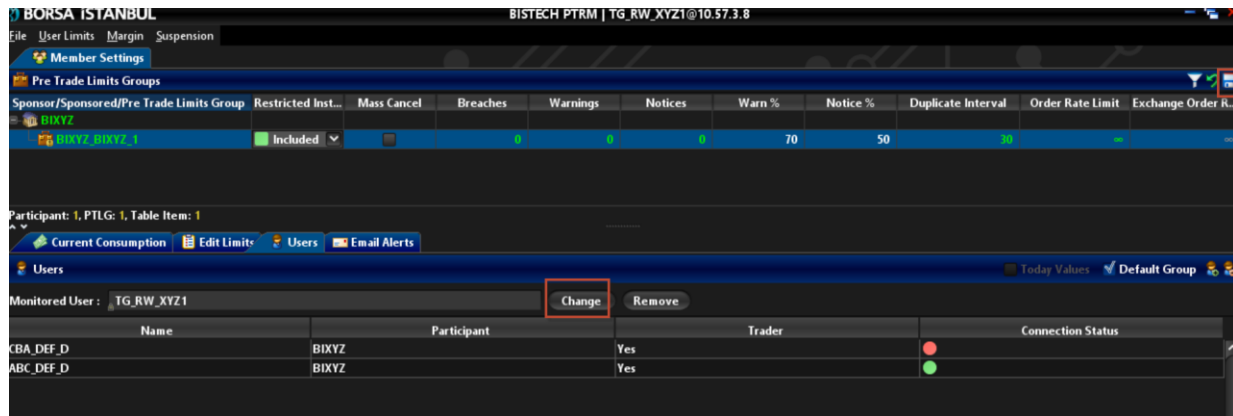
Note: The monitored user is selected among the ones who "do not have trading right" on the Exchange. It is expected that the monitored user is selected among PTRM GUI users who monitor the risk in the market.

Figure 113 User Picker Display

4. Click the Save button in the Pre-Trade Limits Group panel to save your changes.

5. The Pre-Trade Limits Group Saver window appears confirming the changes you have made to the risk group(s). Click "send selected items" button to confirm the changes you have done and send them to the system database.

Figure 115 Saving Pre-Trade Limits Group Display
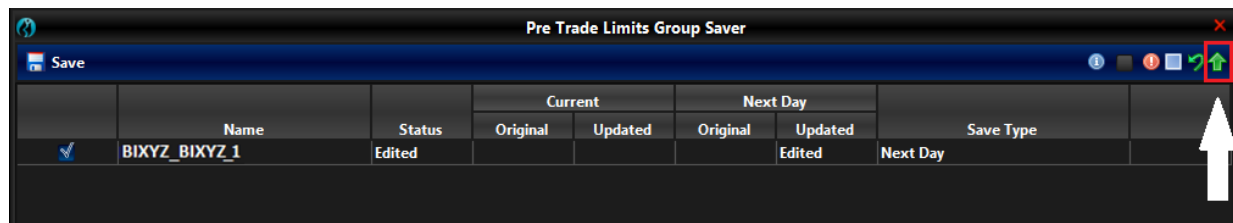
6. Unlike other next day's changes, the next day changes panel is not opened for this change. While the change that will take effect the next day appears in "monitored user" box, the current monitored user is in "today values" box. If there is no valid monitored user for the risk group, then the N/A meaning "not available" appears in today values box.

Figure 116 Setting Monitored User Display
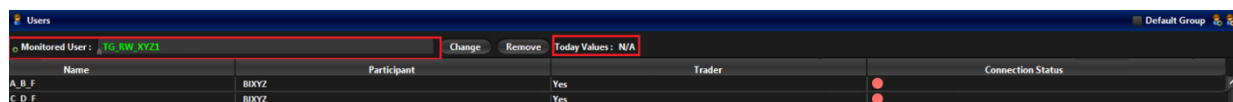
> Note: This is a next day change. Saving the change sends it to the exchange database and becomes effective when the system is started next day.
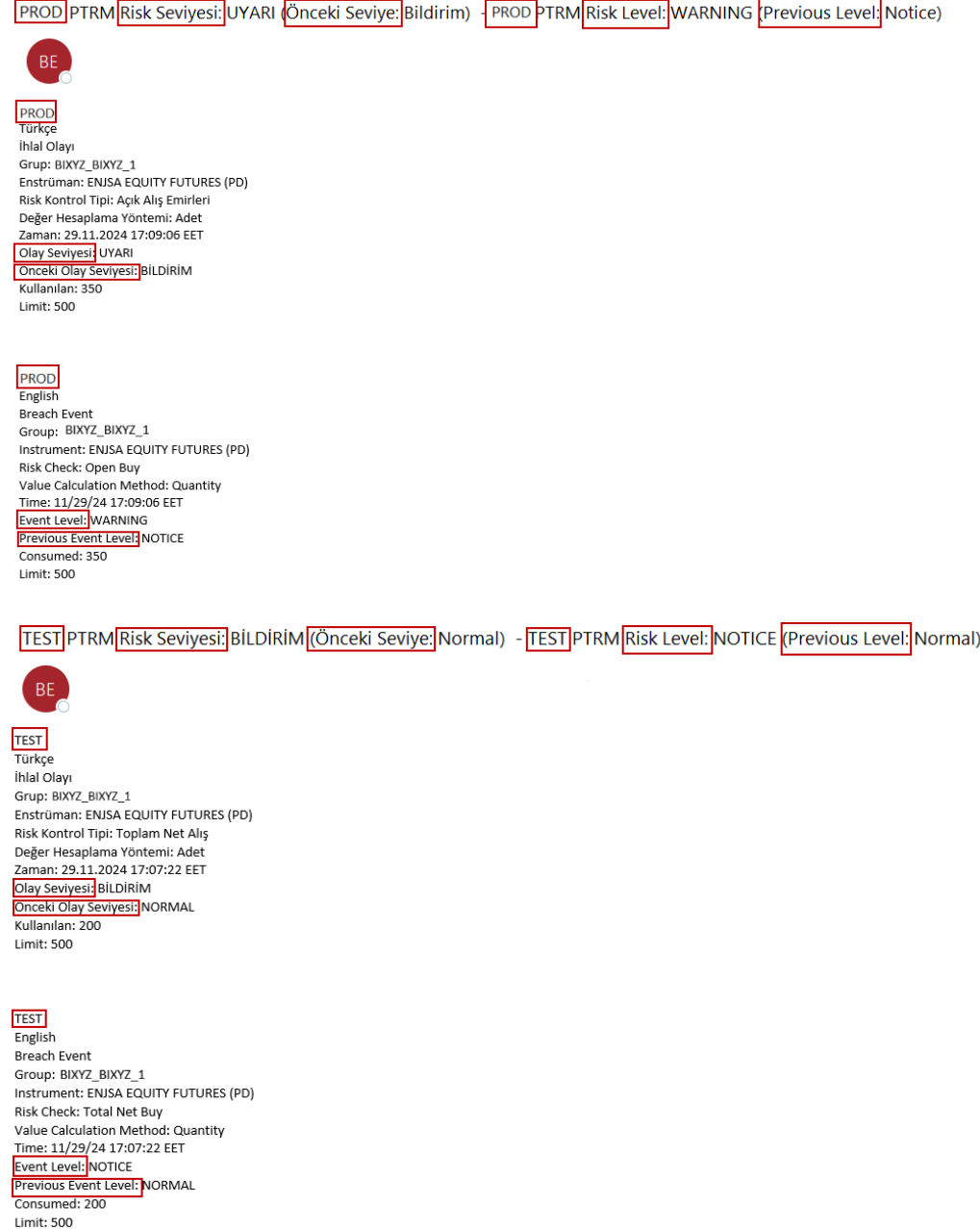
5.9 Managing E-mail Alerts

The BISTECH PTRM server monitors the activities of all risk groups in real time. If the calculated current risk of a group reaches/exceeds any risk level, e-mails are sent to all those who are in the notification list for that group. The risk levels are set as a percentage of the limit and can be set differently for each risk group. For more information on defining warn and notice percentages, see the section "Setting Warn and Notice Percentages" (Section 5.2.2).

