Chicago Stock Exchange

CHX Risk Management Tools Technical User Interface Guide

Version 1.1
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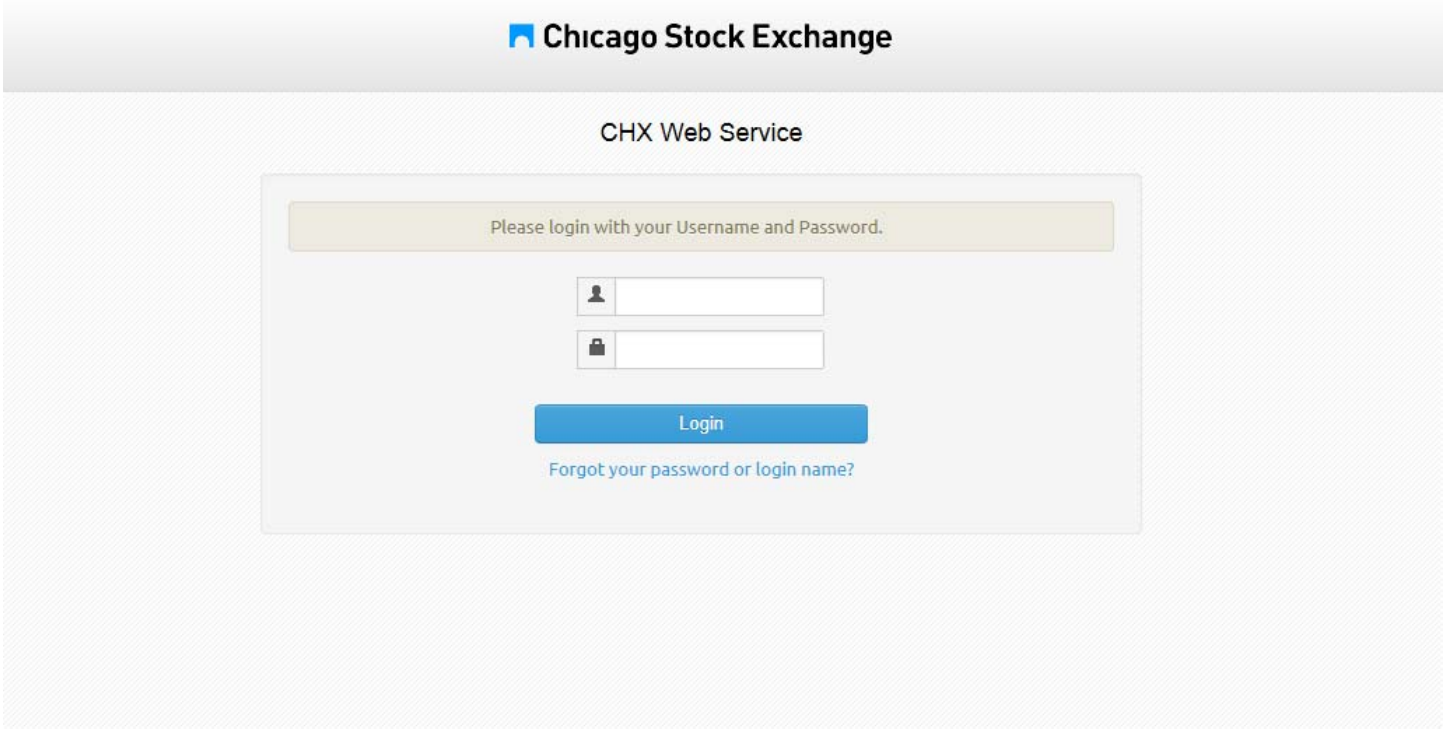
1. Login

When the user enters the main URL (please contact Celeste Gianfrancisco @ 312-663-2038 or cgfrancisco@chx.com for access information) from their browser window, the UI will display the Main Login page.



Main Login Page

1.1. Login Page Features

- The Login page contains input fields for username and password. There also is a "forgot your username or password" link.

If the user enters the correct login username and password:

- A dialog popup containing a rolling wheel icon will be displayed with a message "Executing operation XXX". The login information will be passed to the Kill Switch Server and used to authenticate the user. When the login response from the Kill Switch Server is received, the dialog popup with the rolling wheel is removed and a new popup window with the result of operation will be displayed. User can navigate to any other part of the system while rolling wheel dialog popup is displayed.

- If the user's account is not locked (from previous failed login attempts) and they have not logged in using a temporary password, the UI will display their home page depending from user's role: Clearing Firm, Trading Firm or System Administrator.

- If user is locked then error message is shown "Your account is locked. Please contact system administrator" and user remains in the login page.

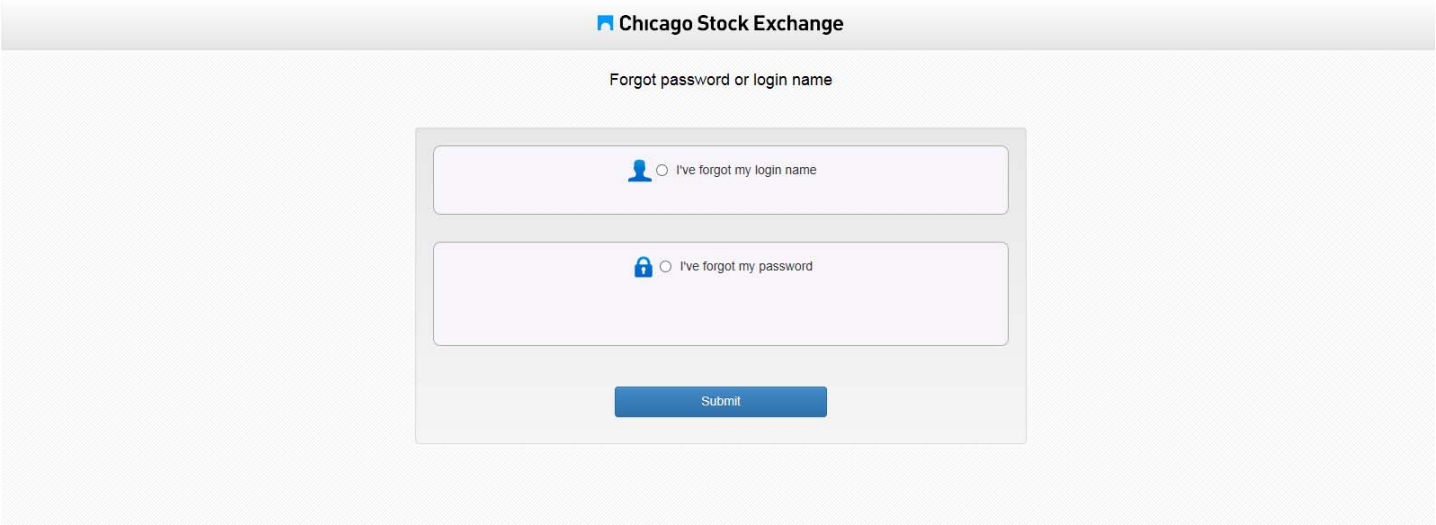
- If user is not locked and temporary password is not user then user goes to home page where "Profile" dialog popup will be automatically shown.

If the user enters an incorrect login username and/or password:

- The UI will display an error message "Invalid password or login username" and user will remain on the Main Login page.

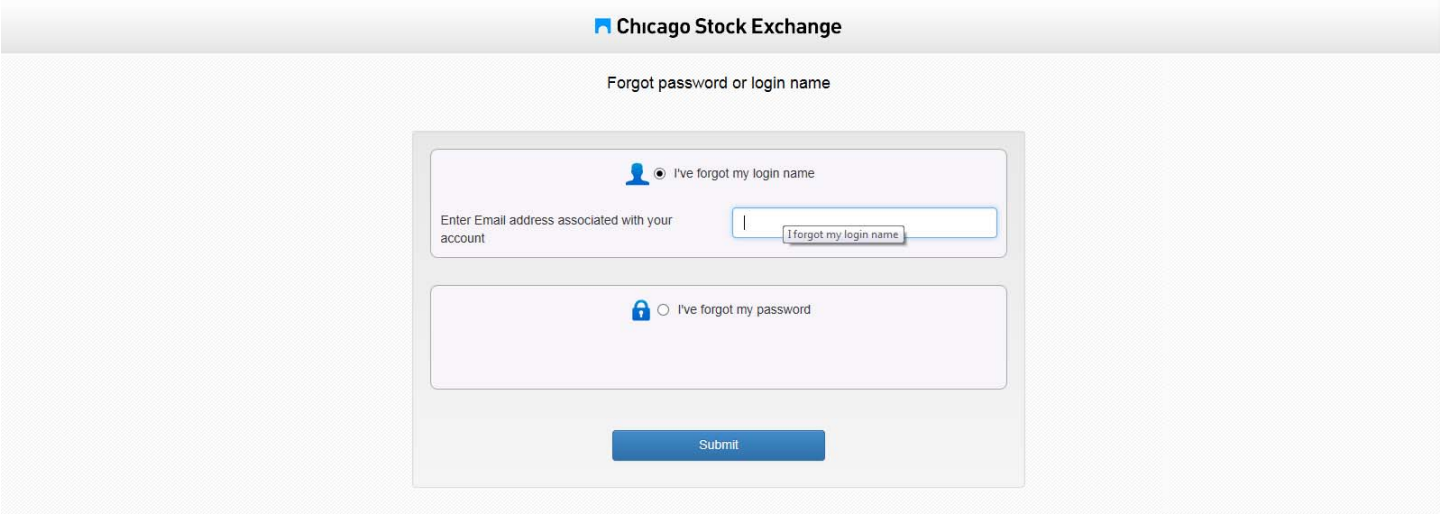
If user clicks the "forgot username or password" link:

- The UI will display the "forgot username or password" page.



Forgot username or password page

- When a user forgets their username, they should select the “I’ve forgot my username” radio button. When selected the user will be prompted to enter their email address that is associated with their account. Once entered, they should click on the “Submit” button to submit the request to the Kill Switch Server.



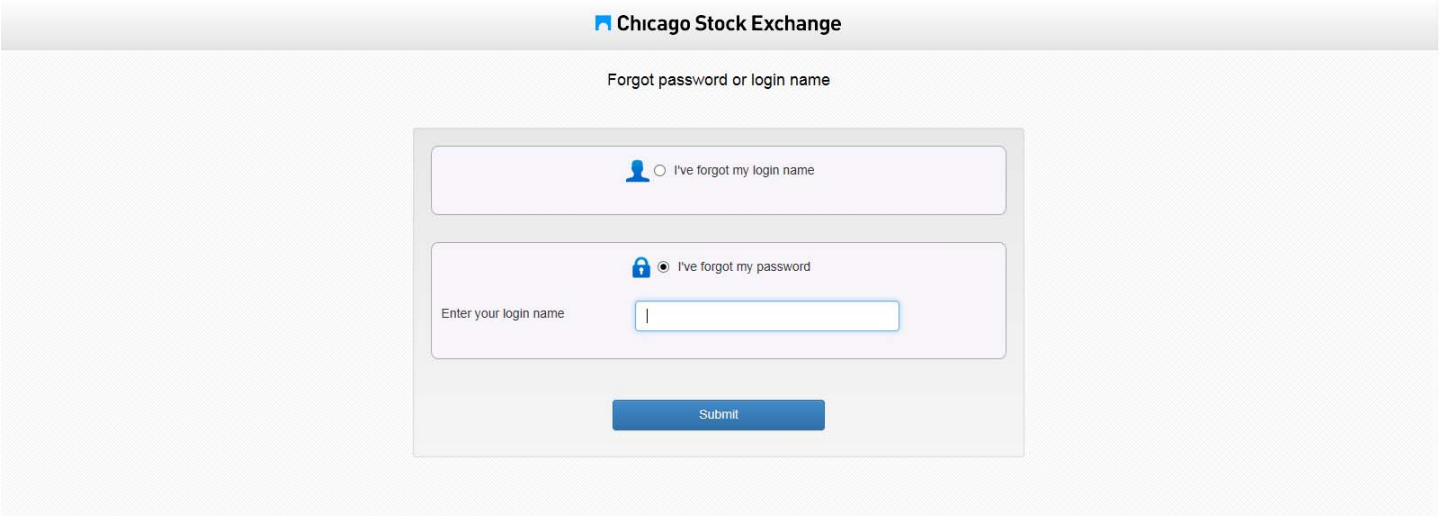
User enters e-mail on the Forgot username or password page

- If the user clicks on the “Submit” button without specifying a email address, a dialog popup with the message “Please enter your email address associated with your account” will be displayed and the user remains on the “Forgot username or password” page.

