BrokerTec Risk Management User Manual

October 25, 2022

Neither futures trading nor swaps trading are suitable for all investors, and each involves the risk of loss. Swaps trading should only be undertaken by investors who are Eligible Contract Participants (ECPs) within the meaning of Section 1a(18) of the Commodity Exchange Act. Futures and swaps each are leveraged investments and, because only a percentage of a contract's value is required to trade, it is possible to lose more than the amount of money deposited for either a futures or swaps position. Therefore, traders should only use funds that they can afford to lose without affecting their lifestyles and only a portion of those funds should be devoted to any one trade because traders cannot expect to profit on every trade. All examples discussed are hypothetical situations, used for explanation purposes only, and should not be considered investment advice or the results of actual market experience.

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Table of Contents

Getting Started

BrokerTec Risk Management is available for authorized users (firm risk administrators / firm viewers) to view and manage BrokerTec firm / firm group / trader risk settings.

User Roles and Permissions

- **Firm Risk Admin**: View and Manage risk settings and alert notifications. View alerts for firm groups.
- **Firm Risk Viewer**: View risk settings (set by admins) and alert notifications for firms and firm groups.

To request access, complete and submit a BrokerTec Risk Management Production Registration form.

This form provides the CME Group with the company and user identifiers that CME Group will use to entitle users with application access.

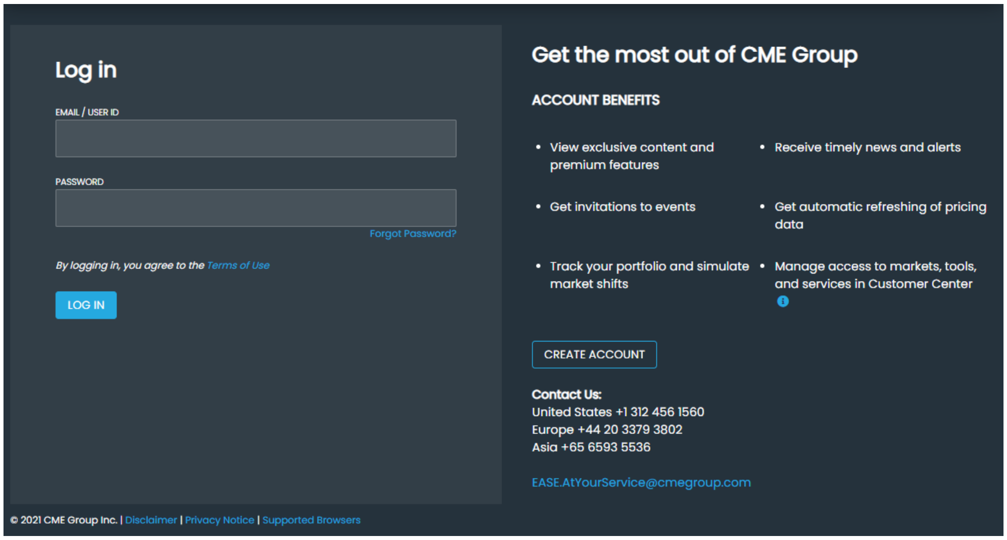
See What's New / Revision History

Accessing BrokerTec Risk Management

BrokerTec Risk Management is accessible from the CME Customer Center menu. A valid CME Group Login ID is required.

To access BrokerTec Risk Management:

1. Navigate to the CME Group Login page.
2. If you are not logged in, enter login credentials and select **Log In**.



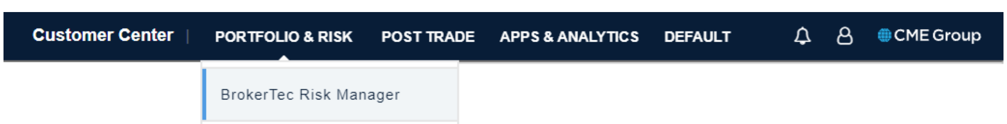
3. Authenticate your ID:

   Via Duo.

   OR

   Enter the code that was sent to your mobile device or voice code from an automated call to your primary phone number (US only).

4. From the CME Customer Center menu, select **Portfolio & Risk** > **BrokerTec Risk Management**.



Note: For additional information about creating or managing a CME Group Login, or using multi-factor authentication, please review the CME Group Login User Help System.

Authorized Users

Available functions and data are based on assigned permissions, which are granted via the following roles:

Firm Risk Admin:

- View and edit product group risk settings for firms, firm groups and traders, which operate in addition to BrokerTec limits.

  For all limits, the most restrictive limit (BrokerTec or Firm) is enforced.

Firm Risk Viewer:

- View risk group and product group settings for firms and traders.
- View thresholds and alerts settings.

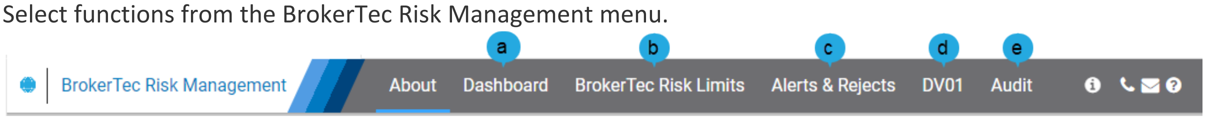
Support Contacts

For questions or issues using BrokerTec Risk Management, refer to the Contact Information directory on CME Group's Client Systems Wiki.

- For production application assistance contact the Global Command Center (GCC).
- For login support, onboarding, application entitlements, contact Enterprise Application & Systems Entitlements (EASE).
- For market access, risk management configuration contact Global Account Management (GAM).

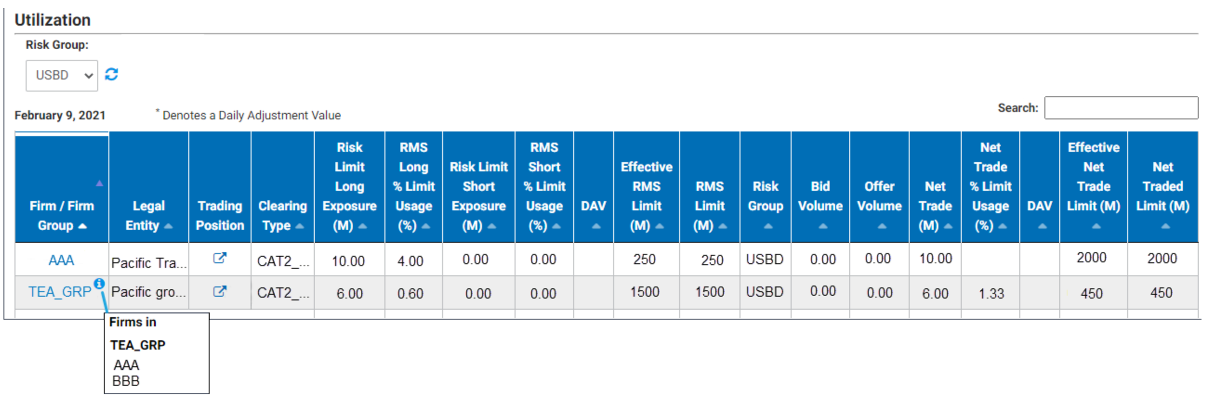
BrokerTec Risk Management Functions

Select functions from the BrokerTec Risk Management menu.



a. Dashboard

A daily summary of Firm and Firm Group risk exposure and risk limit utilization.

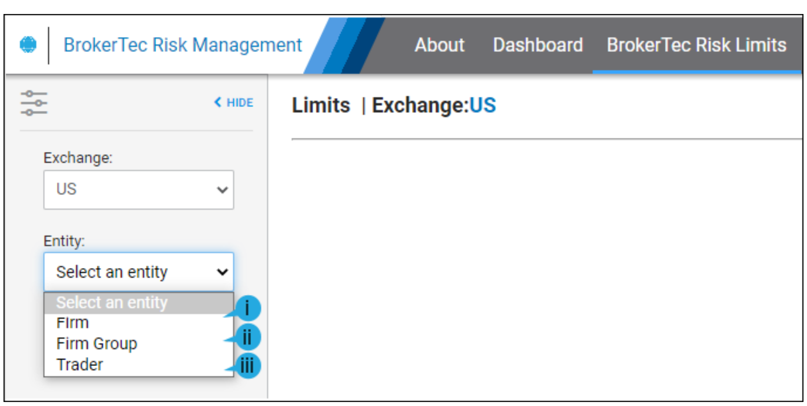


Firm / Firm Group	Legal Entity	Trading Position	Clearing Type	Risk Limit Long Exposure (M)	RMS Long % Limit Usage (%)	Risk Limit Short Exposure (M)	RMS Short % Limit Usage (%)	DAV	Effective RMS Limit (M)	RMS Limit (M)	Risk Group	Bid Volume	Offer Volume	Net Trade (M)	Net Trade % Limit Usage (%)	DAV	Effective Net Trade Limit (M)	Net Traded Limit (M)
AAA	Pacific Tra...		CAT2_...	10.00	4.00	0.00	0.00		250	250	USBD	0.00	0.00	10.00			2000	2000
TEA_GRP	Pacific gro...		CAT2_...	6.00	0.60	0.00	0.00		1500	1500	USBD	0.00	0.00	6.00	1.33		450	450

b. BrokerTec Risk Limits

Firm Admin users can view and manage their firm, firm group and trader risk settings.