The BISTECH PTRM application can be configured to send three types of e-mail alerts. Values associated with breaches are defined by level and are color coded to provide a visual indicator of risk.

- **Notice (yellow):** The lowest level of alert.
- **Warnings (orange):** The next highest level of alert.
- **Breach (red):** Risk limits have been reached or exceeded.

E-mail alerts are generated whenever the defined limits for a risk group are reached at notice, warnings, and breach risk levels. Therefore, email alerts may be repeated multiple times during the day. Information about the current and previous risk levels is stated in both the subject and body of the email. The email's subject and body also indicate whether the alert is sent for the production or test environment. Users receiving e-mails should check the BISTECH PTRM user interface for details.

Figure 117 E-Mail Displays

PROD PTRM Risk Seviyesi: UYARI (Önceki Seviye: Bildirim) - PROD PTRM Risk Level: WARNING (Previous Level: Notice)

BE

PROD
Türkçe
İhlal Olayı
Grup: BIXYZ_BIXYZ_1
Enstrüman: ENJSA EQUITY FUTURES (PD)
Risk Kontrol Tipi: Açık Alış Emirleri
Değer Hesaplama Yöntemi: Adet
Zaman: 29.11.2024 17:09:06 EET
Olay Seviyesi: UYARI
Onceki Olay Seviyesi: BİLDİRİM
Kullanılan: 350
Limit: 500

PROD
English
Breach Event
Group: BIXYZ_BIXYZ_1
Instrument: ENJSA EQUITY FUTURES (PD)
Risk Check: Open Buy
Value Calculation Method: Quantity
Time: 11/29/24 17:09:06 EET
Event Level: WARNING
Previous Event Level: NOTICE
Consumed: 350
Limit: 500

TEST PTRM Risk Seviyesi: BİLDİRİM (Önceki Seviye: Normal) - TEST PTRM Risk Level: NOTICE (Previous Level: Normal)

BE

TEST
Türkçe
İhlal Olayı
Grup: BIXYZ_BIXYZ_1
Enstrüman: ENJSA EQUITY FUTURES (PD)
Risk Kontrol Tipi: Toplam Net Alış
Değer Hesaplama Yöntemi: Adet
Zaman: 29.11.2024 17:07:22 EET
Olay Seviyesi: BİLDİRİM
Onceki Olay Seviyesi: NORMAL
Kullanılan: 200
Limit: 500

TEST
English
Breach Event
Group: BIXYZ_BIXYZ_1
Instrument: ENJSA EQUITY FUTURES (PD)
Risk Check: Total Net Buy
Value Calculation Method: Quantity
Time: 11/29/24 17:07:22 EET
Event Level: NOTICE
Previous Event Level: NORMAL
Consumed: 200
Limit: 500

> **Note: Being under the defined risk levels is considered normal.**
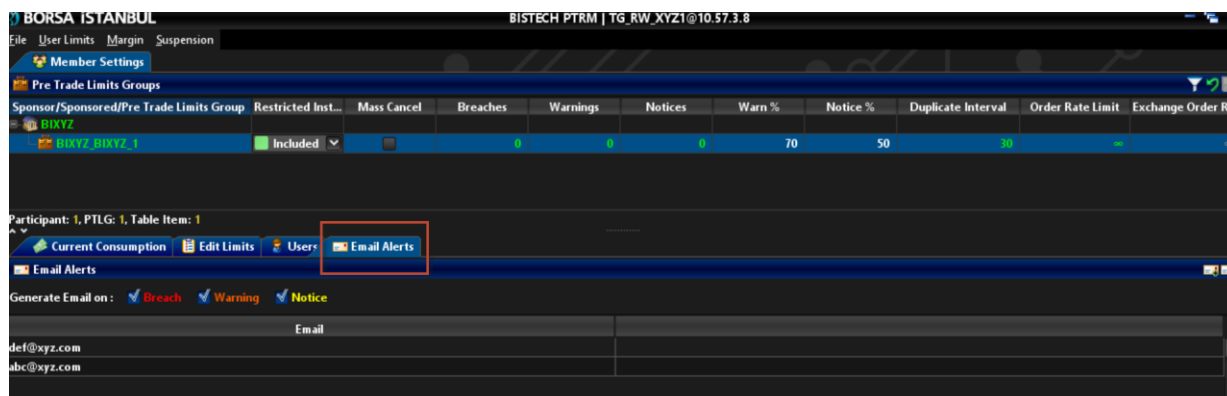
> **Note: The Order Rate limit only generates breach emails. It does not create notice or warning email alerts.**

5.9.1 Setting E-mail Alerts

To set e-mail alerts, complete the following steps:

1. Select the risk group you want to define a new e-mail alert in the Pre-Trade Limits Group panel, and then click the e-mail alerts tab.

2. Select or deselect the following check boxes to turn them on or off.
- **Breach:** Send emails when the risk group breaches a set limit.
- **Warning:** Send emails when the risk group reaches the warning level of a limit.
- **Notice:** Send emails when the risk group reaches the notice level of a limit.
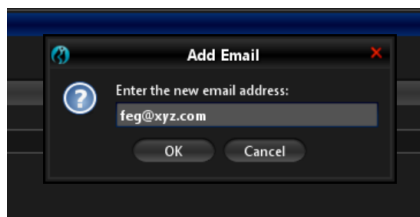
Figure 119 Setting Email Alert Levels Display
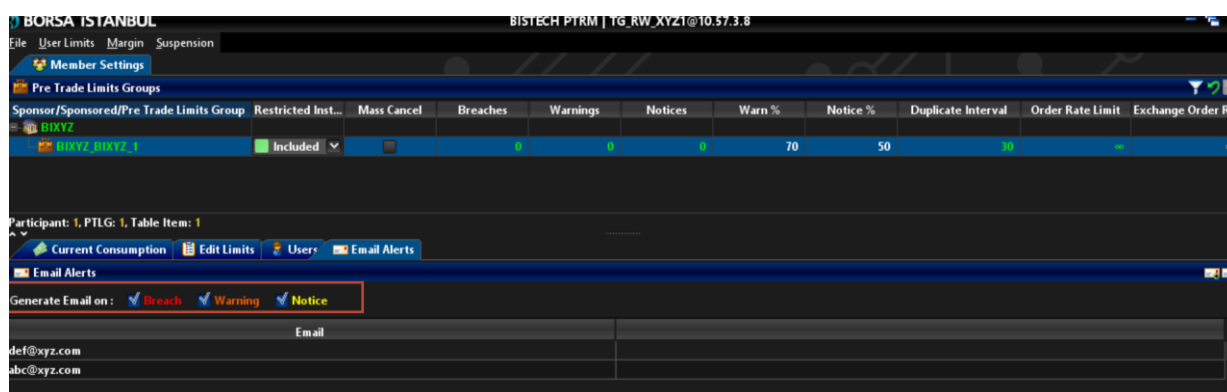
3. Click the save button on the Pre-Trade Limits Group panel to save the changes.
4. The Pre-Trade Limits Group Saver window appears confirming the changes you have made to the risk group(s). Click "send selected items" button to confirm the changes you have done and send them to the system database.