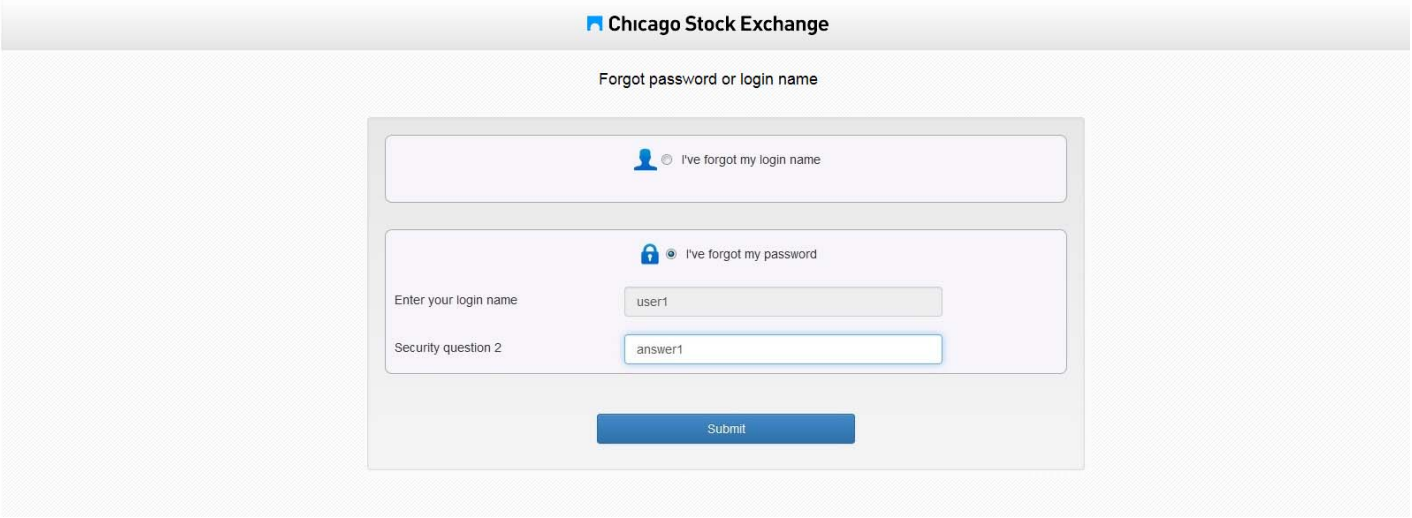
- If entered email address does not match any existing Kill Switch user email accounts, then a dialog popup with the message “The email address provided does not match any Kill Switch user account” will be displayed and the user will remain on the “Forgot username or password” page.

- If entered email address matches the email address on file with their account, an email created and sent to the specified email address containing the user’s username.

- When a user forgets their password, they should select the “I’ve forgot my password” radio button. When selected the user will be prompted to enter their username and answer at least one of the security questions. Once entered, they should click on the “Submit” button to submit the request to the Kill Switch Server.



User enters username on the Forgot username or password page



User enters security answer on the Forgot username or password page

- If the user enters their username and provides a correct answer on at least one of the security questions, an email will be created and sent to the email address associated to their account that contains a Temporary Password. This will be the password the user should use to login. Once the user successfully logs into their account using the Temporary Password they will be required to change their password before accessing any of their account information.

- If the user clicks on the "Submit" button without specifying a username, a dialog popup with the message "Please enter your username associated with your account" will be displayed and the user remains on the "Forgot username or password" page.

- If the user entered a username that is not associated with any Kill Switch user account, a dialog popup with the message "The username entered is not associated with any Kill Switch user account" will be displayed and the user remains on the "Forgot username or password" page. No security questions will be displayed to the user in this case.

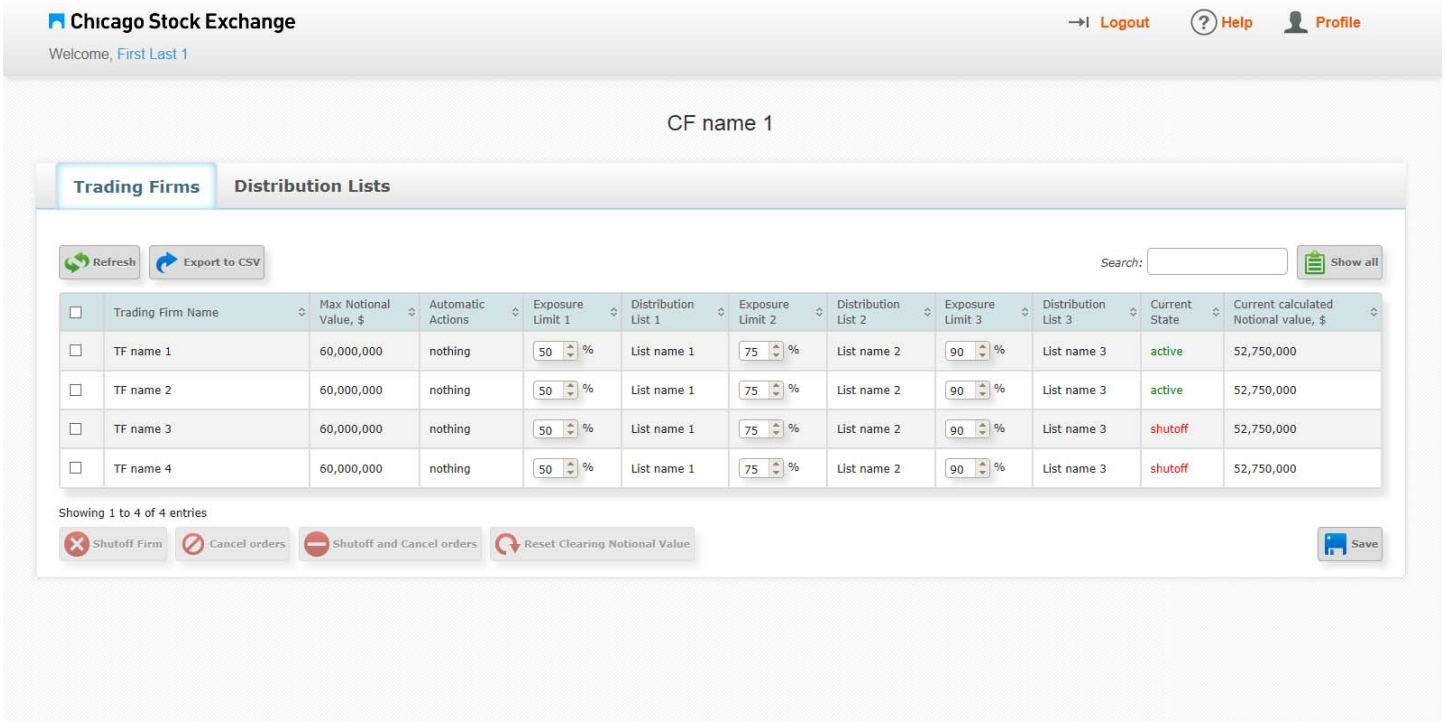
- If the user entered a valid username, the first security question associated with their user account will be displayed. There are up to 4 security questions allowed to be setup for each user account.

- If the user provided an incorrect answer to the first security question and clicks on the "Submit" button, a dialog popup with the message "Your answer is incorrect" will be displayed. If the user has more than one security question defined for their account, the next security question will be displayed. If the last security question is reached and a incorrect answer is provided, the first security question will be displayed again. The user is allowed to fail answering the security question(s) from begin of the question 3 times.

- On the 3rd attempt, if the user provided an incorrect answer to the security question(s), a dialog popup with the message "Your answer is incorrect" will be displayed and will be returned to the main login page.

2. Clearing Firm Home Page

After the user successfully finishes the login process, the UI will display the appropriate Home page based on how the user's account has been setup. If the account was setup as a Clearing Firm account, the UI will display the Clearing Firm Home page.



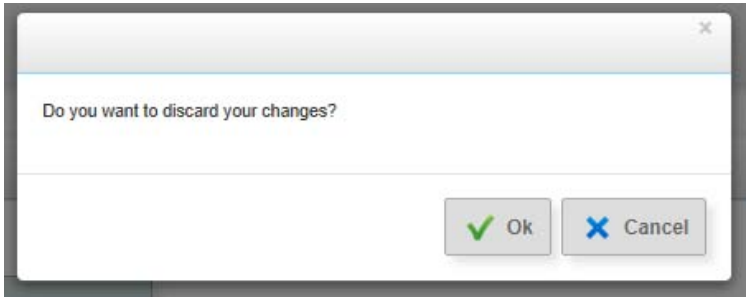
Clearing Firm Home Page

2.1. Clearing Firm Home Page Header.

- The Clearing Firm's full name will be displayed in the page header.

- Logout button

  When selected will log the user out from their current session and the system will go to the Main Login page. If the user had unsaved changes, a dialog popup with a question “Do you want to discard your changes?” will be displayed. If the user confirms the changes should be discarded, they will be logged out. Otherwise the logout operation will not be performed.



Discard changes pop-up

- Help button

  When selected the help content will be displayed in dialog popup window with a description of all available content on the current page.

- Profile button

  When selected the user profile popup screen will be displayed as described in section 8.

2.2. Trading Firms Tab

- Refresh button

  When selected all parameters are loaded from the Kill Switch Server. If user had unsaved changes, a dialog popup with a question "Do you want to discard your changes?" will be displayed. If user confirms that changes will be discarded, the Refresh request will be performed. Otherwise Refresh request operation will not be performed.

- Export to CSV button

  When selected all Clearing Firm parameters for all displayed Trading Firms are exported to a specified CSV file on the user's computer.

- Search

  The user can filter Trading Firms (if their count is greater than one) by providing a pattern to search/filter in Trading Firm parameters. The only Trading Firms that will be displayed are the ones which meet the provided criteria/pattern at the beginning of any word in the string representation of any of its fields. For example, for search criteria/pattern "ab" the following values will be matched: "**ab**c dd", "bb **ab**c", "aab123 **ab**c 456". Numeric values are considered as one word values.

  If the user has provided a criteria/pattern to search/filter by, then a message will notify the user that not all Trading Firms are being displayed.

- Show All

  If user clicks on the "Show all" button, the existing search filter will be removed and all Trading Firms will be displayed.

2.2.1. Trading Firm Parameters

The Clearing Firm Home page displays the Trading Firms that clear through them. Initially there will not be any parameter values defined for any of the Trading Firms. The user must define these values. When the user changes the values for a given field, the field will be displayed in **BOLD** text. This will let the user know which fields have been modified.

- Max Notional Value (in $)

  Max Notional Value is an integer value in range from 1 to 999999999999 inclusive. This field will be comma delimited. If user enters the value which is not in the valid range, a dialog popup with a message "Incorrect value for Max Notional Value, valid range is from [1..10^{12}-1]" will be displayed. Focus is kept on the Max Notional Value field.

- Automatic Actions

  CHX will have a system level control parameter defined that will control if Automatic Actions will be allowed at CHX. If the CHX Automatic Action system parameter is set to TRUE, the Automatic Actions field will be displayed and will be editable. Otherwise the field will not be displayed.

  Automatic Actions field controls what automatic actions/features will be performed if the Max Notional Value is exceeded for a given Trading Firm. The following actions will be displayed in a drop down list:

  - "Notify Only"
  - "Shutoff firm"
  - "Cancel Orders"
  - "Shutoff and Cancel"

- Exposure Limit 1 (in %)

  Exposure Limit 1 is an integer value in range from 1 to 100 and should be less then Exposure Limit 2 and Exposure Limit 3 values (if values are set/present).

  - If user enters a value which is not in range, a dialog popup with a message "Incorrect value for Exposure limit 1, it should be in range from [1, 100]" will be displayed. Focus is kept on the Exposure Limit 1 field.
  - If user enters the value for Exposure Limit 1 greater or equal to the value of either Exposure Limit 2 or Exposure Limit 3, a dialog popup with a message "Exposure Limit 1 value must be less than Exposure Limit 2 & Exposure Limit 3 value" will be displayed. Focus is kept on the Exposure Limit 1.
  - At a minimum a value must be entered in the Exposure Limit 1 field. If the user removes the value for Exposure Limit 1, a dialog popup with a message "Exposure Limit 1 value must be provided" will be displayed. Focus is kept on the Exposure Limit 1 field.

- Distribution List Name 1

  Distribution List Name 1 field is a collection of email address to send to when the Exposure Limit 1 is breached. The user can select from a drop down list of available distribution lists that the Clearing Firm has setup or the user can also set it to a "not set" value which means that no distribution list is associated. This is a required field and a value must be provided.