Accessible from **Firm** (i)/ **Firm Group** (ii) functions.

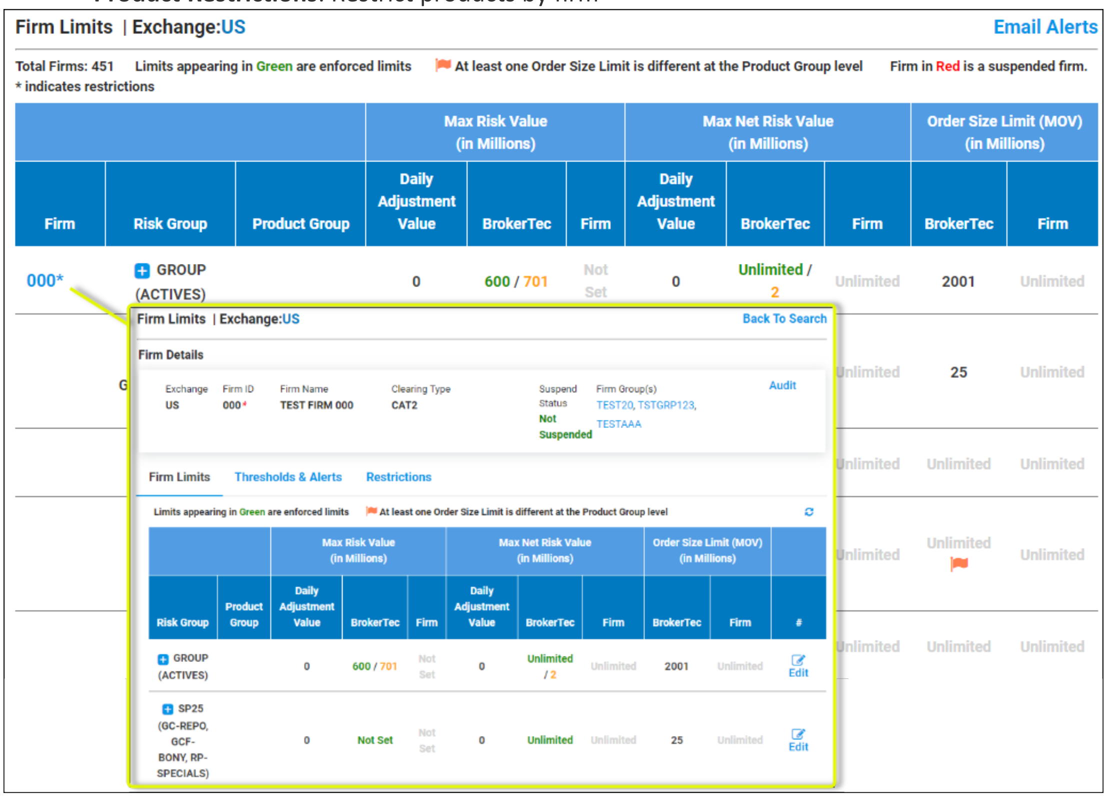


i. Firm Risk Settings

Risk Settings - Limits

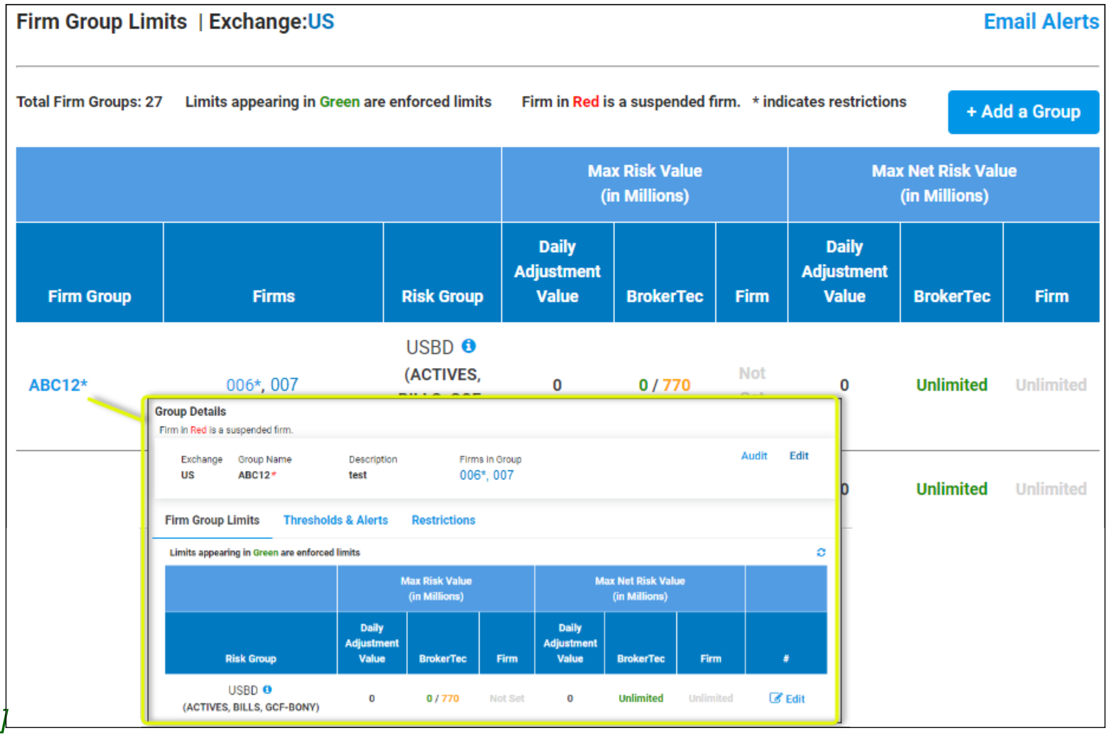
- **Max Risk Value**: Potential Exposure
- **Max Net Risk Value**: Net Traded Limit
- **Order Size Limit**: Maximum Order Value / Clip Size
- **Daily Adjustment**: Adjustments to risk limits for the current trading session

- **Thresholds & Alerts**: Receive an email when trading activity exceeds a user specified percentage of risk limits.
- **Product Restrictions**: Restrict products by firm



ii. Firm Group Risk Settings

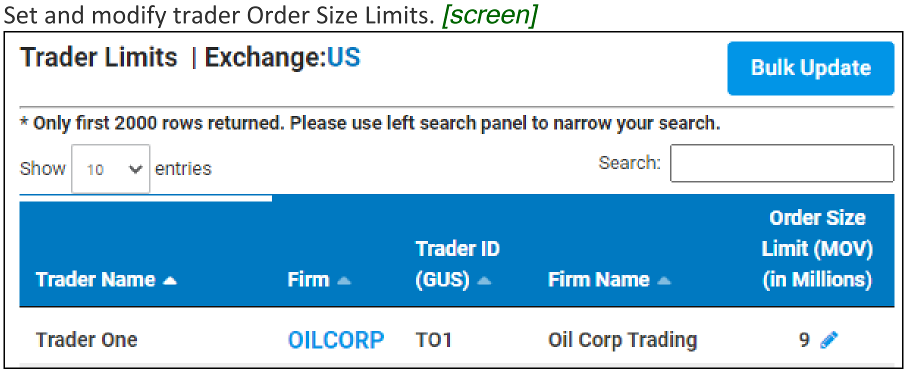
For details, see Firm: Risk Settings



[screen]

iii. Trader Risk Settings

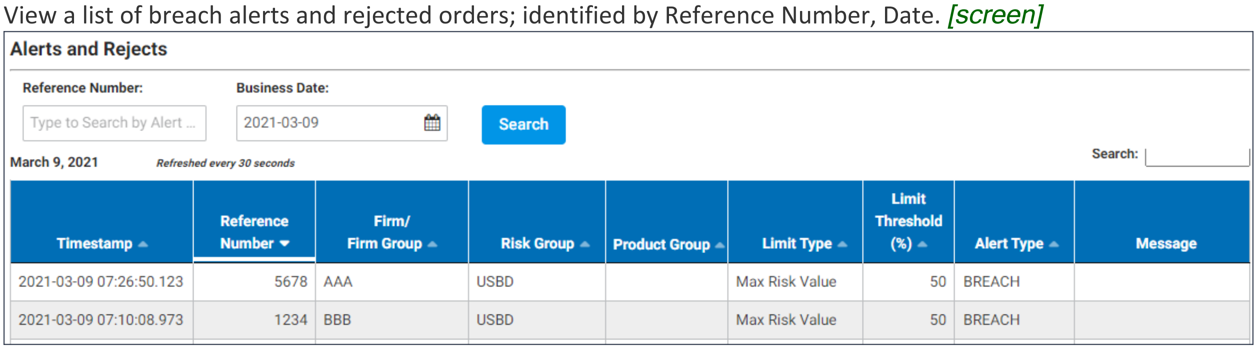
Set and modify trader Order Size Limits. *[screen]*