Figure 120 Saving Pre-Trade Limits Group Display
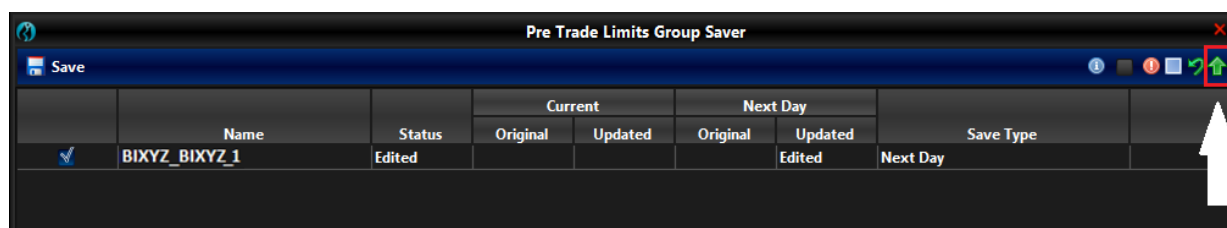
5. Unlike other next day's changes, the next day changes panel is not opened for this change. While the change that will take effect the next day appears in "generate e-mail on" boxes, the current e-mail settings are shown in "today values" boxes.

Figure 121 E-mail Settings Monitoring Screen
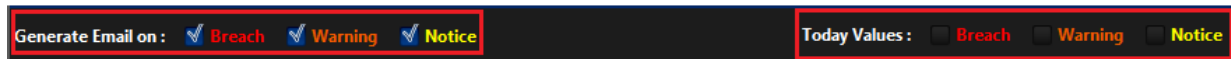
After you set and save email alerts and they become effective next day, all members of the e-mail alert group receive notifications when the selected events occur.

> **Note: This is a next day change. Saving the change sends it to the exchange database and becomes effective when the system is started next day.**

5.9.2 Adding New E-mail Alert Recipients

You can add new email addresses to be alerted when a risk group generates notice, warn, and breach events. After you add the new email alert recipient and click the Save button, the email address is immediately added to the notification list for the risk group.

To add a new e-mail address, complete the following steps:

1. Select the risk group you want to define new email alerts in the Pre-Trade Limits Group panel, and then click email alerts tab.
2. Click add new email button.

Figure 122 Adding E-mail Alert Recipient Display
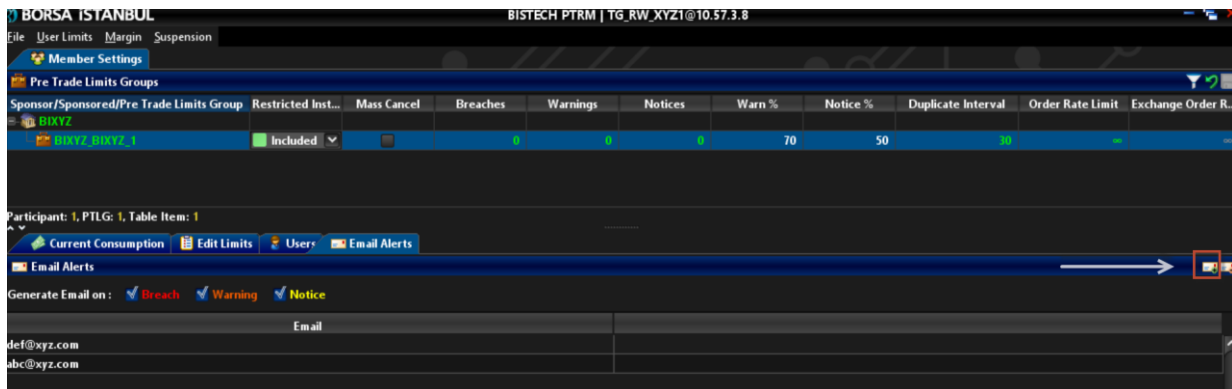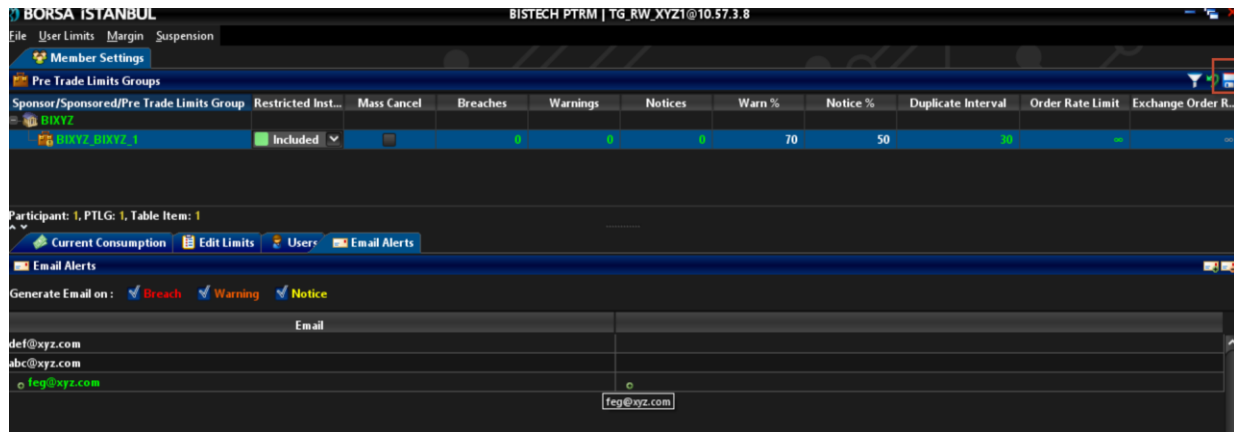
3. The add e-mail window will appear. Enter the new e-mail address. Click OK button.

Figure 123 Add E-mail Display

4. Click the Save button on the Pre-Trade Limits Group panel to save the changes.

5. The Pre-Trade Limits Group Saver window appears confirming the changes you have made to the risk group(s). Click "send selected items" button to confirm the changes you have done and send them to the system database.

Figure 125 Saving Pre-Trade Limits Group Display
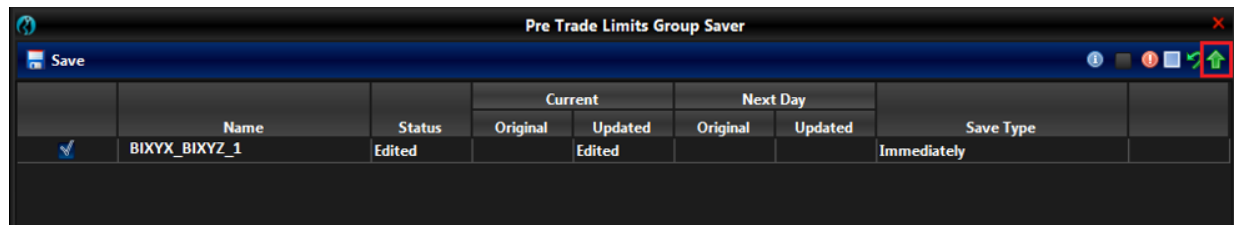
> Note: This is an intraday change. This change becomes effective immediately.

After you have edited the e-mail alert recipients and clicked the save button, they will immediately start receiving e-mail alerts.

5.9.3 Removing E-mail Alert Recipients

After you remove the e-mail recipient and click the Save button, the removed address appears in the Next Day Changes panel. This change will apply on the following trading day.