- Exposure Limit 2 (in %)

  Exposure Limit 2 is an integer value that can be either omitted (only when Exposure Limit 3 value is also omitted) or be greater than the Exposure Limit 1 value but less than the Exposure Limit 3 value (if Exposure Limit 3 value is provided) or up to 100 if Exposure Limit 3 does not have a value.

  - If user enters a value for Exposure Limit 2 less than or equal to the Exposure Limit 1 value, a dialog popup with a message "Exposure Limit 2 value must be greater than Exposure Limit 1 value" will be displayed. Focus is kept on the Exposure Limit 2 field.

  - If user enters a value for Exposure Limit 2 greater than or equal to the value for Exposure Limit 3 (if Exposure Limit 3 is provided), a dialog popup with a message "Exposure Limit 2 value must be less than Exposure Limit 3 value" will be displayed. Focus is kept on the Exposure Limit 2 field.

  - User can remove the value for Exposure Limit 2. This field is not required. If the value for Exposure Limit 2 is removed, the associated Distribution List 2 will also be removed.

- Distribution List Name 2

  Distribution List Name 2 field is a collection of email address to send to when the Exposure Limit 2 is breached. The user can select from a drop down list of available distribution lists that the Clearing Firm has setup or the user can also set it to a "not set" value which means that no distribution list is associated.

- Exposure Limit 3 (in %)

  Exposure Limit 3 is an integer value that can be either omitted or be greater than the Exposure Limit 2 value but not greater than 100.

- If user enters an Exposure Limit 3 value less than or equal to Exposure Limit 1 and Exposure Limit 2 is omitted, a dialog popup with a message "Exposure Limit 3 value should be greater than Exposure Limit 1" will be displayed. Focus is kept on the Exposure Limit 3 field.
- If user enters an Exposure Limit 3 value less than or equal to Exposure Limit 2, a dialog popup with a message "Exposure Limit 3 value should be greater than Exposure Limit 2 value" will be displayed. Focus is kept on the Exposure Limit 3 field.
- User can remove the value of Exposure Limit 3. This field is not required. If the value for Exposure Limit 2 is removed, the associated Distribution List 2 will also be removed.

- Distribution List Name 3

  Distribution List Name 3 field is a collection of email address to send to when the Exposure Limit 3 is breached. The user can select from a drop down list of available distribution lists that the Clearing Firm has setup or the user can also set it to a "not set" value which means that no distribution list is associated.

The following “display only” fields are also on the Clearing Firm Home page:

- Trading Firm Name

  The full Trading Firm’s display name.

- State

  This is the current state that the Trading Firm is in. There are only 2 states possible, Active and Shutoff.

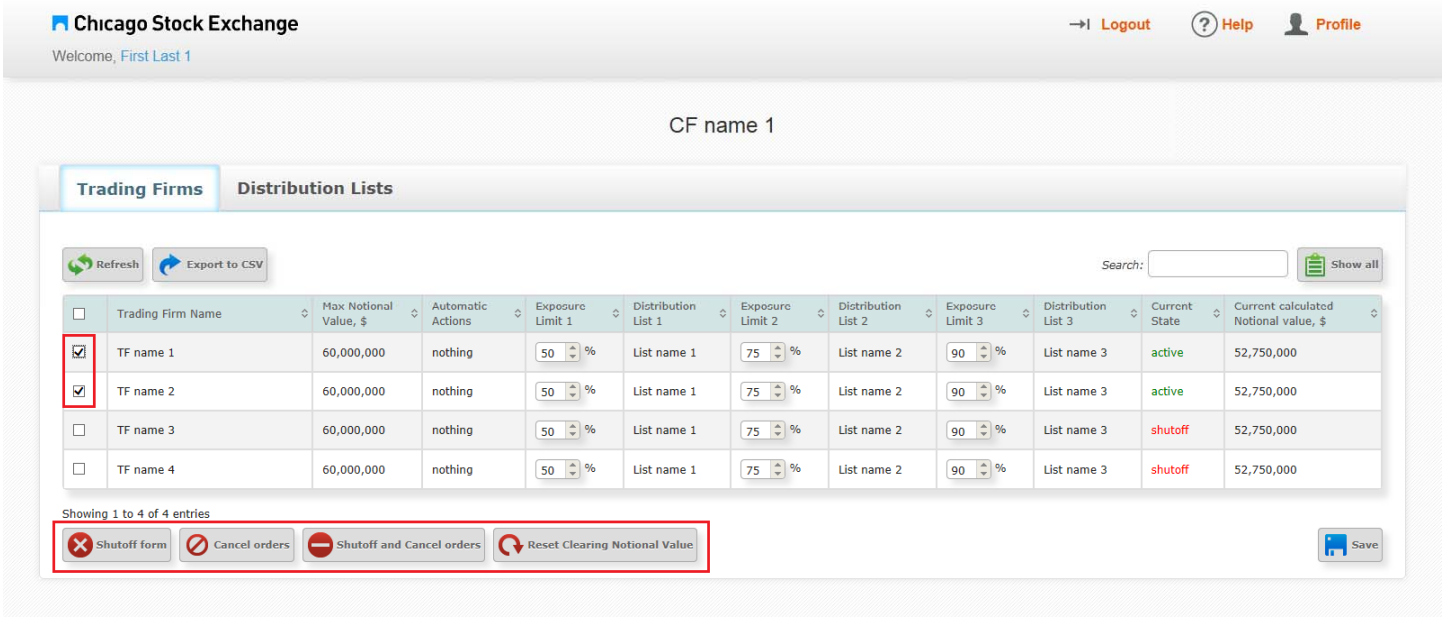
- Current Calculated Notional Value (in $)

  This is the calculated value based on executed Clearing Trade messages. This calculation is done for each Trading Firm.

2.2.2. Manual Actions buttons

User can select one or more Trading Firms to perform the manual action operations. Available operations depend on the state of the selected Trading Firms:

- If none of the Trading Firms are selected, the "Shutoff Firm", "Reset Calculated Notional Value", “Cancel Orders” and “Shutoff Firm and Cancel Orders” buttons are disabled.
- If the selected Trading Firms are in an "active" state, the "Shutoff Firm", " Reset Calculated Notional Value ", "Cancel Orders" and “Shutoff Firm and Cancel Orders” buttons are enabled.



Action buttons enabled when at least one Trading Firm is selected

- If the selected Trading Firms are in a "shutoff" state, the "Shutoff Firm" button changes its label to "Resume Firm". The “Resume Firm”, "Reset Calculated Notional Value" and “Cancel Orders” buttons are enabled. The “Shutoff Firm and Cancel Orders” button is disabled.

- If the selected Trading Firms have both "active" and "shutoff" states, the "Shutoff Form" and “Shutoff Firm and Cancel Orders” buttons are disabled and the "Reset Calculated Notional Value" and “Cancel Orders” buttons are enabled.

- Shutoff Firm button

  If user selects the Shutoff Firm button, then the “Shutoff Firm" request will be issued to the Kill Switch server for each of the selected Trading Firms. The execution sequence is described in 2.2.2.1.

- Resume Firm button

  If user selects the Resume Firm button, then the “Resume Firm" request will be issued to the Kill Switch server for each of the selected Trading Firms. The execution sequence is described in 2.2.2.1.

- Cancel Orders button

  If user selects the Cancel Orders button, then the "Cancel Orders" request will be issued to the Kill Switch server for each of the selected Trading Firms. The execution sequence is described in 2.2.2.1.

- Shutoff Firm and Cancel Orders button

  If user selects the Shutoff Firm and Cancel Orders button, then the "Shutoff Firm and Cancel orders" request will be issued to the Kill Switch server for each of the selected Trading Firms. The execution sequence is described in 2.2.2.1.

- Reset Calculated Net Notional button

  If user selects the Reset Calculated Notional Value button, then the "Reset Calculated Notional Value" request will be issued to the Kill Switch server for each of the selected Trading Firms. The execution sequence is described in 2.2.2.1.

- Save button

  By default the Save button is disabled. When a user changes the value for any parameter and the value is different from the last saved value, the "Save" button is then enabled.

  If the Save button is in an enabled state and the user selects it, the user will also be prompted to enter their password as validation before the save operation is performed. If a valid password was entered, then all changes are saved to Kill Switch server.

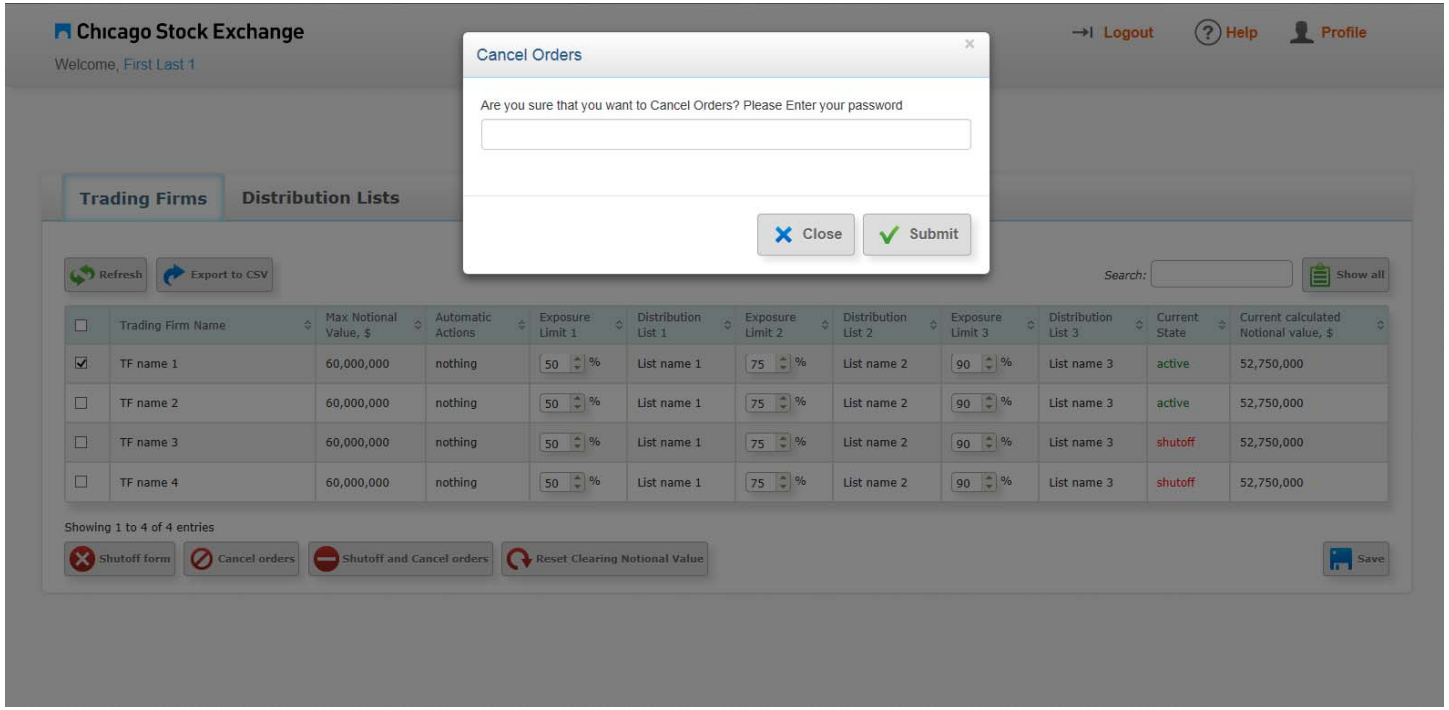
  - If all changes were saved successfully, a dialog popup with a message "All changes are successfully saved" will be displayed and then the view is refreshed (No parameter values should be in bold font). The Save button will be disabled after operation.

  - If changes are not saved successfully, a dialog popup with a message "Error occurred with save request" will be displayed plus the possible reason of the failure. The view is not refreshed, so the user can continue editing and will not lose their changes. Save button will remain enabled.