Trader Name	Firm	Trader ID (GUS)	Firm Name	Order Size Limit (MOV) (in Millions)
Trader One	OILCORP	TO1	Oil Corp Trading	9

c. Alerts & Rejects

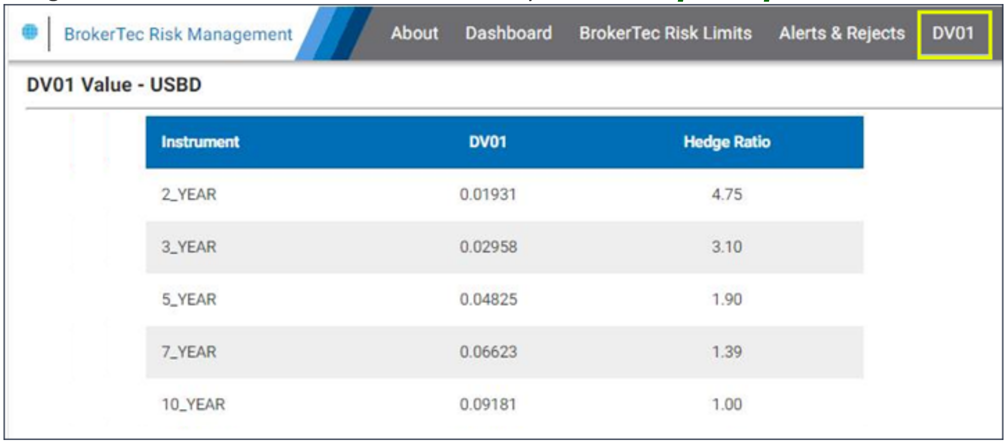
View a list of breach alerts and rejected orders; identified by Reference Number, Date. *[screen]*



Timestamp	Reference Number	Firm/ Firm Group	Risk Group	Product Group	Limit Type	Limit Threshold (%)	Alert Type	Message
2021-03-09 07:26:50.123	5678	AAA	USBD		Max Risk Value	50	BREACH	
2021-03-09 07:10:08.973	1234	BBB	USBD		Max Risk Value	50	BREACH	

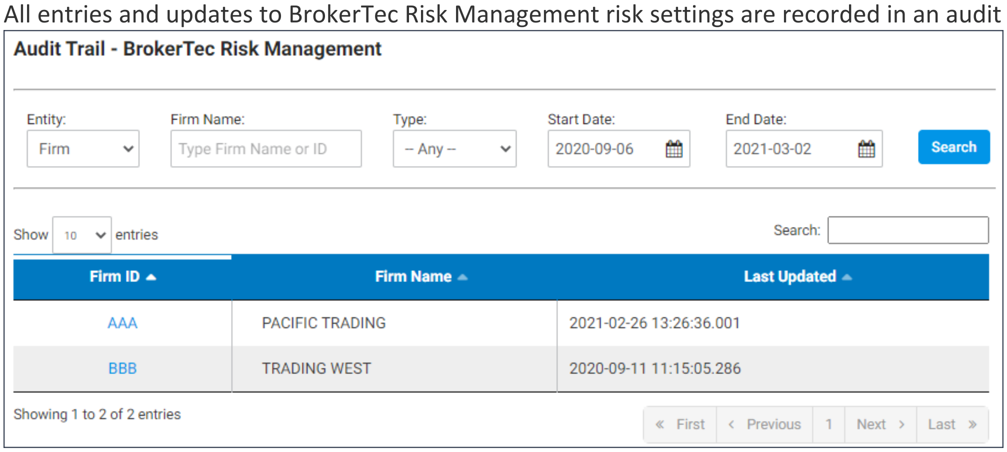
d. DV01

Hedge Ratio and Credit Utilization calculations by instrument. *[screen]*



e. Audit

All entries and updates to BrokerTec Risk Management risk settings are recorded in an audit trail. *[screen]*



Viewing and Managing Firm Risk Settings

Firm Admin users can view and manage their own firm, firm group and trader risk settings, including limits, alert notifications on limit thresholds, product restrictions and view an audit trail of risk setting changes.

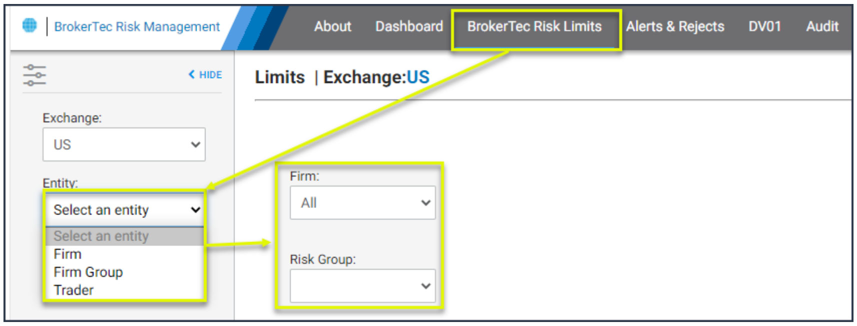
The following information illustrates the process to access the Firm Limits function to manage risk settings.

BrokerTec Risk Limits

To Manage Firm Risk Settings:

1. From the application menu, select **BrokerTec Risk Limits** then use the filter to view an **Entity** type.

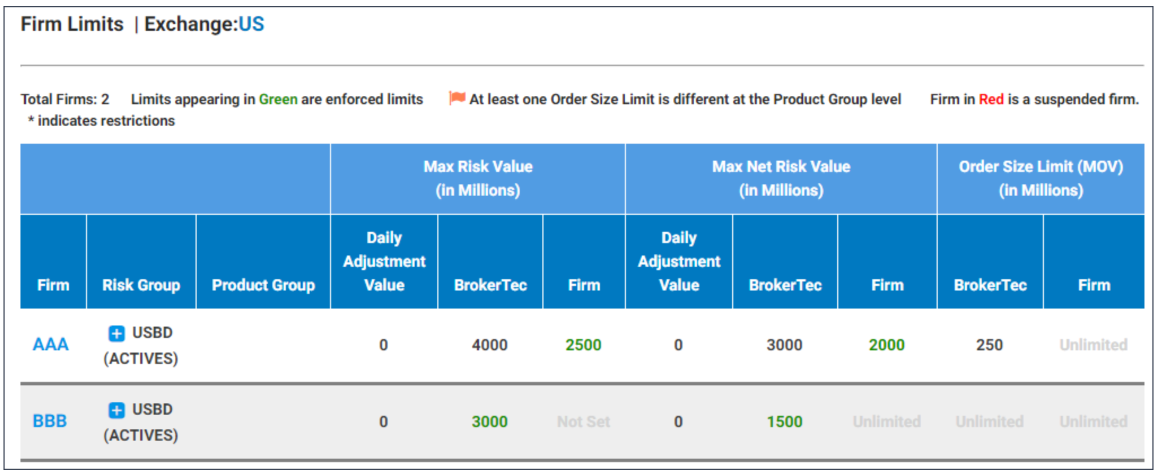
   Optional: Select a specific **Firm** and **Risk Group**.



On the *Firm Limits* page, a list of Firm risk settings appears.

Firm users can only view firms that they are authorized to manage.

- Effective / Enforced limits appear in **green**
- Suspended firms appear in **red**.