To remove an e-mail address from the alert list, complete the following steps:

1. Select the risk group on the Pre-Trade Limits Group panel and then click the e-mail alerts tab.
2. Click the e-mail recipient to be removed.
3. Click Remove E-mail button.

4. A confirmation dialogue appears. Click YES button.

Figure 127 Confirmation of E-mail Alert Recipient Deletion Display
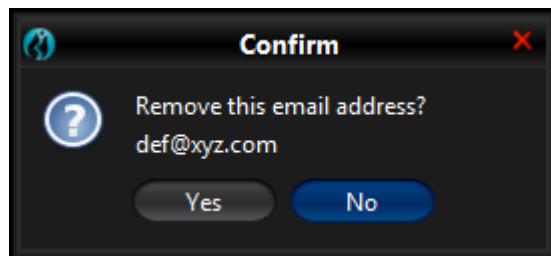
5. Click the Save button.

Figure 128 Saving E-mail Alert Recipient Deletion Display
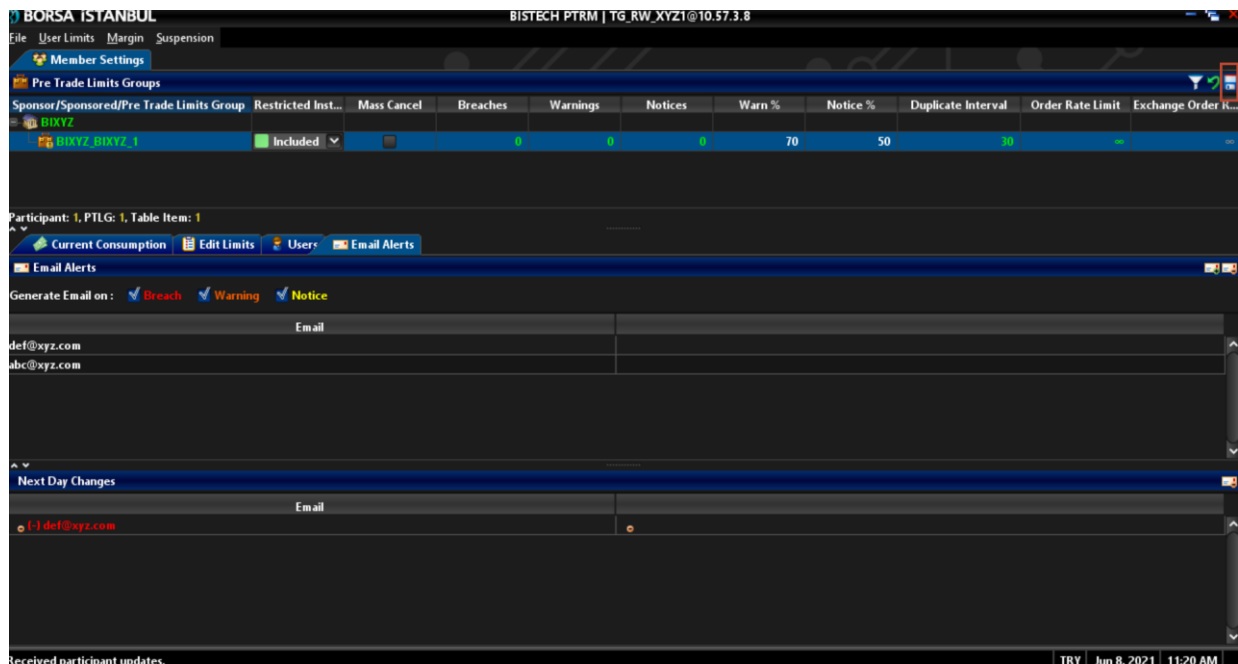
6. The Pre-Trade Limits Group Saver window appears confirming the changes you have made to the risk group(s). Click "send selected items" button to confirm the changes you have done and send them to the system database.
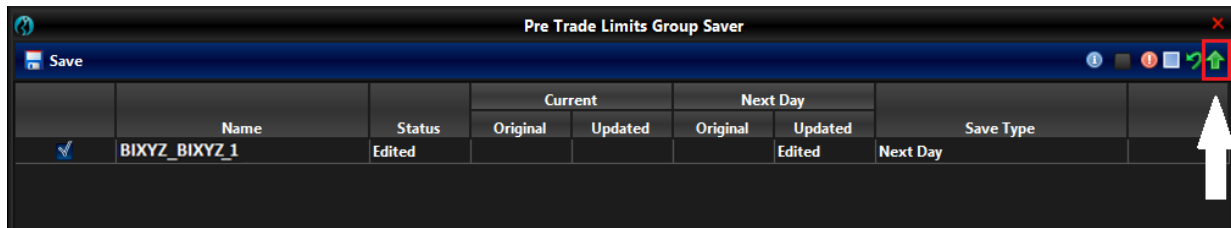
> **Note: This is a next day change. Saving the change sends it to the exchange database and becomes effective when the system is started next day.**

5.10 Approval Mechanism for Risk Group Definitions (Four Eyes Control)

PTLG definitions created to monitor risks related to user limits may be submitted to the approval of a second PTRM user upon the request of the member. This feature which can be applied on a member basis, will be reflected to the PTRM user screens of the member under "User Limits" tab as "Four Eyes" as shown below. For members who do not request this feature, this section will not appear in the menu.

Figure 130 Approval Mechanism for Risk Group Definitions Display
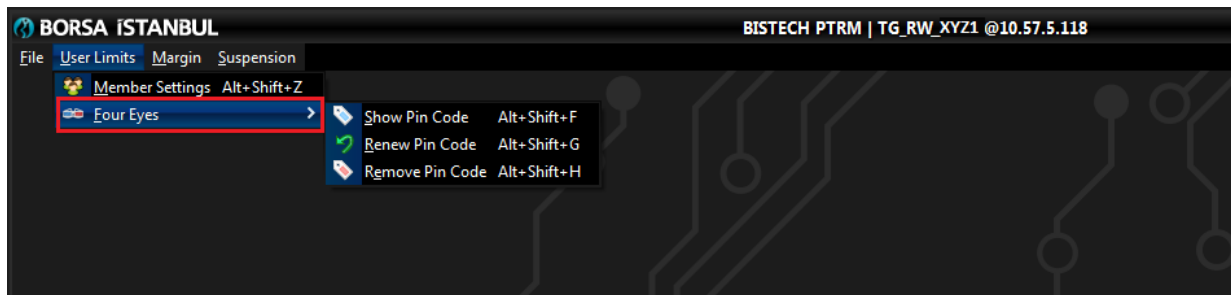
With the help of the options in this menu, Read Only or Read-Write users may view, renew or delete an existing pin code if necessary. Pin code is generated in 6 digits by the PTRM system and renewal may be triggered by the user. When Show Pin Code option is selected, the pop-up window displays the current pin code.

Figure 131 Show Pin Code Information Window Display
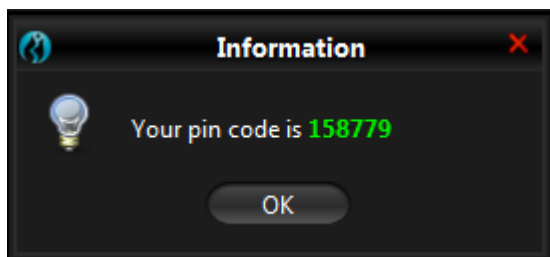
Each Pin code can be used for only one saving action. Another saving can only be done with a new Pin code that must be generated by the approver. When Renew Pin Code option is selected, the newly generated pin code by the system is displayed in the pop-up window. This new pin code will now be valid for the confirmation of the changes to be saved.