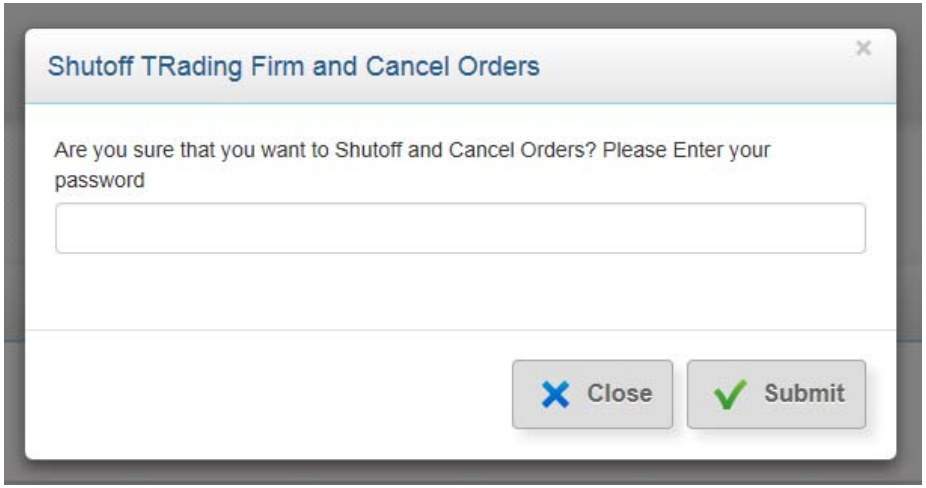
2.2.2.1. Execution Sequence

When any of the "Shutoff Firm", "Resume Firm", “Cancel orders”, “Shutoff Firm and Cancel Orders” or "Reset Calculated Notional Value" buttons is selected, then the following sequence of actions will be performed:

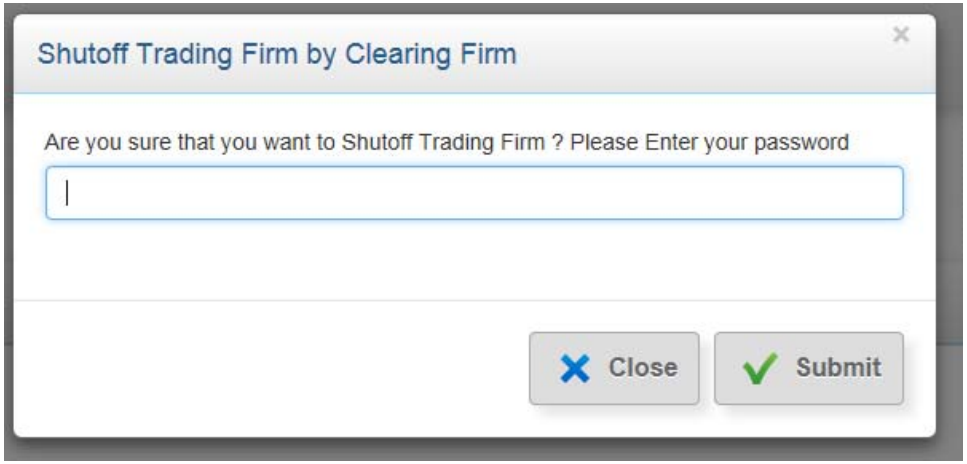
- A dialog popup is displayed for the appropriate user request, requiring the user to enter their account password. If user entered an incorrect password, a corresponding message informs them that the password enter is incorrect and user will remain inside the same dialog popup. If the user enters a correct password, the request will be forwarded to the Kill Switch server for processing.



Clearing Firm Cancel Orders confirmation pop-up



Shutoff Firm and Cancel Orders Confirmation pop-up



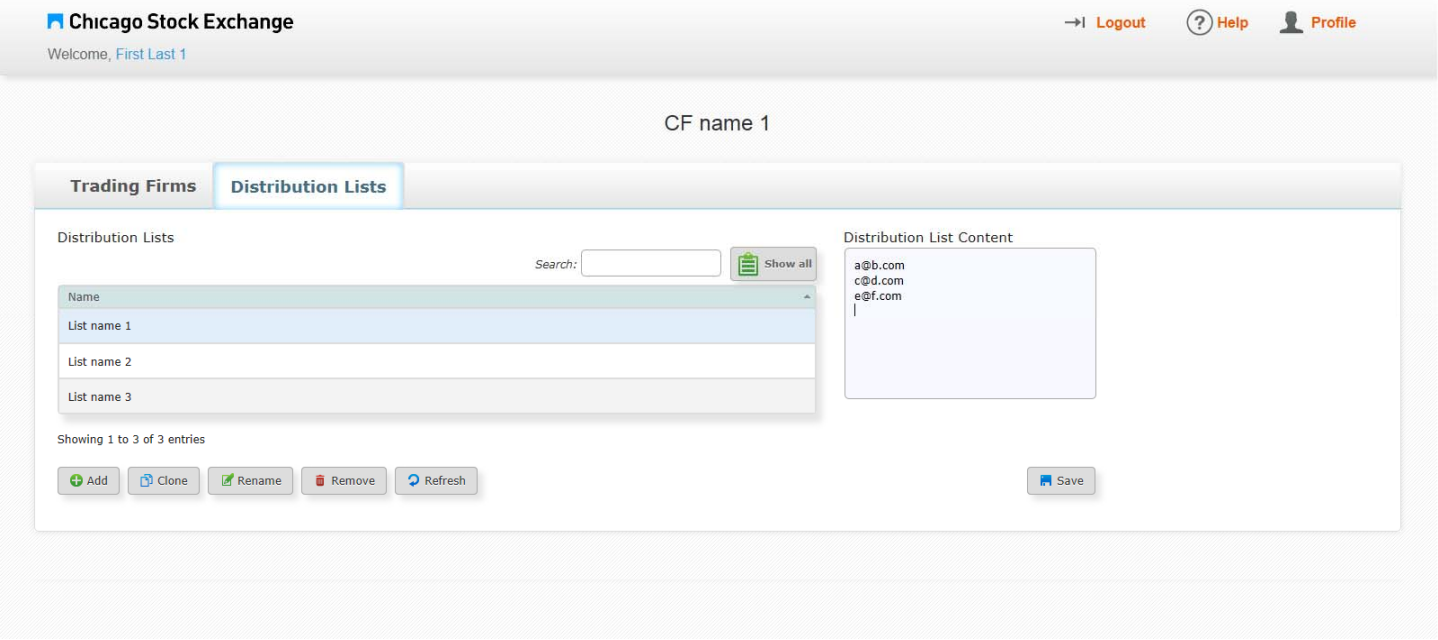
Shutoff Firm Confirmation pop-up

2.3. Distribution Lists Tab

- When user clicks on "Distribution Lists" tab, the Clearing Firm Distribution Lists page will be displayed. If user had unsaved changes on the Trading Firms tab, a dialog with a question "Do you want to discard your changes?" will be displayed. If user confirms that the changes will be discarded, the Clearing Firm Distribution Lists page will be displayed. Otherwise the user will remain on the Trading Firms page. See section 3 for further details about the Clearing Distribution Lists page.

3. Clearing Firm Distribution List Page

When the user selects the Clearing Firms Distribution List tab, all defined Clearing Firm Distribution Lists are displayed.



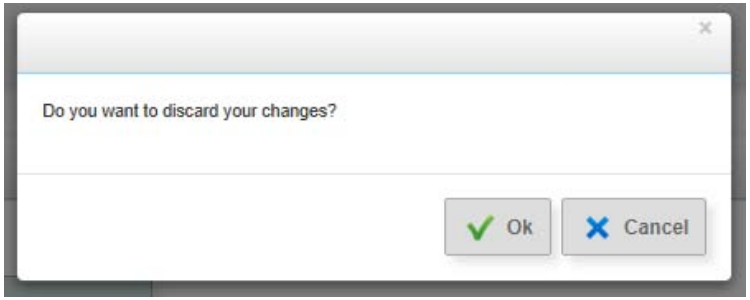
Clearing firm Distribution List page

3.1. Clearing Firm Distribution List Page Header

- The Clearing Firm's full name will be displayed in the page header.
- If user clicks on "Help" button then help content will be displayed in dialog popup window with a description of all available user action on given page.

- Logout button

  When selected will log the user out from their current session and the system will go to the Main Login page. If the user had unsaved changes, a dialog popup with a question “Do you want to discard your changes?” will be displayed. If the user confirms the changes should be discarded, they will be logged out. Otherwise the logout operation will not be performed.



Discard changes pop-up

- Help button

  When selected the help content will be displayed in dialog popup window with a description of all available content on the current page.

- Profile button

  When selected the user profile popup screen will be displayed as described in section 8.

3.2. Distribution List Information

- When a Distribution List Name is selected from the list, its distribution list content is shown in the Distribution List Content area.

- When a Distribution List Name is unselected, the Distribution List Content area will be empty.

- When the user makes changes to the Distribution List Content and then unselects the given Distribution List Name, a dialog popup with confirmation “Do you want to discard your changes?” will be displayed. If the user confirms, then all

changes are lost and the content is no longer displayed. If the user does not confirm, the Distribution List Name will not be unselected and Distribution List Content area with content remains as the focus.

- When the user makes changes to the Distribution List Content and clicks on any action/operation besides “Save” or “Help”, a dialog popup with confirmation “Do you want to discard your changes?” will be displayed. If the user confirms, then all changes are lost and the action/operation is performed with old Distribution List Content. If the user does not confirm, the Distribution List Content area with content remains the focus and the action/operation is not performed.

- The user can sort list Distribution List Names in alphabetic order and reversed by clicking on list header. Each click toggles the order direction.

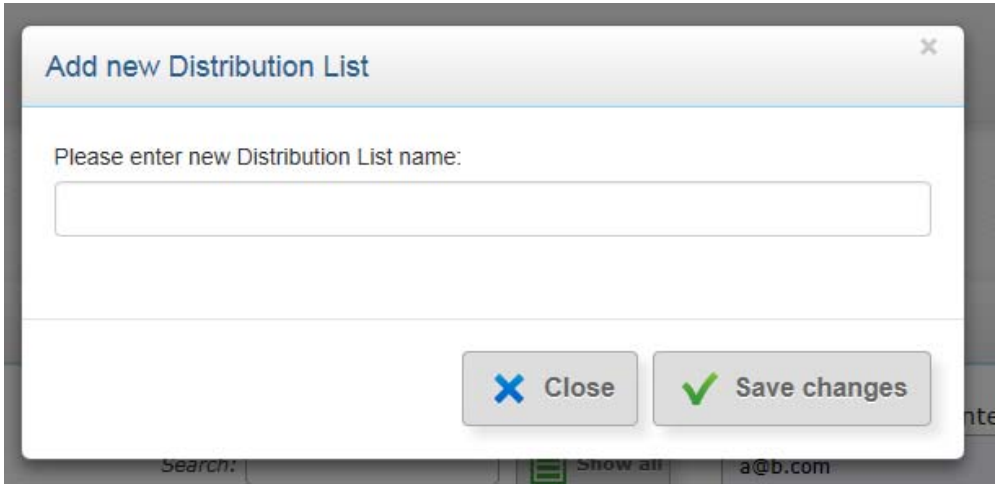
- A user can search a desired Distribution List Name by entering a pattern/criteria in the search box. Only those Distribution Lists Names are displayed which contain the provided pattern/criteria as a substring. If a search pattern is applied and not all Distribution List Names are displayed, a text message “Showing xxx to yyy of zzz entries (filtered from NNN total entries)” is displayed to the user.

- The user can clear the search pattern/criteria and show all Distribution List Names by clicking on the “Show all” button.

3.2.1. Manual Actions buttons

- Add button

  When the user clicks on the “Add” button, a dialog popup with a prompt to enter a new Distribution List Name is displayed.

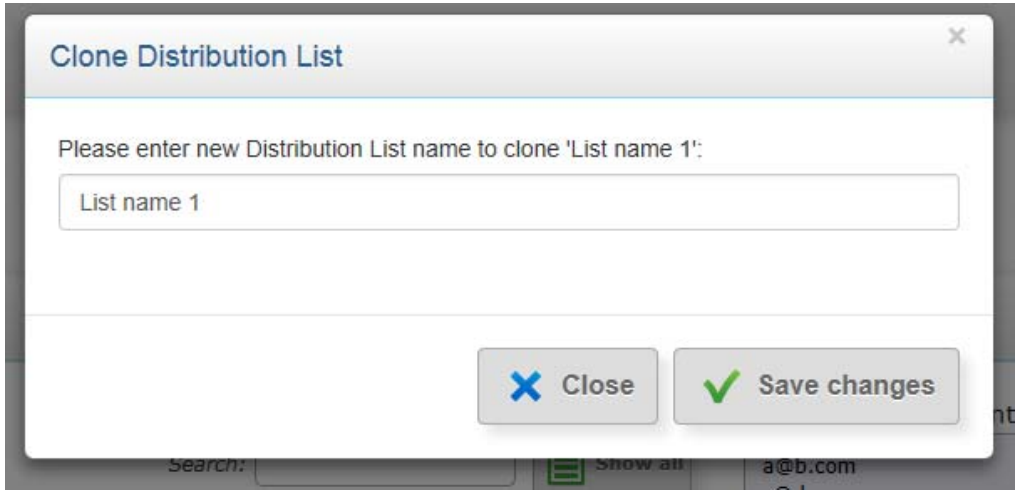


Add new Distribution list pop-up

- If the user had unsaved changes, a dialog popup with a question "Do you want to discard your changes?" is displayed. If the user confirm, the changes will be discarded. Otherwise the operation will not be performed.
- If the user clicks on the “Close” button, the popup is removed and no operation is made.
- If the user enters an empty Distribution List Name and clicks on the “Add” button, the dialog popup remains open and no operation will be performed until the user either enters a non-empty name or clicks on cancel button.
- If the user enters a Distribution List Name and clicks on the “Add” button, the request to add new list is send to Kill Switch Server. If the Server returns a successful status, the list of Distribution List Names is refreshed, the newly added Distribution List Name is selected and the content area will be the focus. If the server returns an error status, a dialog popup with a message that the Distribution List Name was not added and a possible reason (obtained from server) will be displayed.