Firm Limits | Exchange:US

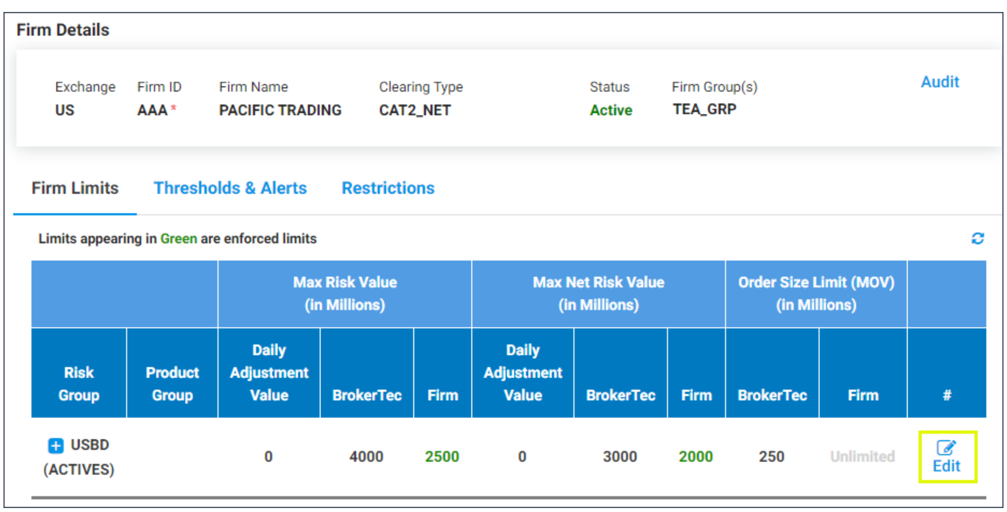
Total Firms: 2 Limits appearing in Green are enforced limits At least one Order Size Limit is different at the Product Group level Firm in Red is a suspended firm.
* indicates restrictions

			Max Risk Value (in Millions)			Max Net Risk Value (in Millions)			Order Size Limit (MOV) (in Millions)	
Firm	Risk Group	Product Group	Daily Adjustment Value	BrokerTec	Firm	Daily Adjustment Value	BrokerTec	Firm	BrokerTec	Firm
AAA	USBD (ACTIVES)		0	4000	2500	0	3000	2000	250	Unlimited
BBB	USBD (ACTIVES)		0	3000	Not Set	0	1500	Unlimited	Unlimited	Unlimited

2. From the Firm Limits page, select a **Firm ID** to *view* details.

Note: BrokerTec limits cannot be modified by Firm Admins.

3. To modify Firm limits, select **Edit**.



Firm Details

Exchange	Firm ID	Firm Name	Clearing Type	Status	Firm Group(s)
US	AAA *	PACIFIC TRADING	CAT2_NET	Active	TEA_GRP

Audit

Firm Limits Thresholds & Alerts Restrictions

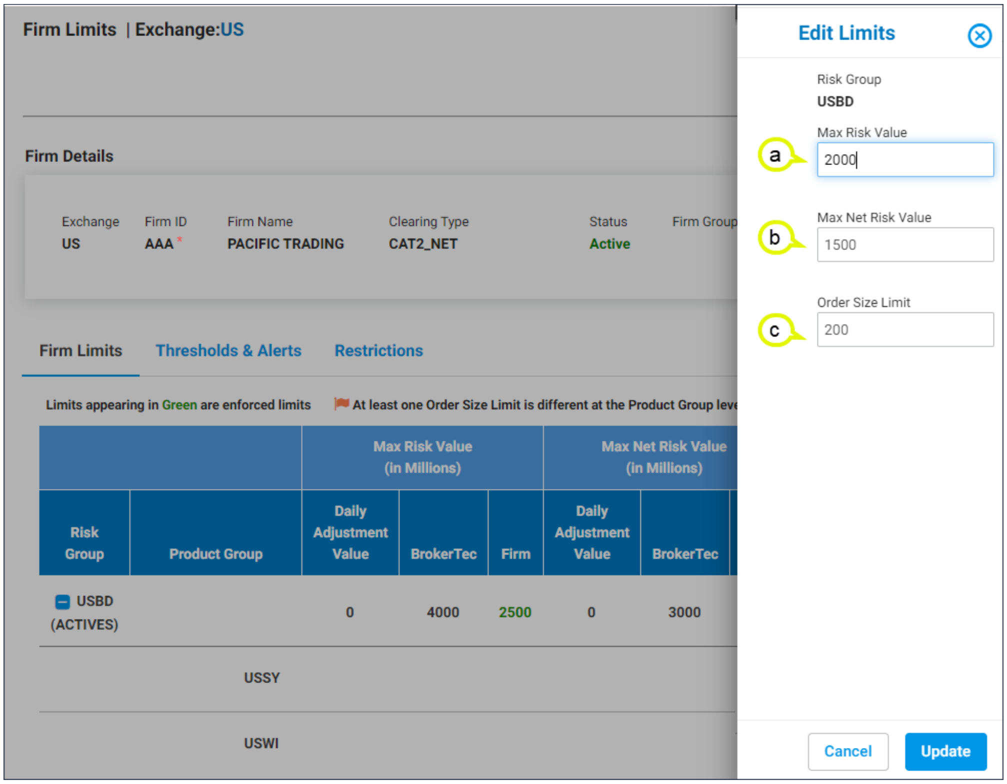
Limits appearing in Green are enforced limits

		Max Risk Value (in Millions)			Max Net Risk Value (in Millions)			Order Size Limit (MOV) (in Millions)		
Risk Group	Product Group	Daily Adjustment Value	BrokerTec	Firm	Daily Adjustment Value	BrokerTec	Firm	BrokerTec	Firm	#
USBD (ACTIVES)		0	4000	2500	0	3000	2000	250	Unlimited	Edit

Note: To view a list of updates to BrokerTec Risk Management risk settings select the Audit function.

On the side panel that appears, users can enter limits for **Max Risk Value**, **Max Net Risk Value** and **Order Size** (limit).

Firm limits are optional and not required for trading. The more restrictive limit between the BrokerTec limit and optional Firm limits, for each limit type, will be enforced.



a. **Max Risk Value**: This value is also known as *potential exposure*.

   Risk Value Calculation:

   - Working long notional quantity **+** net traded notional quantity **=** maximum long
   - Working short notional quantity **+** net traded notional quantity **=** maximum short

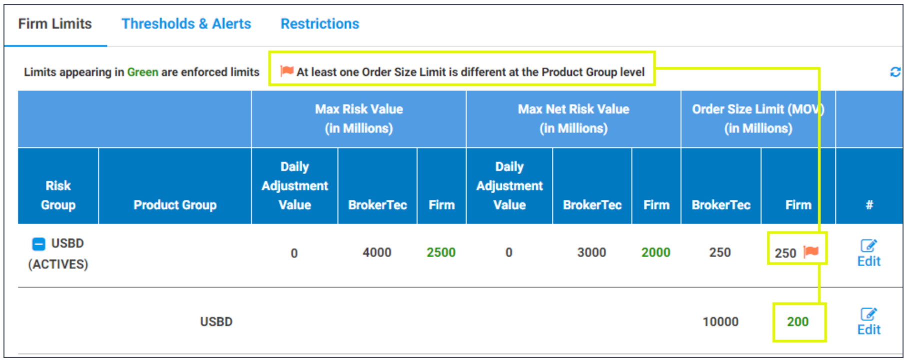
b. **Max Net Risk Value**: Also known as Net Traded limit.

   Example: Post-trade Max Net Risk Value calculation compares net-traded position against the Max net-traded long / short risk limit.
   - Maximum Short = Aggressing order to Sell 10M + Existing Net-traded Short 15M = Short 25M
   - Maximum Long = Aggressing order to Buy 20M + Existing Net-traded Short 15M = Long 5M

c. **Order Size Limit**: This value is also known as Maximum Order Value (MOV) or maximum clip size.

   The Order Size limit is set on the Product Group level but a value can be set on the Risk Group level to propagate the limit to all of the Product Groups within the Risk Group.

   Note: Order size limits on *Product Groups* can be set independently from the limit set on the *Risk Group* level.
   If a *Product Group - Order Size Limit* is different than the overall *Risk Group - Order Size Limit*, a flag (🚩) appears with a message "At least one Order Side Limit has changed at the Product Group level".


Firm Limits | Thresholds & Alerts | Restrictions

Limits appearing in Green are enforced limits

At least one Order Size Limit is different at the Product Group level

		Max Risk Value (in Millions)			Max Net Risk Value (in Millions)			Order Size Limit (MOV) (in Millions)		
Risk Group	Product Group	Daily Adjustment Value	BrokerTec	Firm	Daily Adjustment Value	BrokerTec	Firm	BrokerTec	Firm	#
USBD (ACTIVES)		0	4000	2500	0	3000	2000	250	250	Edit
	USBD							10000	200	Edit

d. **Daily Adjustment Value**: A Daily Adjustment value may be set by the BrokerTec Admin at the request of the Firm.

The adjusted value will be added to the existing risk limit for the remainder of the trading day and increase the existing risk limits by the daily adjusted value. At the end of the trading day the Adjustment value will reset to 0 and the Max Risk Value / Max Net Risk Value is updated to reflect the configured risk value limit.

Example: If the Max Risk Value limit is 50M and the risk manager enters 10M in the Daily Adjustment Value, the current daily RMS limit will total 60M.
At the end of the trading day, the RMS limit will revert to 50M and the Daily Adjustment Value will reset to zero.

Note: Limits for USBD Group US Treasury Actives limits are set in 10 year equivalent notional terms.

For additional details on Hedge Ratios and Credit Utilization Calculation, refer to DV01 Values.