Figure 132 Renew Pin Code Information Window Display
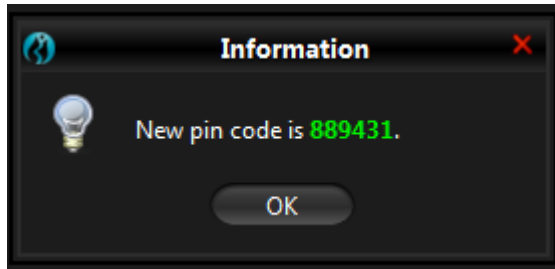
PTRM user may delete an existing Pin code in necessary circumstances. When Remove Pin Code option is selected, the following information window is displayed.

Figure 133 Remove Pin Code Information Window Display
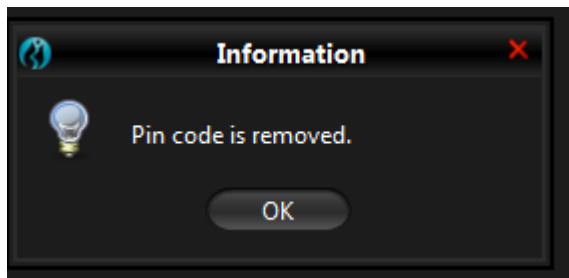
The generated Pin codes are used by PTRM read-write user in making same day and next day changes (creation of a new risk group, removing a user from an existing group, adding a new limit, changing the monitored user, etc.) in the member settings window. Otherwise, the changes will not be saved and sent to the system.

Even in the cases where 4-eyes control is used, following actions do not require authorization, and actions are taken without the system requiring pin codes:

- Mass canceling orders on member level
- Mass canceling orders of a risk group
- Blocking/unblocking a risk group
- Unblocking order rate breach
- Cancellation of all open orders of a specific user in a risk group

Follow the steps below in order to save the changes regarding the risk group with the approval mechanism.

1. Make the preferred changes in the member settings panel.
2. Click the Save button.

Figure 134 Saving Changes Regarding Risk Groups Display

3. The Pre-Trade Limits Group Saver window appears confirming the changes you have made to the risk group(s). Click "send selected items" button to confirm the changes you have done and send them to the system database.

Figure 135 Saving Pre-Trade Limits Group Display
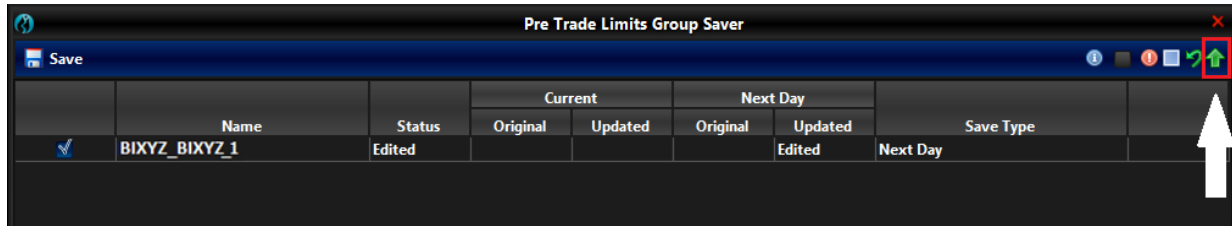
4. After clicking "send selected items", the Pin Code Input screen is displayed. The pin code specified by the other PTRM user is written here. If the pin code is correct, the changes are sent to the system.

Figure 136 Pin Code Input Screen Display
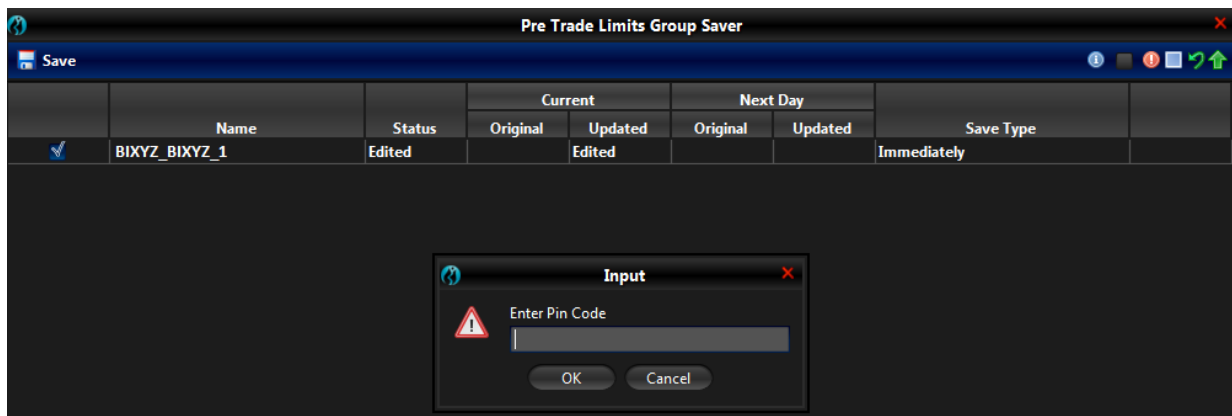
5. If the pin code is not entered or is incorrect, the changes are not saved and sent to the system.

Figure 137 Incorrect Pin Code Entry Error Message
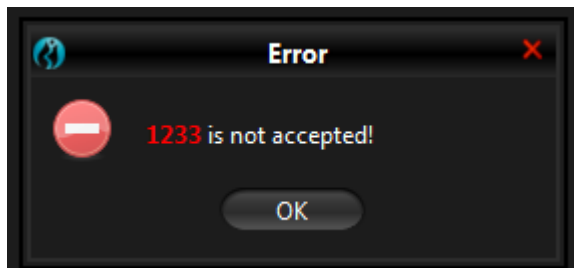
6. MARGIN CHECKS

6.1. General Overview

Participants will be able to follow the current margin information of their accounts through PTRM application. The collateral checks to be made within the scope of PTRM application are made on account basis within the framework of the rules determined by Takasbank and it is checked whether the collaterals of the accounts are sufficient after the realized transactions. The collateral sufficiency check is made by comparing "Margin Consumed" and "Available Collateral" values. Accounts having "margin consumed" value which exceeds its "available collateral" value or having a negative "available collateral" value go into risky state. The following rules may apply for risky accounts in the framework of the rules to be set by the Exchange;

- Open orders may be canceled or they may remain in the order book.

- They cannot send any new orders or they can send only position decreasing orders or new order entries are not restricted at all.

Available collateral value is calculated by RTM, a component of post-trade risk management system, according to post-trade risk management margin calculation method. Margin consumed value is calculated according to the margin calculation method specially developed for the PTRM system. PTRM works in an integrated way with RTM throughout the day.

RTM calculates the margin required by taking into account the last position information of the account and the updated parameters according to new prices during the day. Transaction information taken into account while calculating this value and the current value of the available collateral are sent to PTRM by RTM. Following the update from the RTM, PTRM uses the updated available collateral value in its margin requirement control and does not make any calculations for the transactions included in RTM's calculation when calculating margin consumed.

PTRM margin calculation method is a portfolio-based risk calculation method developed on the basis of the collateral method used by Takasbank in its risk calculations. This method, which has been developed in a way that does not cause any delay in order transmission, has a simpler algorithm than post-trade collateral method.

6.2. Margin Menu

The "Margin" menu includes "Margin" and "Margin Coefficients" tabs.