- Clone button

When the user clicks on the “Clone” button, a dialog popup with a prompt for new Distribution List Name is displayed. The “Clone” button is enabled only when a Distribution List Name is selected from the list.



Clone Distribution list pop-up

- If the user had unsaved changes, a dialog popup with a question "Do you want to discard your changes?" is displayed. If the user confirm, the changes will be discarded. Otherwise the operation will not be performed.

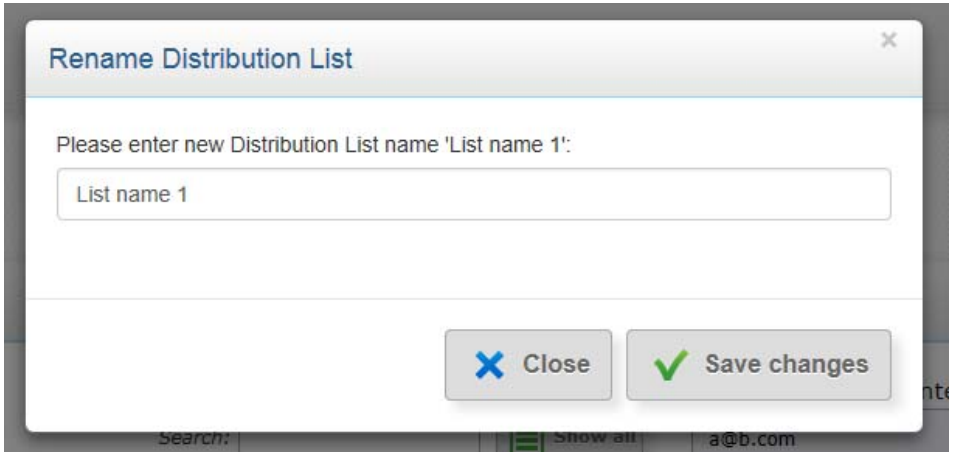
- If the user clicks on the “Cancel” button, the popup is removed and no operation is made.

- If the user enters an empty Distribution List Name and clicks on the “Clone” button, the dialog popup remains open and no operation will be performed until the user either enters a non-empty name or clicks on cancel button.

- If the user enters a Distribution List Name and clicks on the “Clone” button, the request to clone the specified Distribution List Name is send to Kill Switch Server. If the Server returns a successful status, the list of Distribution List Names is refreshed, the newly cloned Distribution List Name is selected and the content area will be the focus. If the server returns an error status, a dialog popup with a message that the Distribution List Name was not cloned and a possible reason (obtained from server) will be displayed.

- Rename button

  When the user clicks on the “Rename” button, a dialog popup with a prompt to enter a new proposed Distribution List Name for the selected Distribution List Name will be displayed. The “Rename” button is enabled only when a Distribution List Name is selected from the list.



Rename Distribution List Name pop-up

  - o If the user had unsaved changes, a dialog popup with a question "Do you want to discard your changes?" is displayed. If the user confirm, the changes will be discarded. Otherwise the operation will not be performed.

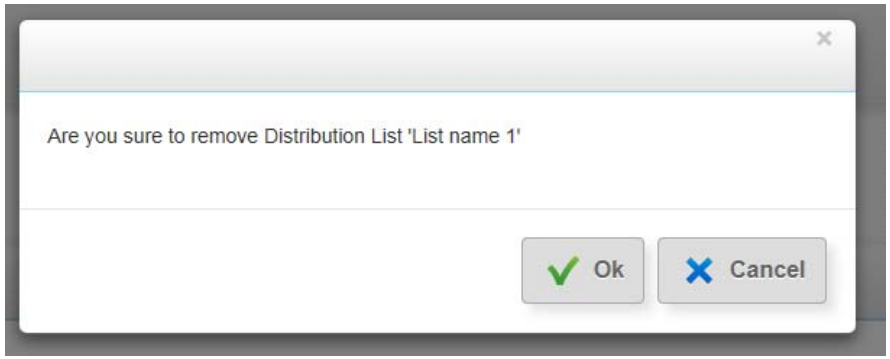
  - o If the user clicks on the “Cancel” button, the popup is removed and no operation is made.

  - o If the user enters an empty Distribution List Name and clicks on the “Rename” button, the dialog popup remains open and no operation will be performed until the user either enters a non-empty name or clicks on cancel button.

- If the user enters a Distribution List Name and clicks on the “Rename” button, the request to rename the specified Distribution List Name is send to Kill Switch Server. If the Server returns a successful status, the list of Distribution List Names is refreshed, the newly renamed Distribution List Name is selected and the content area will be the focus. If the server returns an error status, a dialog popup with a message that the Distribution List Name was not renamed and a possible reason (obtained from server) will be displayed.

- Remove button

When the user clicks on the “Remove” button, a dialog popup with a confirmation message “Are you sure to remove Distribution List <list name>?” will be displayed. The “Remove” button is enabled only when an Distribution List Name is selected from the list.



Remove Distribution List Name confirmation message

- If the user had unsaved changes, a dialog popup with a question "Do you want to discard your changes?" is displayed. If the user confirm, the changes will be discarded. Otherwise the operation will not be performed.

- If the user clicks on the “Cancel” button, the popup is removed and no operation is made.

- If the user clicks on the “Ok” button inside the dialog popup, the user will also be prompted to enter their password as validation before the save operation is performed. If a valid password was provided, the request to remove the specified Distribution List Name is send to Kill Switch Server. If the Server returns a successful status, the list of Distribution List Names is refreshed, the first Distribution List Name (if any) is selected. If the server returns an error status, a dialog popup with a message that the Distribution List Name was not removed and a possible reason (obtained from server) will be displayed.

- Refresh button

  If the user clicks on the "Refresh" button, all Distribution List Names are loaded from Kill Switch Server.

  - If the user had unsaved changes, a dialog popup with a question "Do you want to discard your changes?" is displayed. If the user confirm, the changes will be discarded. Otherwise the operation will not be performed.

- Save button

  By default the “Save” button is disabled. It becomes enabled when the Distribution List content is changed. When the user clicks on the “Save” button, the user will also be prompted to enter their password as validation before the save operation is performed. If a valid password was entered, the Distribution List content is submitted to the Kill Switch Server.

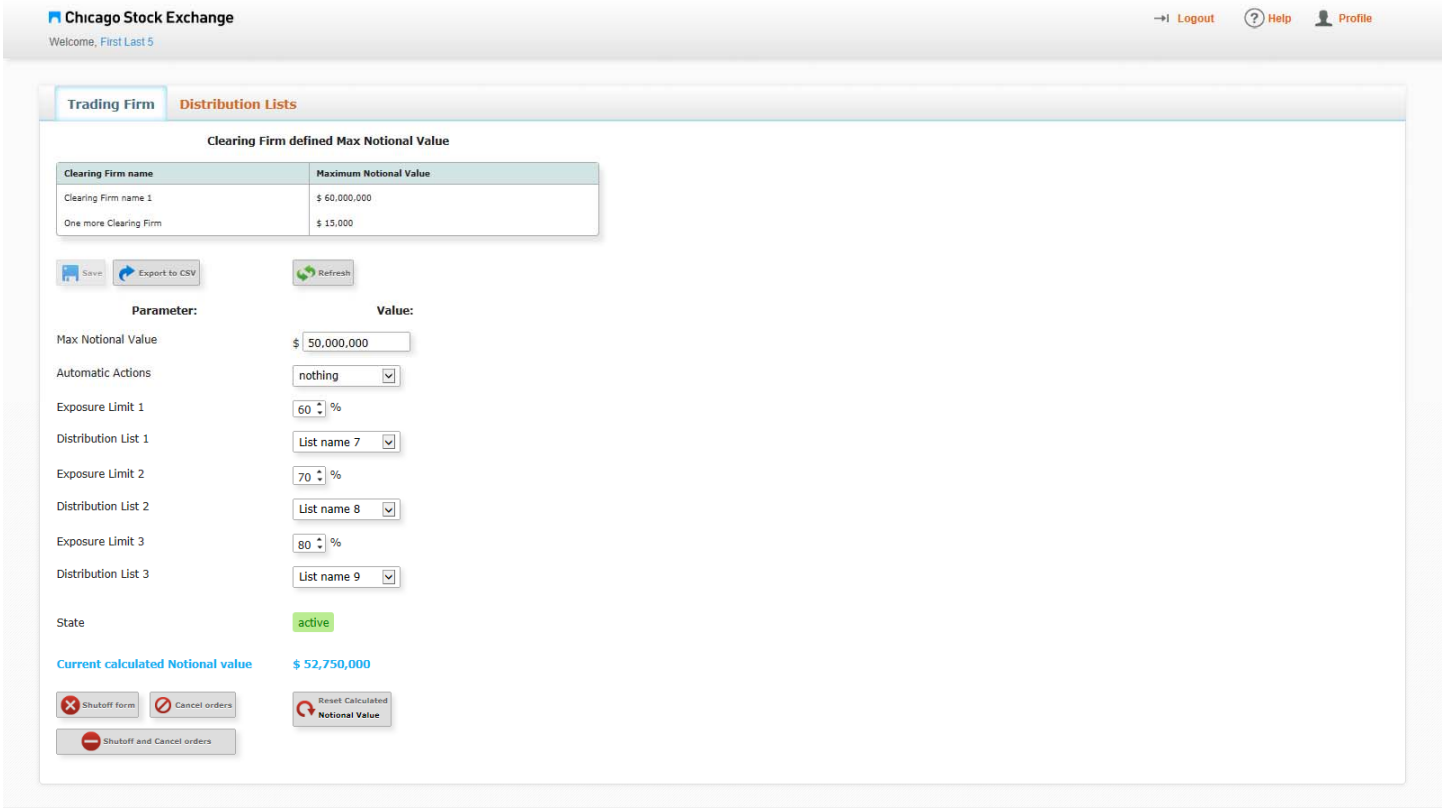
  - If the content is valid and the Kill Switch Server accepts the changes, a dialog popup with a message “Distribution Lists content is successfully updated” will be displayed. The “Save” button becomes disabled.
  - If the content is incorrect, a dialog popup with a message “Can’t update Distribution Lists” will be displayed. The reason why it could not be saved will also be displayed. The “Save” button remains enabled.

- The Kill Switch Server will check email format using the following rules:
  - The format of the email addresses is local-part@domain, where the local-part may be up to 64 characters long and the domain name may have a maximum of 254 characters.
  - The local-part of the email address may use any of these ASCII characters.
    - Uppercase and lowercase English letters (a–z, A–Z) (ASCII: 65–90, 97–122).
    - Digits 0 to 9 (ASCII: 48–57).
    - Characters !#$%&'*+-/=?^_`{|}~ (ASCII: 33, 35–39, 42, 43, 45, 47, 61, 63, 94–96, 123–126).
    - Character . (dot, period, full stop) (ASCII: 46) provided that it is not the first or last character, and it does not appear two or more times consecutively (e.g. John..Doe@example.com is not allowed.).
  - The domain name part of an email address must match the requirements for a hostname, consisting of letters, digits, hyphens and dots.

- When the user clicks back on the “Trading Firms” tab, the Clearing Firm home page with refreshed parameters reflecting the possible changes in Distribution Lists Names will be displayed.

4. Trading Firm Home Page

After the user successfully finishes the login process, the UI will display the appropriate Home page based on how the user's account has been setup. If the account was setup as a Trading Firm account, the UI will display the Trading Firm Home page.