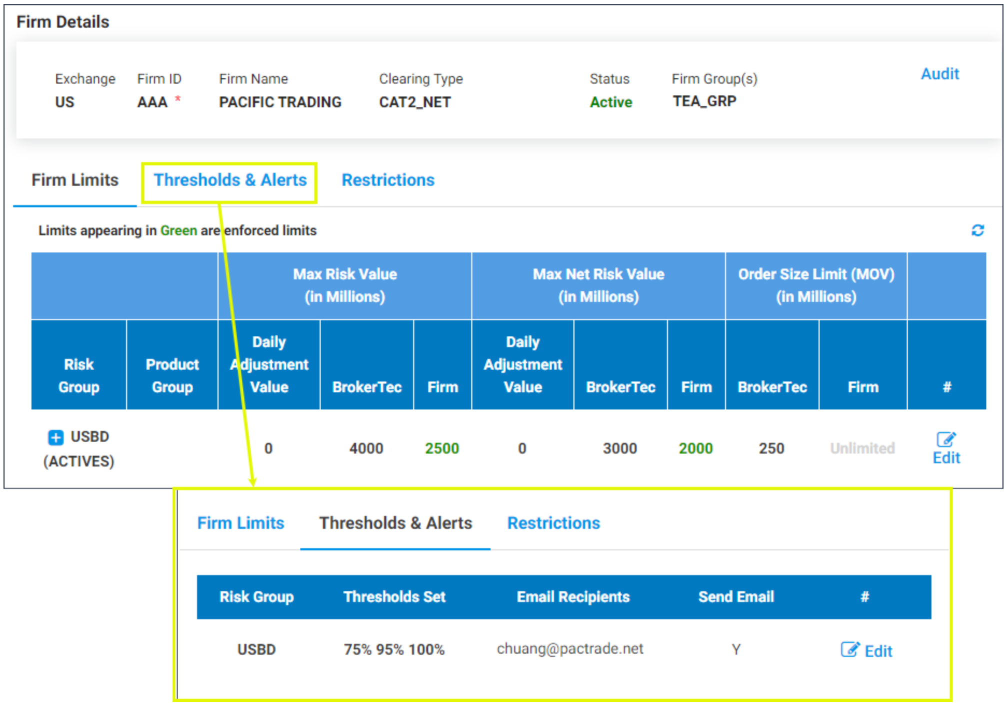
Thresholds & Alerts

On the Thresholds and Alerts screen, users can set up thresholds and email recipients for alert notifications when trading activity exceeds a given percentage of the risk limit.

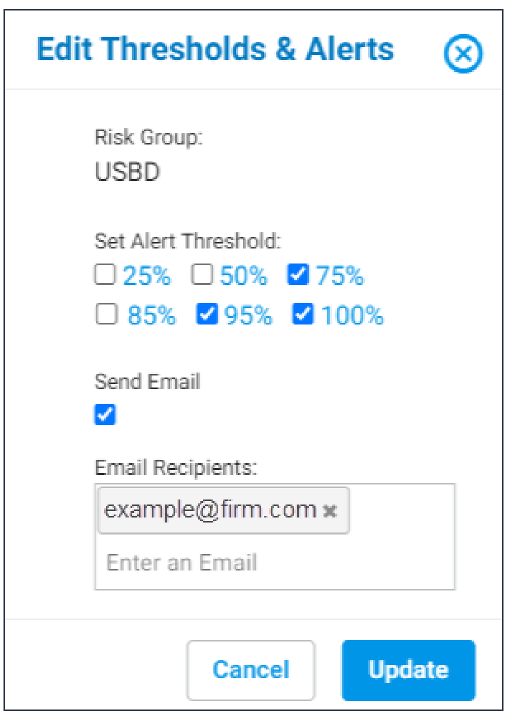
The following instructions illustrate the process to access Thresholds & Alerts to set up alerts.

To view and manage Thresholds & Alerts:

1. From the Firm Details page, select the **Thresholds & Alerts** tab.

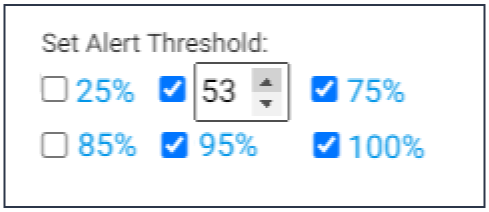


2. On the **Edit Threshold & Alerts** pane, specify the following:



- **Set Alert Threshold**: Select notification thresholds.

Note: To set alert thresholds, select the checkbox for the alert value to update, then use the **up/down** arrow or enter a **value**.



- **Send Email**: Selected by default to indicate emails will be sent.

  Clearing the checkbox will stop email from being sent until it is selected again.

  The default selection will be set for each trading session.
- **Email Recipients**: Specify up to 20 email recipients to receive alert emails for the selected threshold alerts.

3. To confirm alert settings, select **Update**.

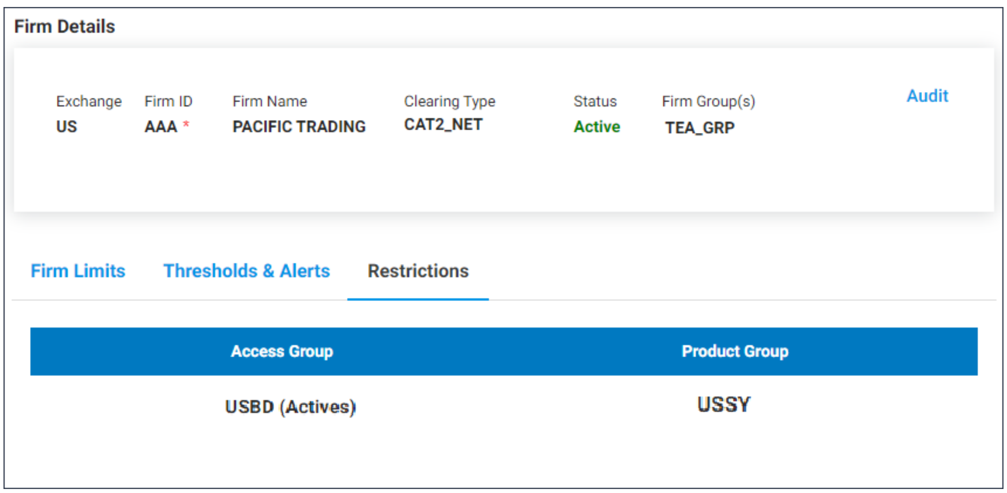
Restrictions

Firm users can view Product Group Restrictions, which are set by the BrokerTec Admin.

To view restrictions:

From the Firm Details page, select a **Firm** (to view details), then select the **Restrictions** tab.

Note: On the Firm Limits search results page, restricted firms / firm groups are indicated with an asterisk (*).



Viewing and Managing Firm Groups

Firm users will be able to view and/or modify settings for their Firm Groups. Firm Admins will only be able to modify limits and threshold settings only if they have access to all the firms in the Firm Group.

Viewing Firm Groups

To Access and Manage Firm Group Settings:

1. Select **BrokerTec Risk Limits** > **Entity**: **Firm Group**.

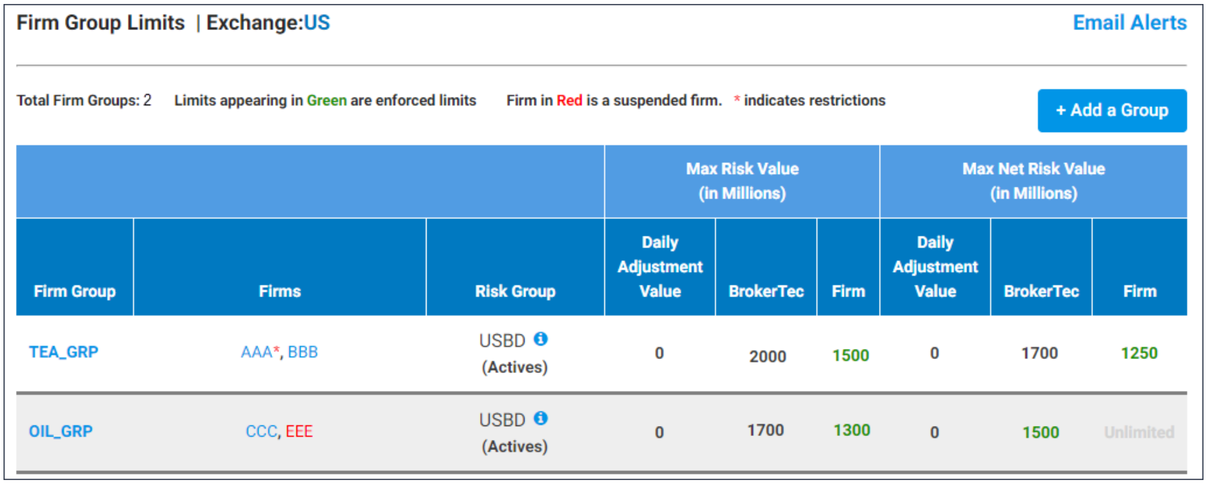
   Optional: Select a specific **Firm Group** and **Risk Group**.