6.2.1. Margin Tab

The margin tab includes the information of "Available Collateral", "Margin Consumed", "Remaining Collateral" and "Calculation Type" at account level.

Margin Consumed value represents the collateral value calculated by the PTRM system for the orders and trades according to the margin calculation algorithm developed specially for PTRM system.

Available Collateral value represents the existing collateral value for the relevant account calculated by the clearing system using post-trade margin calculation method.

The Remaining Collateral value represents the difference between the available collateral and the margin consumed.

The Calculation Method specifies whether the account in question is omnibus or not. The omnibus account can have both long and short position for the same instrument whereas in the non-omnibus account there can be either long or short position for the same instrument.

> **Note: All of the accounts in Debt Securities Market, Equity Market and Precious Metals and Diamond Market are of non-Omnibus type. Both Omnibus and Non-Omnibus account types are used in Derivatives Market.**

> **Note: On Precious Metals Genium Inet Workstation (GIW) (https://kmtp.borsaistanbul.com), the PTRM Margin screen under the "Information" menu shows the "available collateral", "margin consumed" and "remaining collateral" information of the members of Precious Metals Market within the scope of PTRM. In addition, on the Instruments screen under the "Information" menu, unit margin information is displayed for each series.**

Figure 138 Margin Tab Display

In case where the margin consumption exceeds the available collateral or the available collateral is negative for an account, the affected account goes into "risky" status. These accounts are shown in red color on Margin tab. Rules may be specified by the Exchange for the risky accounts not to send any orders or to send only position decreasing orders. Moreover, open orders of risky accounts can be canceled under the framework of the rules set by the Exchange.

Figure 139 Risky Account Display

Click anywhere in the section where the margin heading is located for filtering options.

Figure 140 Margin Tab Filtering Options Display

If it is desired to perform market-based filtering in displaying accounts, you can filter by writing in the "Search Account" row;

- "EQ" in capital letters between two asterisks (*EQ*) for Equity Market accounts,
- "DE" in capital letters between two asterisks (*DE*) for Derivatives Market accounts,
- "FI" in capital letters between two asterisks (*FI*) for Debt Securities Market,
- "PM" in capital letters between two asterisks (*PM*) for Precious Metals and Diamond Market accounts.

Figure 141 Filtering Accounts Display

A screenshot of the margin information can be taken. It is possible to save the margin information as a screenshot or csv file, open the folder where the image or the file is saved, change the folder where the image or the file will be saved and change the format of the screen image or the delimiter which is used in csv file with the export function which pops up by right clicking anywhere in the section where the margin heading is located. The folder in which the image/file will be saved, the format of the image and the delimiter which will be used in csv file may be changed through the "Settings". The "Open Containing Folder", "Screenshot" and "CSV" options will not be activated without selecting the folder that the image/file will be saved under the "Settings" option.

Figure 142 Export Margin Data Display

Figure 143 Export Margin Data Settings Display

Figure 144 Margin Tab Table Settings Display

The table will continue to be updated dynamically for the minimum and maximum values that can be specified in the margin tab filters shown in Figure140. In case where the "Filter after Update" under Table Settings option is deselected, the table will not be updated dynamically for the defined minimum and maximum values.

6.2.2. Margin Coefficients Tab

The margin coefficients tab includes;

- Unit margin coefficient
- Open order coefficient
- Consumption coefficient

parameters used in margin calculation.

Unit margin coefficient is a scaling parameter that allows the unit margin information received from the clearing system at the beginning of the day to be weighted while being used by the PTRM algorithm. This coefficient, which will be determined by the Exchange according to the risk tolerance of the PTRM, can be differentiated at the account level. Open order coefficient is used when calculating the contribution of the open orders to the margin requirement calculation.

Consumption coefficient is used to scale the required margin value and by this way it is used to determine the risk tolerance to be used in pre-trade margin checks. This coefficient is determined at the account level and is taken into account when calculating available collateral.

Figure 145 Margin Coefficients Tab Display

In the margin coefficients tab, you can access filtering options by clicking on the heading section.

Figure 146 Margin Coefficients Tab Filtering Options Display
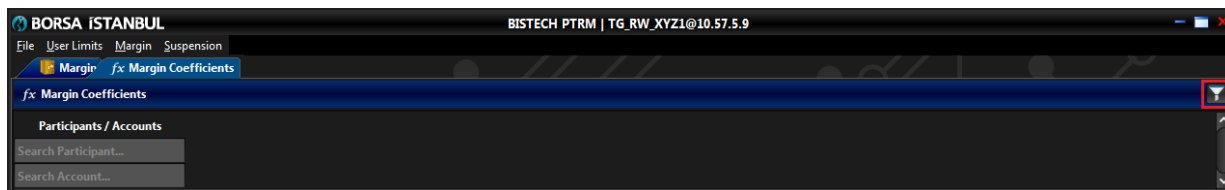
Trading accounts linked to a collateral account can be monitored by right-clicking the account on the margin and margin coefficients tabs.

If it is desired to perform market-based filtering in displaying margin coefficients, you can filter by writing in the "Search Account" row;

- "EQ" in capital letters between two asterisks (*EQ*) for Equity Market accounts,
- "DE" in capital letters between two asterisks (*DE*) for Derivatives Market accounts,
- "FI" in capital letters between two asterisks (*FI*) for Debt Securities Market,
- "PM" in capital letters between two asterisks (*PM*) for Precious Metals and Diamond Market accounts.