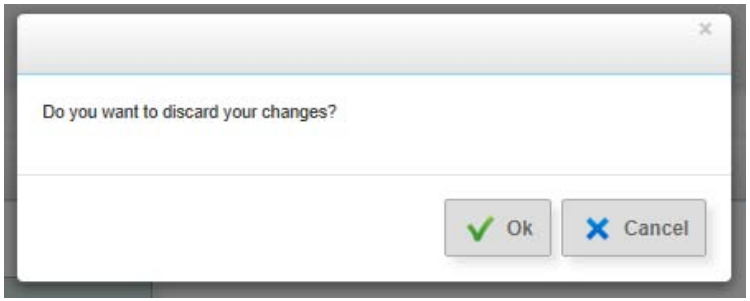


Trading Firm home page

4.1. Trading Firm Home Page Header

- Logout button

  When selected will log the user out from their current session and the system will go to the Main Login page. If the user had unsaved changes, a dialog popup with a question “Do you want to discard your changes?” will be displayed. If the user confirms the changes should be discarded, they will be logged out. Otherwise the logout operation will not be performed.



Discard changes pop-up

- Help button

  When selected the help content will be displayed in dialog popup window with a description of all available content on the current page.

- Profile button

  When selected the user profile popup screen will be displayed as described in section 8.

4.2. Trading Firm Tab

If a Clearing Firm has setup Kill Switch parameters for the Trading Firm, the Clearing Firm Name and the Maximum Notional value they defined will be displayed in a grid at the top of the screen. If there are no Clearing Firm parameters defined for this trading Firm, the grid will not be displayed.

- Save button

  By default the Save button is disabled. When a user changes the value for any parameter and the value is different from the last saved value, the "Save" button is then enabled.

  If the Save button is in an enabled state and the user selects it, the user will also be prompted to enter their password as validation before the save operation is performed. If a valid password was entered, then all changes are saved to Kill Switch server.

  - If all changes were saved successfully, a dialog popup with a message "All changes are successfully saved" will be displayed and then the view is refreshed (No parameter values should be in bold font). The Save button will be disabled after operation.

  - If changes are not saved successfully, a dialog popup with a message "Error occurred with save request" will be displayed plus the possible reason of the failure. The view is not refreshed, so the user can continue editing and will not lose their changes. Save button will remain enabled.

- Refresh button

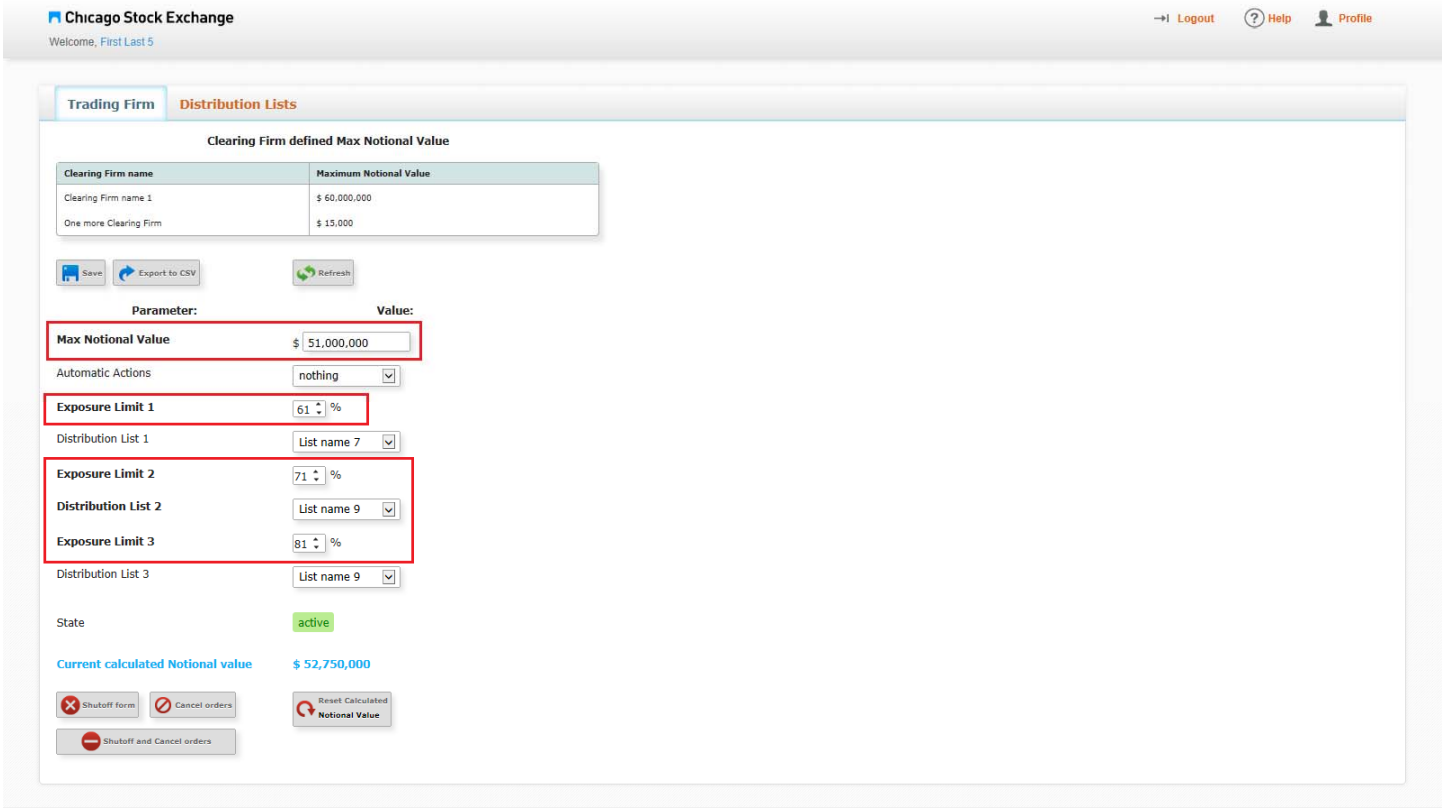
  When selected all parameters are loaded from the Kill Switch Server. If user had unsaved changes, a dialog popup with a question "Do you want to discard your changes?" will be displayed. If user confirms that changes will be discarded, the Refresh request will be performed. Otherwise Refresh request operation will not be performed.

- Export to CSV button

  When selected all Trading Firm parameters are exported to a specified CSV file on the user's computer.

4.2.1. Trading Firm Parameters

Initially there will not be any parameter values defined for the Trading Firm. The user must define these values. When the user changes the values for a given field, the field will be displayed in **BOLD** text. This will let the user know which fields have been modified.



Changed values are shown in a bold font

- Max Notional Value (in $)

  Max Notional Value is an integer value in range from 1 to 999999999999 inclusive. This field will be comma delimited. If user enters the value which is not in the valid range, a dialog popup with a message "Incorrect value for Max Notional Value, valid range is from [1..10^{12}-1]" will be displayed. Focus is kept on the Max Notional Value field.

- Automatic Actions

  CHX will have a system level control parameter defined that will control if Automatic Actions will be allowed at CHX. If the CHX Automatic Action system parameter is set to TRUE, the Automatic Actions field will be displayed and will be editable. Otherwise the field will not be displayed.

  Automatic Actions field controls what automatic actions/features will be performed if the Max Notional Value is exceeded for a given Trading Firm. The following actions will be displayed in a drop down list:

  - "Notify Only"
  - "Shutoff firm"
  - "Cancel Orders"
  - "Shutoff and Cancel"

- Exposure Limit 1 (in %)

  Exposure Limit 1 is an integer value in range from 1 to 100 and should be less then Exposure Limit 2 and Exposure Limit 3 values (if values are set/present).

  - If user enters a value which is not in range, a dialog popup with a message "Incorrect value for Exposure limit 1, it should be in range from [1, 100]" will be displayed. Focus is kept on the Exposure Limit 1 field.
  - If user enters the value for Exposure Limit 1 greater or equal to the value of either Exposure Limit 2 or Exposure Limit 3, a dialog popup with a message "Exposure Limit 1 value must be less than Exposure Limit 2 & Exposure Limit 3 value" will be displayed. Focus is kept on the Exposure Limit 1.
  - At a minimum a value must be entered in the Exposure Limit 1 field. If the user removes the value for Exposure Limit 1, a dialog popup with a message "Exposure Limit 1 value must be provided" will be displayed. Focus is kept on the Exposure Limit 1 field.

- Distribution List Name 1

  Distribution List Name 1 field is a collection of email address to send to when the Exposure Limit 1 is breached. The user can select from a drop down list of available distribution lists that the Clearing Firm has setup or the user can also set it to a "not set" value which means that no distribution list is associated. This is a required field and a value must be provided.

- Exposure Limit 2 (in %)

  Exposure Limit 2 is an integer value that can be either omitted (only when Exposure Limit 3 value is also omitted) or be greater than the Exposure Limit 1 value but less than the Exposure Limit 3 value (if Exposure Limit 3 value is provided) or up to 100 if Exposure Limit 3 does not have a value.

  - If user enters a value for Exposure Limit 2 less than or equal to the Exposure Limit 1 value, a dialog popup with a message "Exposure Limit 2 value must be greater than Exposure Limit 1 value" will be displayed. Focus is kept on the Exposure Limit 2 field.

  - If user enters a value for Exposure Limit 2 greater than or equal to the value for Exposure Limit 3 (if Exposure Limit 3 is provided), a dialog popup with a message "Exposure Limit 2 value must be less than Exposure Limit 3 value" will be displayed. Focus is kept on the Exposure Limit 2 field.

  - User can remove the value for Exposure Limit 2. This field is not required. If the value for Exposure Limit 2 is removed, the associated Distribution List 2 will also be removed.

- Distribution List Name 2

  Distribution List Name 2 field is a collection of email address to send to when the Exposure Limit 2 is breached. The user can select from a drop down list of available distribution lists that the Clearing Firm has setup or the user can also set it to a "not set" value which means that no distribution list is associated.

- Exposure Limit 3 (in %)

  Exposure Limit 3 is an integer value that can be either omitted or be greater than the Exposure Limit 2 value but not greater than 100.

- If user enters an Exposure Limit 3 value less than or equal to Exposure Limit 1 and Exposure Limit 2 is omitted, a dialog popup with a message "Exposure Limit 3 value should be greater than Exposure Limit 1" will be displayed. Focus is kept on the Exposure Limit 3 field.
- If user enters an Exposure Limit 3 value less than or equal to Exposure Limit 2, a dialog popup with a message "Exposure Limit 3 value should be greater than Exposure Limit 2 value" will be displayed. Focus is kept on the Exposure Limit 3 field.
- User can remove the value of Exposure Limit 3. This field is not required. If the value for Exposure Limit 2 is removed, the associated Distribution List 2 will also be removed.

- Distribution List Name 3

  Distribution List Name 3 field is a collection of email address to send to when the Exposure Limit 3 is breached. The user can select from a drop down list of available distribution lists that the Clearing Firm has setup or the user can also set it to a "not set" value which means that no distribution list is associated.

The following “display only” fields are also on the Trading Firm Home page:

- State

  This is the current state that the Trading Firm is in. There are only 2 states possible, Active and Shutoff.

- Current Calculated Notional Value (in $)

  This is the calculated value based on executed Clearing Trade messages for the Trading Firm.

4.2.2. Manual Actions buttons

Available operations depend on the state of the Trading Firm:

- By default the "Shutoff Firm", "Reset Calculated Notional Value", “Cancel Orders” and “Shutoff Firm and Cancel Orders” buttons are disabled.
- If the Trading Firm is in an "active" state, the "Shutoff Firm", " Reset Calculated Notional Value ", "Cancel Orders" and “Shutoff Firm and Cancel Orders” buttons are enabled.

- If the Trading Firm is in a "shutoff" state, the "Shutoff Firm" button changes its label to "Resume Firm". The “Resume Firm”, "Reset Calculated Notional Value" and “Cancel Orders” buttons are enabled. The “Shutoff Firm and Cancel Orders” button is disabled.

- Shutoff Firm button

  If user selects the Shutoff Firm button, then the “Shutoff Firm" request will be issued to the Kill Switch server for each of the selected Trading Firms. The execution sequence is described in 2.2.2.1.

- Resume Firm button

  If user selects the Resume Firm button, then the “Resume Firm" request will be issued to the Kill Switch server for each of the selected Trading Firms. The execution sequence is described in 2.2.2.1.