(optional) To view a specific firm group, **filter** available firm groups.
- **Firm Group**: Select a group from the list.
- **Firm**: View groups that include the selected firm.

2. To view details, select a **Firm Group**.

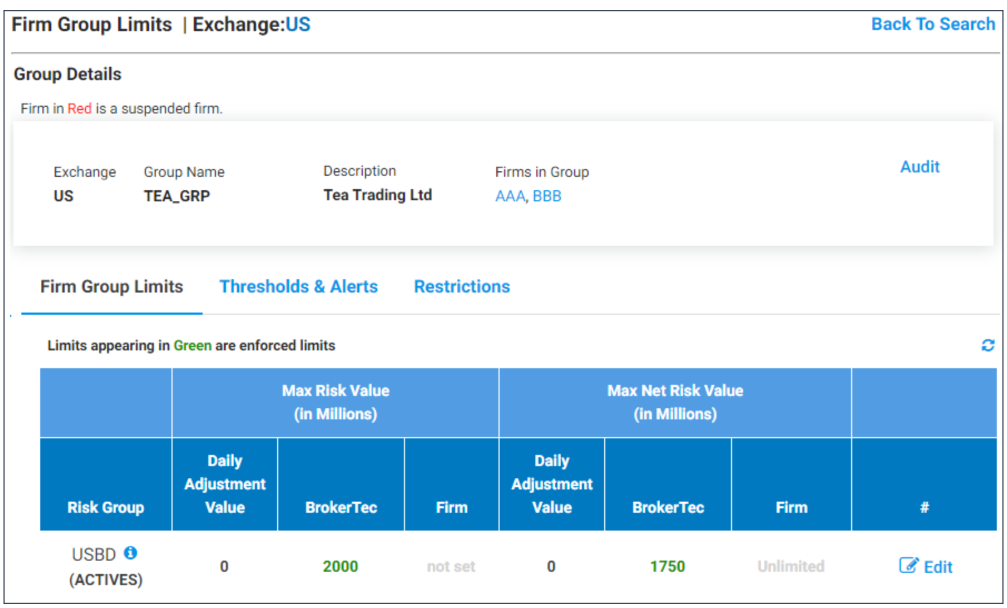
To view a specific firm group, **filter** available firm groups.
- **Firm Group**: Select a group from the list.
- **Firm**: View groups that include the selected firm.

From the *Firm Group Limits* page, the following information and features are available:



			Max Risk Value (in Millions)			Max Net Risk Value (in Millions)		
Firm Group	Firms	Risk Group	Daily Adjustment Value	BrokerTec	Firm	Daily Adjustment Value	BrokerTec	Firm
TEA_GRP	AAA*, BBB	USBD (Actives)	0	2000	1500	0	1700	1250
OIL_GRP	CCC, EEE	USBD (Actives)	0	1700	1300	0	1500	Unlimited

- **Firm Group Details** / **Audit Trail**: View a list of firms within the group. / Select Audit, to view a detailed list of updates performed for this Firm Group.
- **Thresholds & Alerts**: Set email alerts when a firm exceeds a selected percentage of limits.
- **Restrictions**: View firms with product restrictions, which prevents a firm from submitting orders for the product.



	Max Risk Value (in Millions)			Max Net Risk Value (in Millions)			
Risk Group	Daily Adjustment Value	BrokerTec	Firm	Daily Adjustment Value	BrokerTec	Firm	#
USBD (ACTIVES)	0	2000	not set	0	1750	Unlimited	Edit

Note: To view a list of updates to BrokerTec Risk Management risk settings select the Audit function.

a. **Max Risk Value**: Also known as potential exposure.

- Working long notional quantity + net traded notional quantity = maximum long
- Working short notional quantity + net traded notional quantity = maximum short

b. **Max Net Risk Value**: Also known as Net Traded limit, an optional value set by the BrokerTec Admin.

c. **Daily Adjustment Value - Max Risk Value / Max Net Risk Value**: (optional) Adjustment to max risk value limit for the current trading session; in millions USD. This value resets to zero (0) at the close of daily trading and normal risk values resume.

Note: Firm Admins may set limits on the Max Risk Value and Max Net Risk Value and the most restrictive limits, of the BTEC Admin and Firm Admin, will be highlighted and enforced.

Viewing and Managing Trader Limits

BrokerTec Admins and Firm Admins can set and modify Order Size Limits for Traders.

BrokerTec and Firm Admins have access to the same limit field and may modify the currently set value.

Viewing Trader Limits

To View BrokerTec Trader Limits:

1. From the application menu, select **BrokerTec Risk Limits** > **Entity**: **Trader**.
2. To find a specific trader, use the **filter** and enter the first few characters or select a Trader ID.

   The page displays a list of Trader and their configured Order Size (MOV) limits.

Trader Limits | **Exchange:US** — Bulk Update

Show 10 entries — Search:

Trader Name	Firm	Trader ID	Firm Name	Order Size Limit (MOV) (in Millions)
Trader One	AAA	TRD1	PACIFIC TRADING	Unlimited
Trader Two	BBB	TRD2	PACIFIC TRADING	Unlimited
Trader Three	AAA	TRD3	PACIFIC TRADING	Unlimited
Trader Four	H008	TRD4	PACIFIC WEST TRADING	250

Setting Trader Order Size Limits

A single order size limit (MOV) can be set for each trader and is applicable to all products they are entitled to trade.

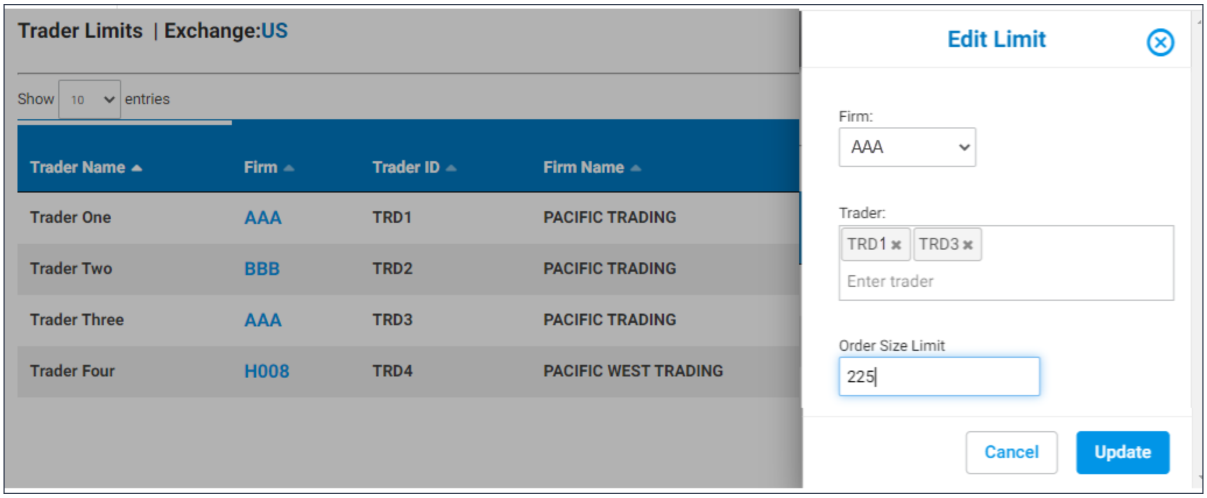
Trader limits can be updated in ‘Bulk’ or for an individual trader.

a. To set a limit on an individual trader, select the **pencil** ( ) icon then enter the maximum allowable order size (in millions USD).

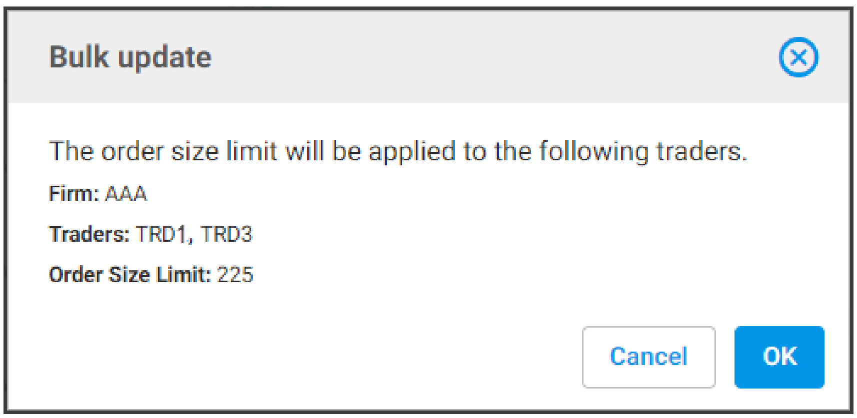
   To Submit the limit, select the check ( ) or x ( ) icon to cancel.

b. **Bulk Update** (Bulk Update): Update the Order Size Limit for multiple traders.