Figure 147 Filtering Margin Coefficients Display

Figure 148 Monitoring Trading Accounts of a Collateral Account Display
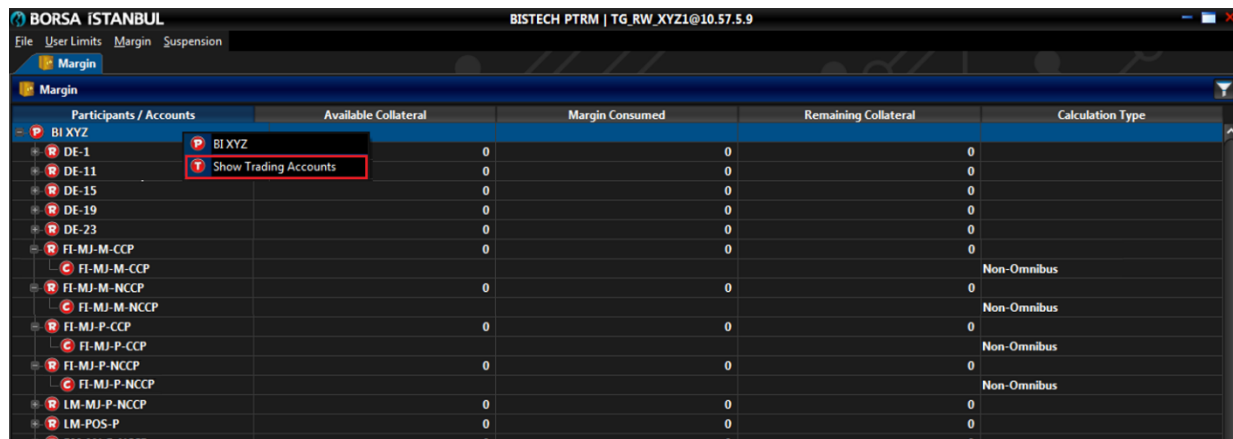
Figure 149 Account Hierarchy Display
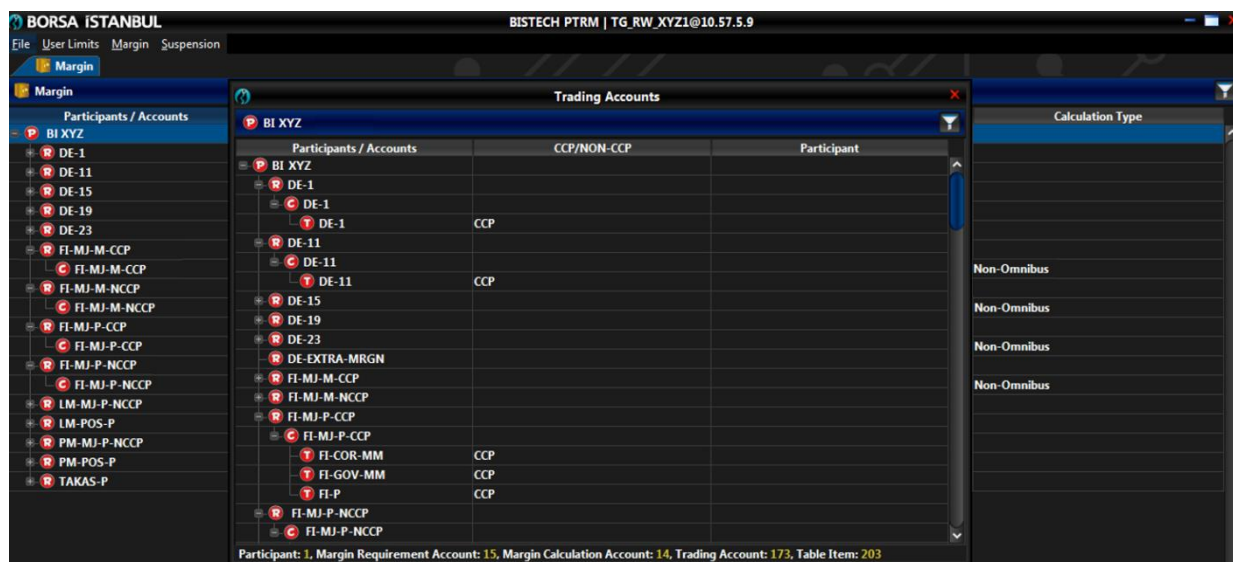
Hierarchy of all of the accounts of the participant can be monitored by right clicking on the participant ID.

The screenshot and csv file features available on the margin tab can also be used on margin coefficients tab.

7. ACCOUNT AND PRODUCT SUSPENSION

"Suspension" menu includes the "Account" and "Product" menus.

7.1. SUSPENDED ACCOUNTS

PTRM may prevent the entry of all orders or only position increasing orders in accordance with the participant and account suspension instructions sent from the clearing system. In addition, the Exchange and Takasbank may suspend participants or accounts if necessary. All orders of a suspended account may be rejected or only position decreasing orders may be accepted. It is also possible to cancel all open orders of a suspended account.

Accounts that are automatically or manually suspended as a result of PTRM pre-trade risk checks or Takasbank post-trade risk controls or if the participant is suspended, the related information can be

tracked through the "Suspension" tab which pops up from the "Account" menu under the "Suspension" menu on the PTRM GUI.

This information on which actions were taken for the suspended account can be tracked on suspended accounts tab.
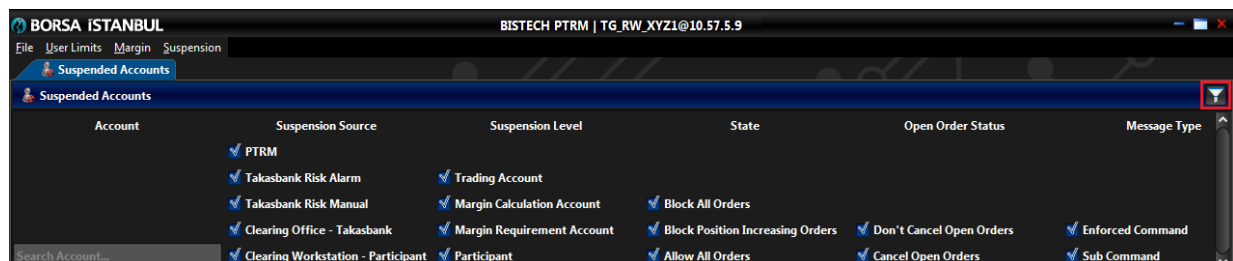
Figure 152 Suspended Accounts Tab Display

 You can access filtering options by clicking on the top of the suspended accounts tab.
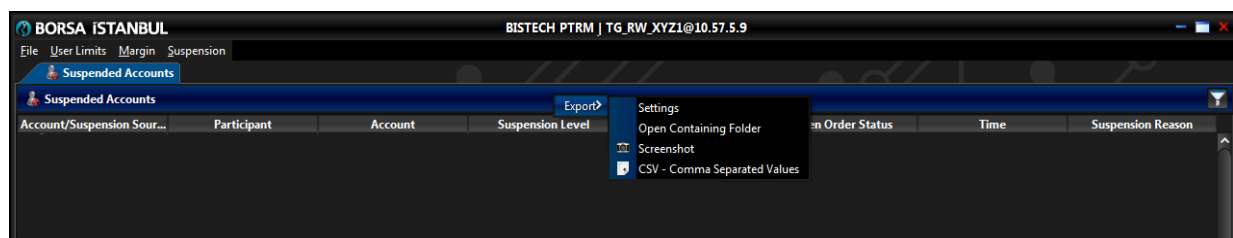
Figure 153 Suspended Accounts Tab Filtering Options Display

A screenshot of the suspended account information can be taken. As shown in Figure 152, it is possible to export the suspended accounts information as a screen image or csv file, open the folder where the image or the file is saved, change the folder in which the image or the file will be saved and change the format of the screen image or the delimiter (separator) which is used in csv file with the export function which pops up by right-clicking anywhere in the section where the suspended accounts heading is located. The folder in which the image/file will be saved, the format of the image and the delimiter which will be used in csv file may be changed through the "Settings". The "Open Containing Folder", "Screenshot" and "CSV" options will not be activated without selecting the folder that the image/file will be saved under the "Settings" option.

Figure 154 Export Suspension Data Display

Figure 155 Export Suspension Data Settings Display
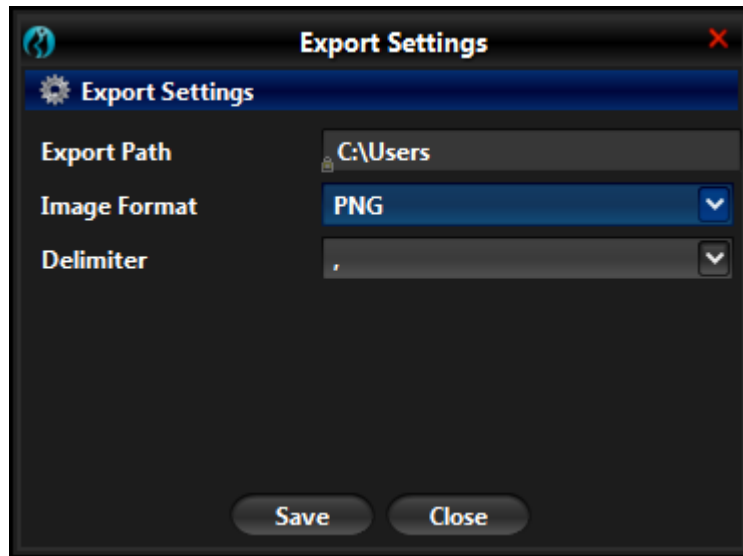
In addition to the current situation, the suspension log history which includes suspension actions during the day may also be monitored for the relevant day through the "Suspension Logs" tab which pops up from the "Account" menu under the "Suspension" menu. The screenshot feature can also be used for information in the suspension log history tab.