- Cancel Orders button

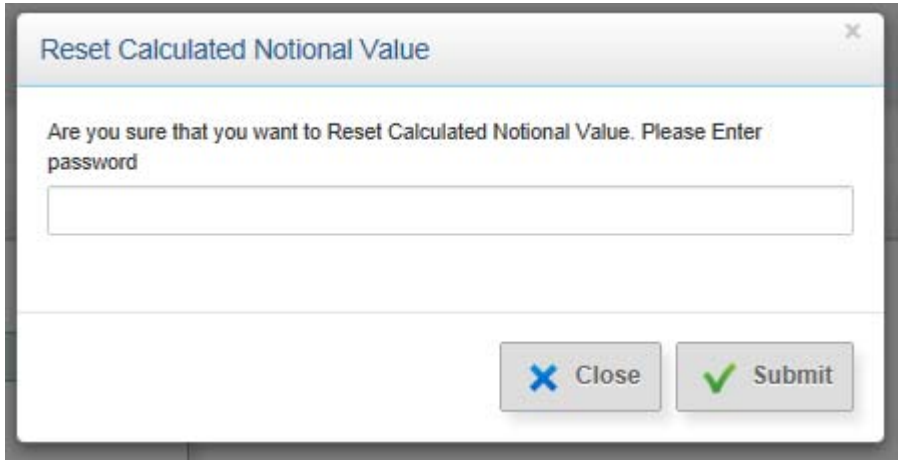
  If user selects the Cancel Orders button, then the "Cancel Orders" request will be issued to the Kill Switch server for each of the selected Trading Firms. The execution sequence is described in 2.2.2.1.

- Shutoff Firm and Cancel Orders button

  If user selects the Shutoff Firm and Cancel Orders button, then the "Shutoff Firm and Cancel orders" request will be issued to the Kill Switch server for each of the selected Trading Firms. The execution sequence is described in 2.2.2.1.

- Reset Calculated Net Notional button

  If user selects the Reset Calculated Notional Value button, then the "Reset Calculated Notional Value" request will be issued to the Kill Switch server for each of the selected Trading Firms. The execution sequence is described in 2.2.2.1.



Reset notional value confirmation pop-up

4.2.2.1. Execution Sequence

When any of the "Shutoff Firm", "Resume Firm", “Cancel orders”, “Shutoff Firm and Cancel Orders” or "Reset Calculated Notional Value" buttons is selected, then the following sequence of actions will be performed:

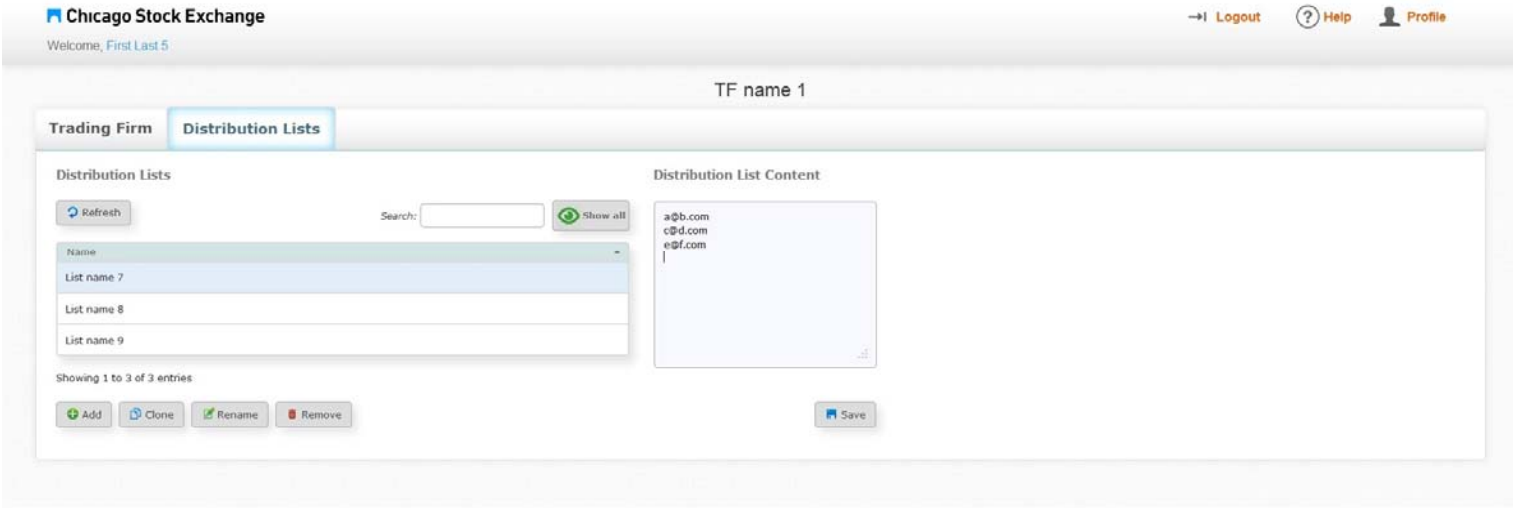
- A dialog popup is displayed for the appropriate user request, requiring the user to enter their account password. If user entered an incorrect password, a corresponding message informs them that the password enter is incorrect and user will remain inside the same dialog popup. If the user enters a correct password, the request will be forwarded to the Kill Switch server for processing.

4.3. Distribution Lists Tab

- When user clicks on "Distribution Lists" tab, the Trading Firm Distribution Lists page will be displayed. If user had unsaved changes on the Trading Firm tab, a dialog with a question "Do you want to discard your changes?" will be displayed. If user confirms that the changes will be discarded, the Trading Firm Distribution Lists page will be displayed. Otherwise the user will remain on the Trading Firms page. See section 5 for further details about the Trading Distribution Lists page.

5. Trading Firm Distribution List Page

When the user selects the Trading Firm Distribution List tab, all defined Trading Firm Distribution Lists are displayed.



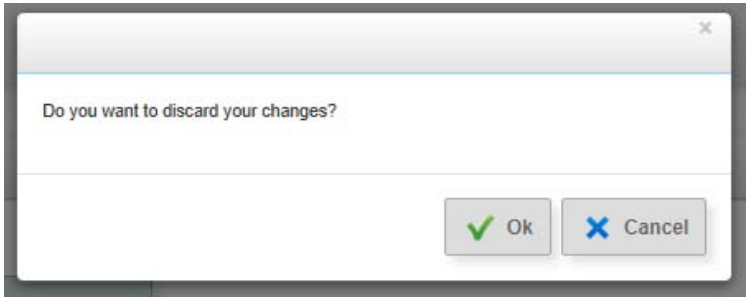
Trading Firm Distribution List page

5.1. Trading Firm Distribution List Page Header

- The Trading Firm's full name will be displayed in the page header.
- If user clicks on "Help" button then help content will be displayed in dialog popup window with a description of all available user action on given page.

- Logout button

  When selected will log the user out from their current session and the system will go to the Main Login page. If the user had unsaved changes, a dialog popup with a question “Do you want to discard your changes?” will be displayed. If the user confirms the changes should be discarded, they will be logged out. Otherwise the logout operation will not be performed.



Discard changes pop-up

- Help button

  When selected the help content will be displayed in dialog popup window with a description of all available content on the current page.

- Profile button

  When selected the user profile popup screen will be displayed as described in section 8.

5.2. Distribution List Information

- When a Distribution List Name is selected from the list, its distribution list content is shown in the Distribution List Content area.

- When a Distribution List Name is unselected, the Distribution List Content area will be empty.

- When the user makes changes to the Distribution List Content and then unselects the given Distribution List Name, a dialog popup with confirmation “Do you want to discard your changes?” will be displayed. If the user confirms, then all changes are lost and the content is no longer displayed. If the user does not confirm, the Distribution List Name will not be unselected and Distribution List Content area with content remains as the focus.

- When the user makes changes to the Distribution List Content and clicks on any action/operation besides “Save” or “Help”, a dialog popup with confirmation “Do you want to discard your changes?” will be displayed. If the user confirms, then all changes are lost and the action/operation is performed with old Distribution List Content. If the user does not confirm, the Distribution List Content area with content remains the focus and the action/operation is not performed.

- The user can sort list Distribution List Names in alphabetic order and reversed by clicking on list header. Each click toggles the order direction.

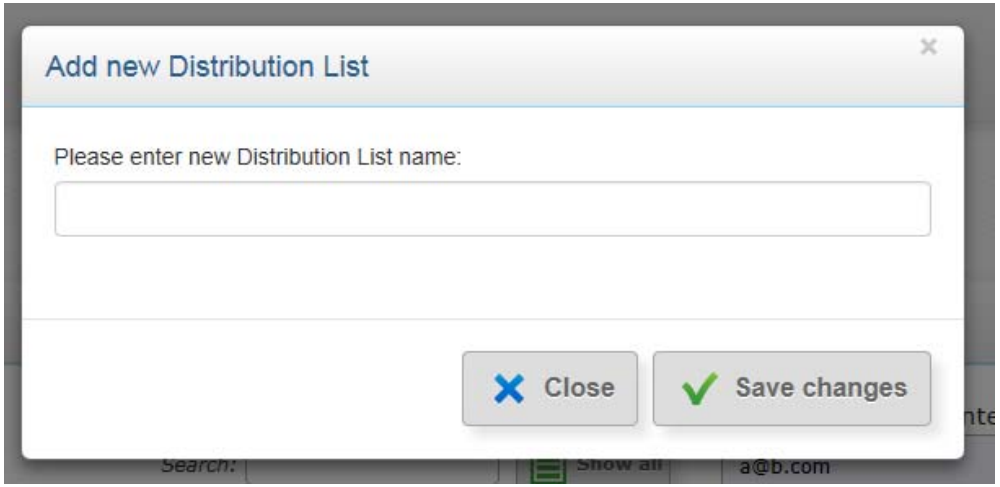
- A user can search a desired Distribution List Name by entering a pattern/criteria in the search box. Only those Distribution Lists Names are displayed which contain the provided pattern/criteria as a substring. If a search pattern is applied and not all Distribution List Names are displayed, a text message “Showing xxx to yyy of zzz entries (filtered from NNN total entries)” is displayed to the user.

- The user can clear the search pattern/criteria and show all Distribution List Names by clicking on the “Show all” button.

5.2.1. Manual Actions buttons

- Add button

  When the user clicks on the “Add” button, a dialog popup with a prompt to enter a new Distribution List Name is displayed.

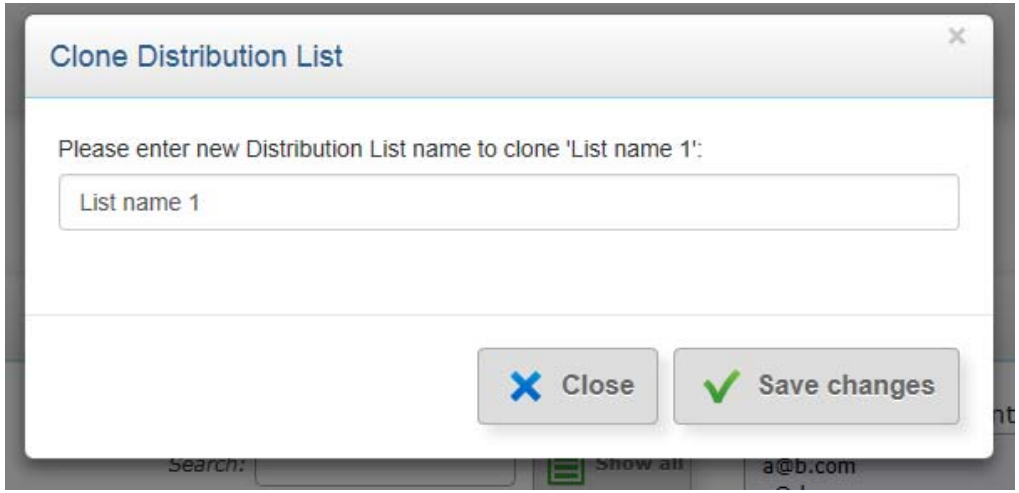


Add new Distribution list pop-up

- If the user had unsaved changes, a dialog popup with a question "Do you want to discard your changes?" is displayed. If the user confirm, the changes will be discarded. Otherwise the operation will not be performed.
- If the user clicks on the “Close” button, the popup is removed and no operation is made.
- If the user enters an empty Distribution List Name and clicks on the “Add” button, the dialog popup remains open and no operation will be performed until the user either enters a non-empty name or clicks on cancel button.
- If the user enters a Distribution List Name and clicks on the “Add” button, the request to add new list is send to Kill Switch Server. If the Server returns a successful status, the list of Distribution List Names is refreshed, the newly added Distribution List Name is selected and the content area will be the focus. If the server returns an error status, a dialog popup with a message that the Distribution List Name was not added and a possible reason (obtained from server) will be displayed.