After selecting traders, or after using the *default* **All traders**, an order size limit (in millions USD) can be set.



For the confirmation message that appears, select **OK**.



Additional Functions

The following sections describe additional BrokerTec Risk Management functions:

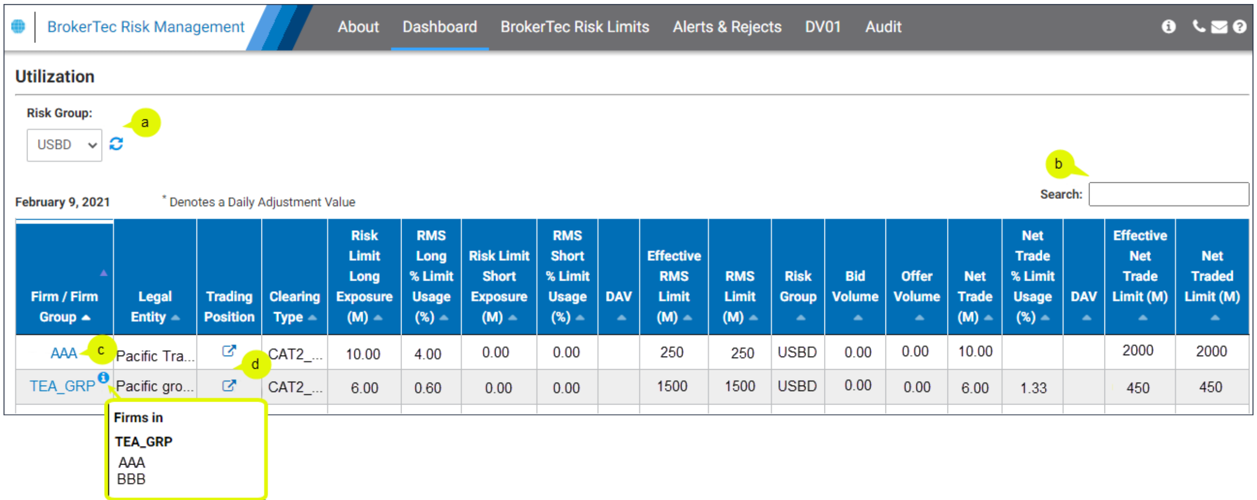
- Dashboard
- Alerts & Rejects
- DV01
- Audit

About

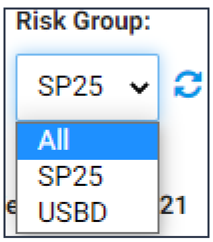
Opens a landing page with application and contact information; link to instructional webhelp, and CME Group support contacts.

Dashboard

The Dashboard displays a daily summary of Firm and Firm Group risk exposure and utilization of risk limits.



a. Risk Group: The Dashboard default display is *utilization for USBD*; additional Risk Groups, or All, may be selected.



Column headings can be sorted by selecting the arrows to sort by ascending or descending order. By default data is sorted by the Firm / Firm Group column.

b. Search: Searches for any text on the dashboard.

c. To access Firm / Firm Group Details, select the linked Firm / Firm Group ID.

d. To view Firms within a Firm Group, move the mouse pointer over the information ( ) icon in the Firm/Firm Group column.

e. To view a breakdown of the products traded for the Risk Group and aggregate exposure, select the icon ( ) under the Trading Positions.

Color coding – usage above a certain percentage will be highlighted

- 50%+ is highlighted in **yellow**
- 75%+ is highlighted in **orange**
- 100% is highlighted in **pink**

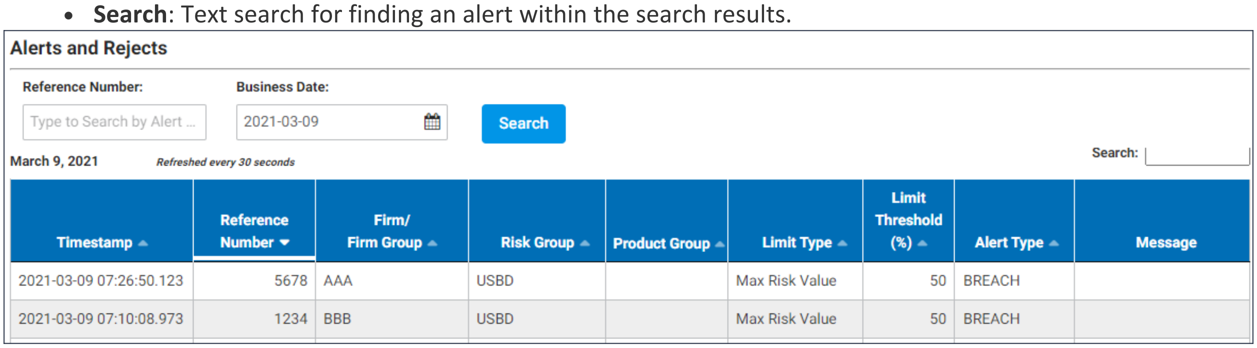
Instrument	Long	Short	Net Trade
30_YEAR	81	75	6
20_YEAR	20	108	-88
10_YEAR	86	93	-7
7_YEAR	75	46	29
5_YEAR	61	62	-1
3_YEAR	22	35	-13
2_YEAR	32	2	30

Alerts & Rejects

Use the Alerts & Rejects function to view breach alerts and rejected orders.

Users may search for specific alerts by:

- **Reference Number**: Alert emails will include Reference numbers; users may look up details of any alert using a reference number.
- **Business Date**: View all alerts for the selected date.
- **Search**: Text search for finding an alert within the search results.



Timestamp	Reference Number	Firm/ Firm Group	Risk Group	Product Group	Limit Type	Limit Threshold (%)	Alert Type	Message
2021-03-09 07:26:50.123	5678	AAA	USBD		Max Risk Value	50	BREACH	
2021-03-09 07:10:08.973	1234	BBB	USBD		Max Risk Value	50	BREACH	

DV01 Values

Instrument DV01 values are used to calculate hedge ratios for converting utilization of USBD Group "Actives" limits into 10 Yr Equivalent Notional Terms.

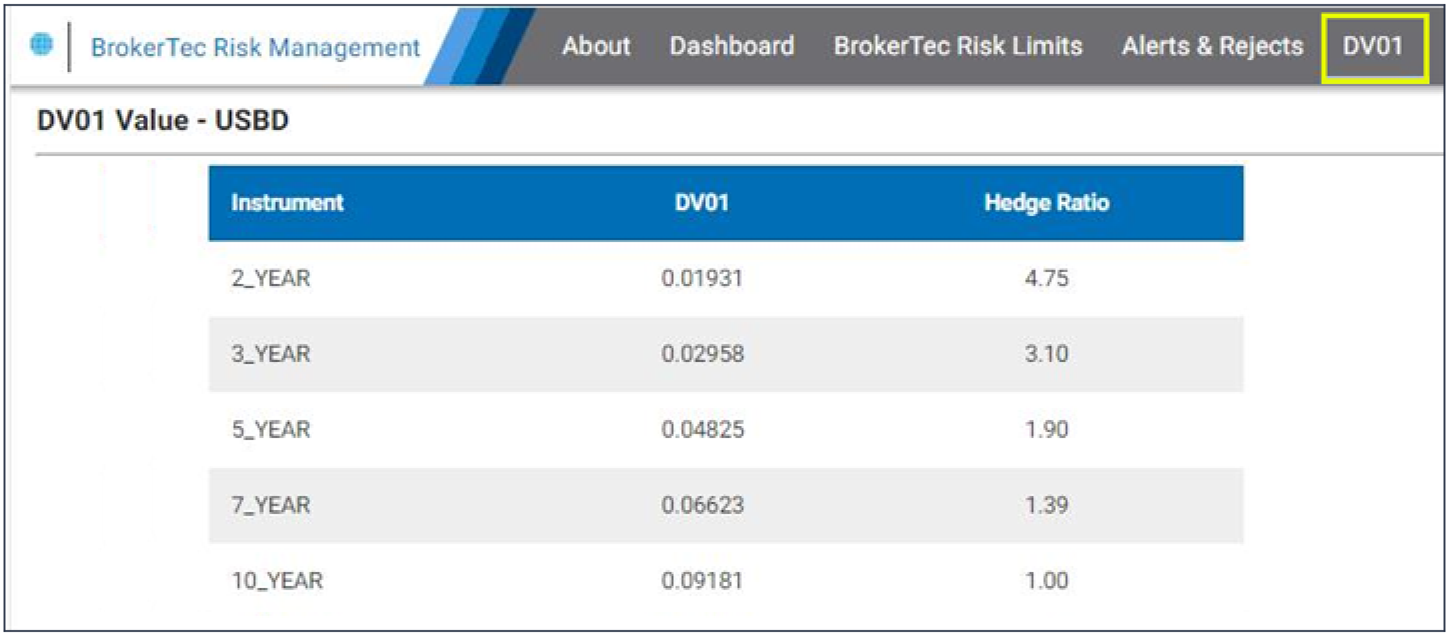
Hedge Ratio calculation: 10 Yr DV01 / Instrument DV01 = Instrument Hedge Ratio (rounded to 2 decimal places)