Figure 156 Suspension Log History Tab Display

7.2. SUSPENDED PRODUCTS

The "Product" menu under "the Suspension" menu includes the "Product Suspension" and "Product Suspension Logs" tabs. Under these tabs, the suspension and suspension logs tabs related to the investor based nominal limits at market or market groups level in the Derivatives Market which are planned to be put into use by Takasbank at a later date can be tracked.

The information regarding the suspension time and level (which investor id and accounts were suspended for which type of product or product groups), the suspension source and the suspension reason and the open order status at breached investor's accounts can be tracked through "Suspended
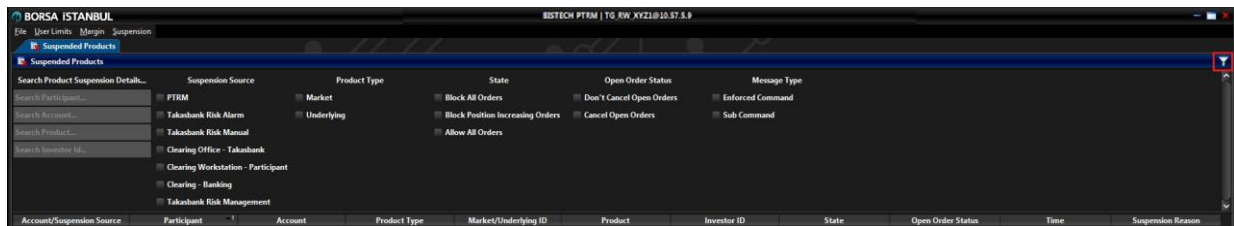
Product" tab, which is opened by clicking on the "Product Suspension" header from the "Product" menu under the "Suspension" menu.

Figure 157 Suspended Product Tab Display

You can access filtering options by clicking on the top of the suspended products tab.

Figure 158 Suspended Products Tab Filtering Options Display

The screenshot feature can also be used for information about the suspended products and information in the products suspension logs tab.

As shown in the figure above, it is possible to export the suspended accounts information as a screen image or csv file as the following: open the folder where the image or the file is saved, change the folder in which the image or the file will be saved and change the format of the screen image or the delimiter (separator) which is used in csv file with the export function which pops up by right-clicking anywhere in the section where the "Suspended Products" tab or the "Suspended Products Log" tab is located. The folder in which the image/file will be saved, the format of the image and the delimiter which will be used in csv file may be changed through the "Settings". The "Open Containing Folder", "Screenshot" and "CSV" options will not be activated without selecting the folder that the image/file will be saved under the "Settings" option.

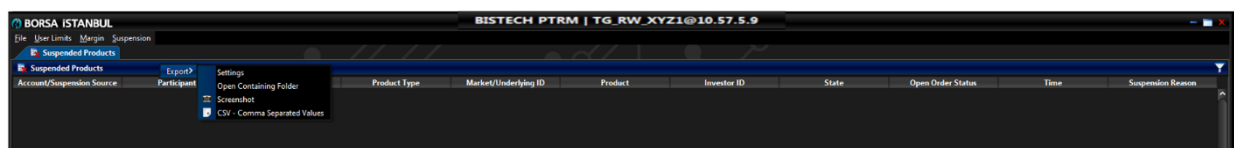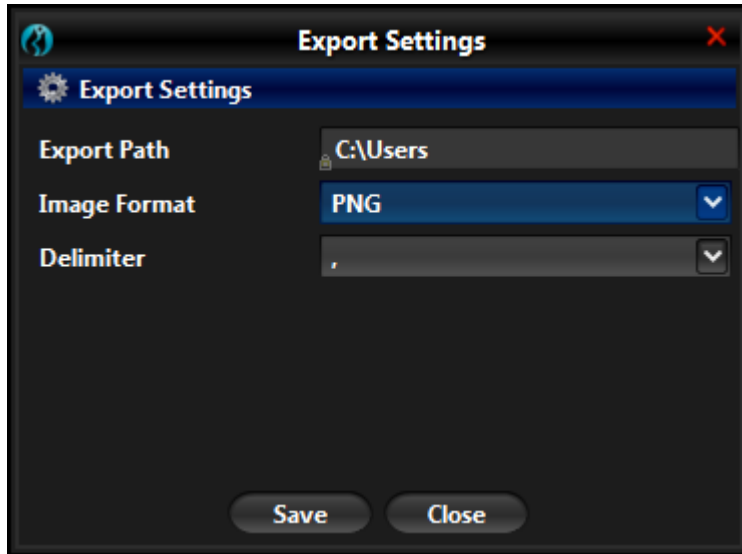**Figure 159 Export Suspension Products Data Display**

Product suspension actions occurring in an account can be monitored through the "Product Suspension Log" tab which pops up from the "Product" menu under the "Suspension" menu. The screenshot feature can also be used for information in the product suspension logs tab.

Figure 161 Suspension Log History Tab Display
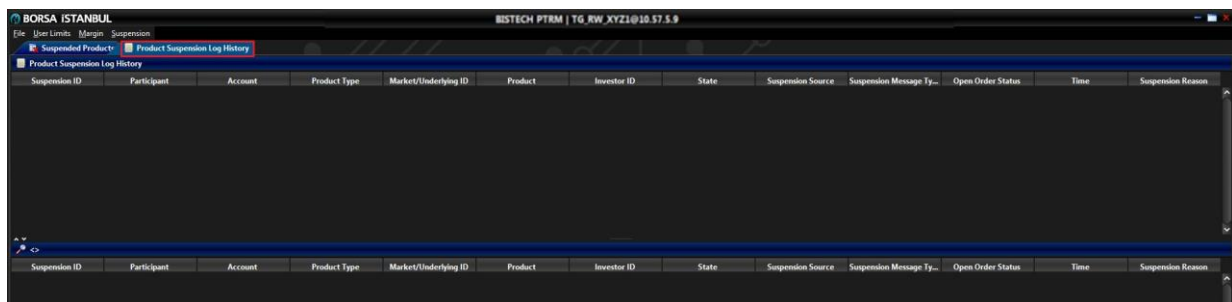
8. QUICK FACTS FOR PTRM GUI

o The configuration changes on PTRM GUI have to be completed at the latest by 23:15 on business days.

o It is recommended that Exchange members consistently monitor the risks of the risk groups they defined.

o It is important to keep in mind for Exchange members that simultaneous updates made by more than one user on the same risk group can not be recorded. It is suggested to make their updates according to this restriction while using PTRM GUI.

o In the event of a launch of a new instrument type/class for trading on the Derivatives Market, it should be noted that limits can only be defined for these contracts on the first trading day and these limit configurations will be effective on the following day (second trading day).

o Exchange members using PTRM GUI are advised to inform their customers regarding order cancellations (reasons) arising from PTRM checks. Reference documents for error messages and explanations can be accessed from the link below.

https://www.borsaistanbul.com/en/sayfa/2530/technical-documents

Reference documents:

- FIX Error Messages with code
- FIX Error Messages without code
- System Error Messages Reference Manual   78

o   Test environment PTRM links can be accessed from the link below.

 https://www.borsaistanbul.com/en/sayfa/2530/technical-documents

o   Questions   and   comments   regarding   PTRM   can   be   sent   to   the   e-mail   address
BISTECH_PTRM@borsaistanbul.com.