Example: 2 Yr Hedge Ratio
0.09004 / 0.01897 = 4.75

Credit Utilization calculation: Notional Amount Instrument * (1 / Hedge Ratio Instrument) = 10 Yr Equivalent Notional Amount

Example: Credit Utilization 2 Yr
$1,000,000 2 Yr * (1 / 4.75) = $210,526.31 10 Yr

*DV01 values are determined at the end of New York trading (rounded to 5 decimal places)



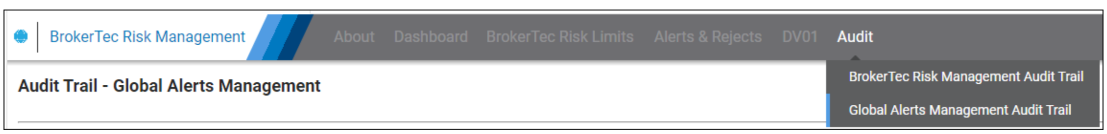
Instrument	DV01	Hedge Ratio
2_YEAR	0.01931	4.75
3_YEAR	0.02958	3.10
5_YEAR	0.04825	1.90
7_YEAR	0.06623	1.39
10_YEAR	0.09181	1.00

Audit

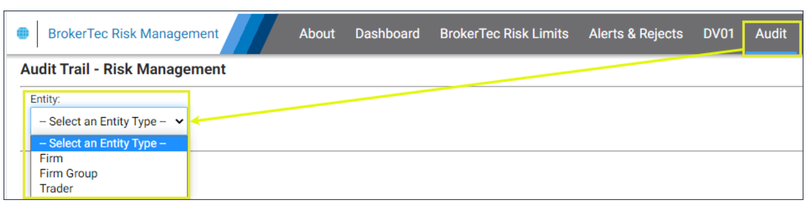
All entries and updates to BrokerTec Risk Management risk settings are recorded in an audit trail.

To access the Audit Trail:

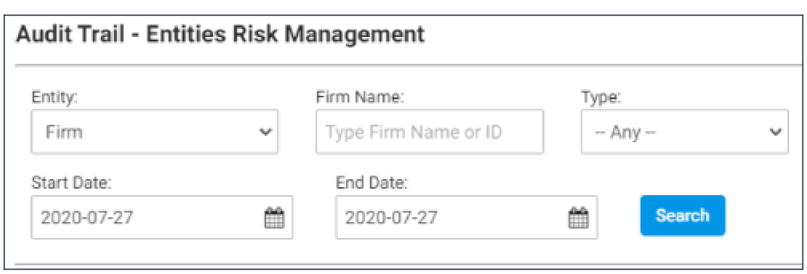
1. From the application menu, go to **Audit**, then select **BrokerTec Risk Management / Global Alerts Management Audit Trail**.



2. From the menu that appears, select the *Entity*:

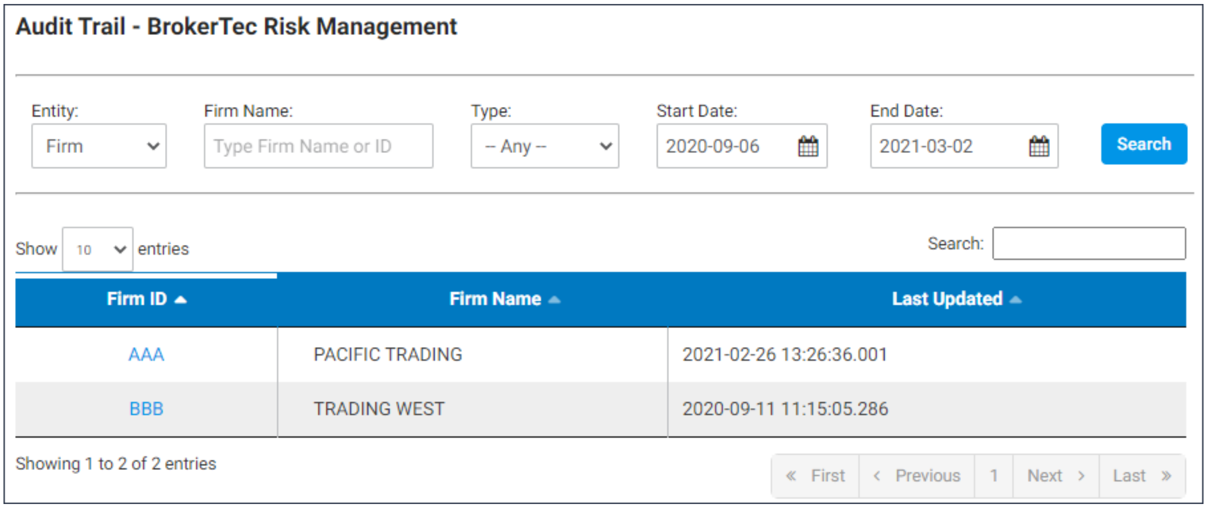


3. Specify *filter* options:

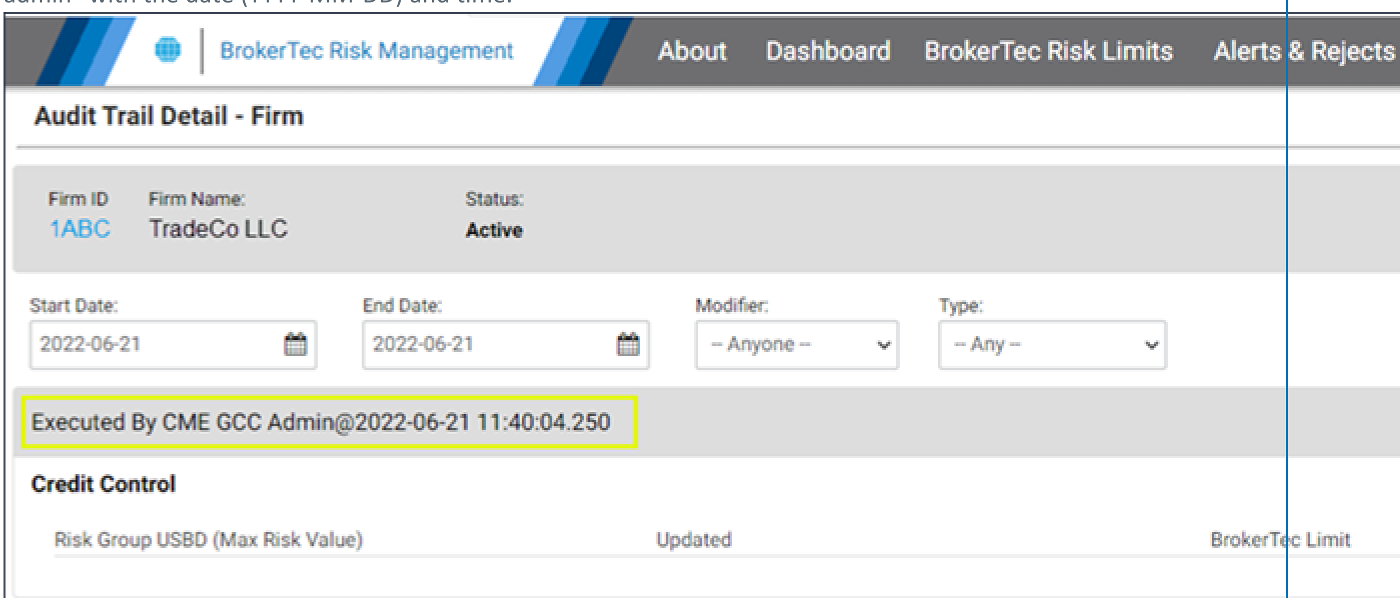


- **Entity**: Select Firm / Firm Group
- **Firm / Group Name / Trader**
- **Type**
  - **Firm**: Updates to firm risk settings
- **Start / End Dates**

4. To view matching results, select **Search**.



Note: Audit Trail results that include updates made by CME Group, are identified as "Executed by CME GCC admin" with the date (YYYY-MM-DD) and time.



Revision History

The below list illustrates the updates made to the BrokerTec Risk Management help system.

Date	Author	Topic	Description
October 25, 2022	mr	Getting Started	added brief summary list of functions
June 23, 2022	mr	Additional Functions	Audit trail includes updates made by CME Group
January 25, 2021	mr	All	initial release