- Clone button

When the user clicks on the “Clone” button, a dialog popup with a prompt for new Distribution List Name is displayed. The “Clone” button is enabled only when a Distribution List Name is selected from the list.



Clone Distribution list pop-up

- If the user had unsaved changes, a dialog popup with a question "Do you want to discard your changes?" is displayed. If the user confirm, the changes will be discarded. Otherwise the operation will not be performed.

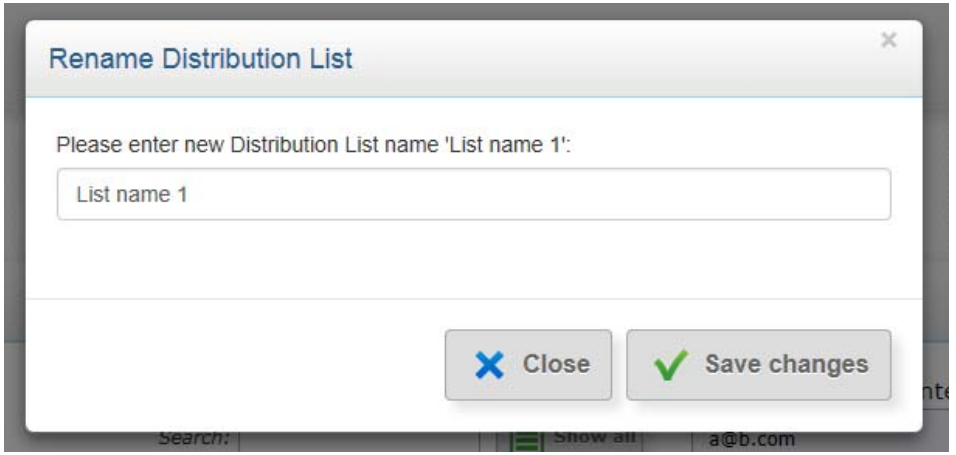
- If the user clicks on the “Cancel” button, the popup is removed and no operation is made.

- If the user enters an empty Distribution List Name and clicks on the “Clone” button, the dialog popup remains open and no operation will be performed until the user either enters a non-empty name or clicks on cancel button.

- If the user enters a Distribution List Name and clicks on the “Clone” button, the request to clone the specified Distribution List Name is send to Kill Switch Server. If the Server returns a successful status, the list of Distribution List Names is refreshed, the newly cloned Distribution List Name is selected and the content area will be the focus. If the server returns an error status, a dialog popup with a message that the Distribution List Name was not cloned and a possible reason (obtained from server) will be displayed.

- Rename button

  When the user clicks on the “Rename” button, a dialog popup with a prompt to enter a new proposed Distribution List Name for the selected Distribution List Name will be displayed. The “Rename” button is enabled only when a Distribution List Name is selected from the list.



Rename Distribution List Name pop-up

  - o If the user had unsaved changes, a dialog popup with a question "Do you want to discard your changes?" is displayed. If the user confirm, the changes will be discarded. Otherwise the operation will not be performed.

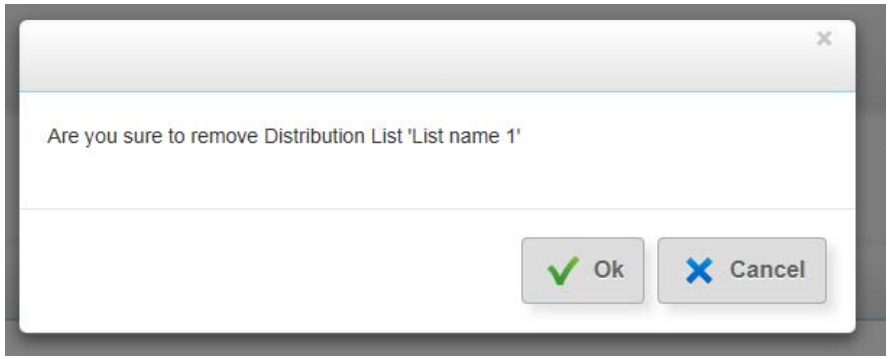
  - o If the user clicks on the “Cancel” button, the popup is removed and no operation is made.

  - o If the user enters an empty Distribution List Name and clicks on the “Rename” button, the dialog popup remains open and no operation will be performed until the user either enters a non-empty name or clicks on cancel button.

- If the user enters a Distribution List Name and clicks on the “Rename” button, the request to rename the specified Distribution List Name is send to Kill Switch Server. If the Server returns a successful status, the list of Distribution List Names is refreshed, the newly renamed Distribution List Name is selected and the content area will be the focus. If the server returns an error status, a dialog popup with a message that the Distribution List Name was not renamed and a possible reason (obtained from server) will be displayed.

- Remove button

When the user clicks on the “Remove” button, a dialog popup with a confirmation message “Are you sure to remove Distribution List <list name>?” will be displayed. The “Remove” button is enabled only when an Distribution List Name is selected from the list.



Remove Distribution List Name confirmation message

- If the user had unsaved changes, a dialog popup with a question "Do you want to discard your changes?" is displayed. If the user confirm, the changes will be discarded. Otherwise the operation will not be performed.

- If the user clicks on the “Cancel” button, the popup is removed and no operation is made.

- If the user clicks on the “Ok” button inside the dialog popup, the user will also be prompted to enter their password as validation before the save operation is performed. If a valid password was provided, the request to remove the specified Distribution List Name is send to Kill Switch Server. If the Server returns a successful status, the list of Distribution List Names is refreshed, the first Distribution List Name (if any) is selected. If the server returns an error status, a dialog popup with a message that the Distribution List Name was not removed and a possible reason (obtained from server) will be displayed.

- Refresh button

  If the user clicks on the "Refresh" button, all Distribution List Names are loaded from Kill Switch Server.

  - If the user had unsaved changes, a dialog popup with a question "Do you want to discard your changes?" is displayed. If the user confirm, the changes will be discarded. Otherwise the operation will not be performed.

- Save button

  By default the “Save” button is disabled. It becomes enabled when the Distribution List content is changed. When the user clicks on the “Save” button, the user will also be prompted to enter their password as validation before the save operation is performed. If a valid password was entered, the Distribution List content is submitted to the Kill Switch Server.

  - If the content is valid and the Kill Switch Server accepts the changes, a dialog popup with a message “Distribution Lists content is successfully updated” will be displayed. The “Save” button becomes disabled.
  - If the content is incorrect, a dialog popup with a message “Can’t update Distribution Lists” will be displayed. The reason why it could not be saved will also be displayed. The “Save” button remains enabled.

  - The Kill Switch Server will check email format using the following rules:

    - The format of the email addresses is local-part@domain, where the local-part may be up to 64 characters long and the domain name may have a maximum of 254 characters.

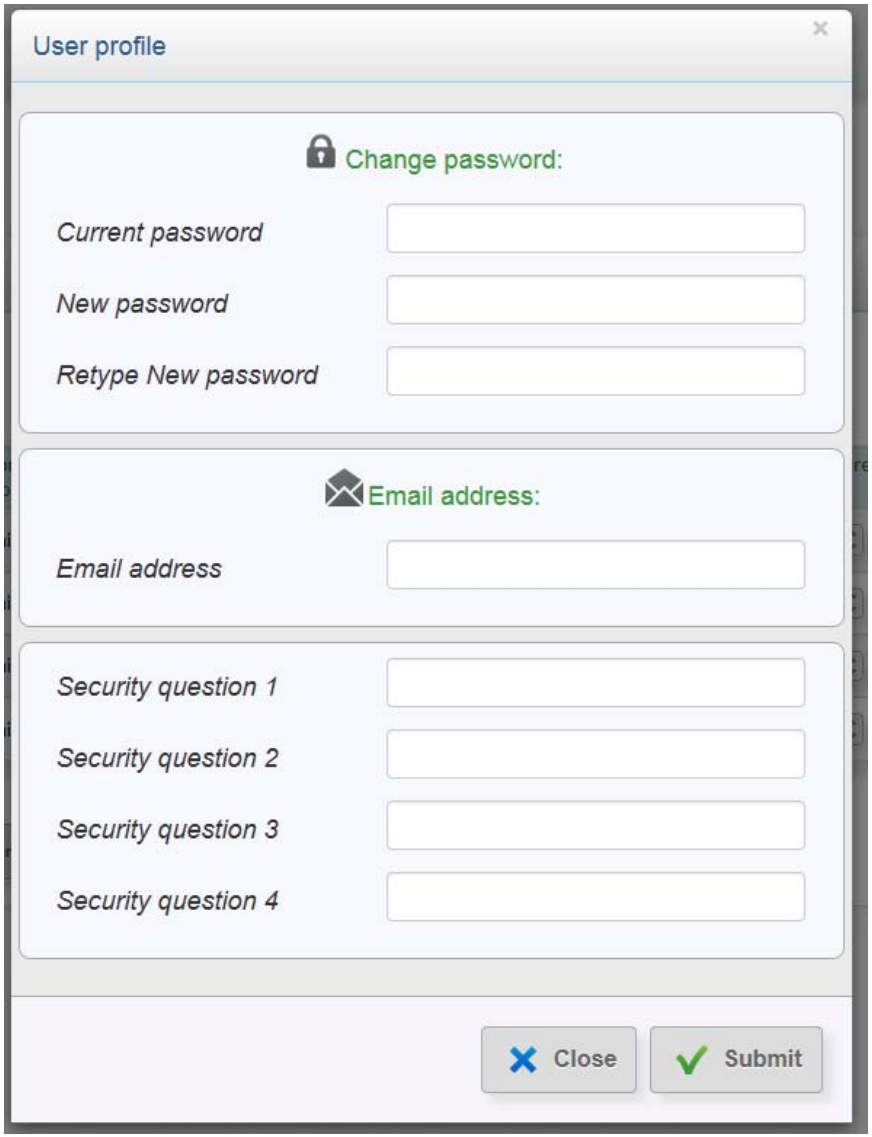
    - The local-part of the email address may use any of these ASCII characters.

- Uppercase and lowercase English letters (a–z, A–Z) (ASCII: 65–90, 97–122).
- Digits 0 to 9 (ASCII: 48–57).
- Characters !#$%&'*+-/=?^_`{|}~ (ASCII: 33, 35–39, 42, 43, 45, 47, 61, 63, 94–96, 123–126).
- Character . (dot, period, full stop) (ASCII: 46) provided that it is not the first or last character, and it does not appear two or more times consecutively (e.g. John..Doe@example.com is not allowed.).

- The domain name part of an email address must match the requirements for a hostname, consisting of letters, digits, hyphens and dots.

- When the user clicks back on the “Trading Firms” tab, the Clearing Firm home page with refreshed parameters reflecting the possible changes in Distribution Lists Names will be displayed.

6. User Profile Page



User Profile dialog pop-up

6.1. Change Password

- When a user logins into their account using a Temporary Password, the Profile dialog popup will be displayed. The user will be required to change their password at a minimum. If a new password is not provided, the "submit" button will be disabled.
- If the user is logging into their account using a Temporary Password and clicks on "Cancel" button from the Profile dialog popup, they will be redirected back to the main login page.
- If the user is logging into the system for the first time, they will be **required** to do change their password.
- If the user enters a different password in the new password field and confirmed new password field, a message "New password and confirm password do not match" will be displayed and the user will remain on the Profile page.
- If user enters an invalid password to new password field and confirmed new password field, a message "Password entered does not meet the password restrictions" will be displayed and the user will remain on the Profile page.

  Password restrictions are:

  - Should be not less than 6 characters long.
  - Should have at least one upper case letter.
  - Should have at least one lower case letter.
  - Should have at least one numeric digit.
  - No special characters are allowed (having ASCII code less than 32).
- If the entered current password is incorrect, a message "Current password does not match password on file" will be displayed and the user will remain on the Profile page.
- When the user is typing inside the New Password / Re-Type Password fields, no characters are displayed – asterisks are displayed instead of each character.

6.2. E-Mail Address

- User sees email address associated with his account
- If the user is logging into the system for the first time, they will be **required** to supply an email address to be associated with their account.
- If the user does not supply a valid email address and clicks on the “Submit” button, a message “Must supply an email address to be associated with your account” will be displayed and the user will remain on the Profile page.

6.3. Security Question Answers

- User sees all available security questions and their answers for them.
- When the user sees the Profile dialog popup first time then no answers to security question are set
- If the user is logging into the system for the first time, no answers to the security questions will be defined and will be blank. The user will be **required** to supply an answer to at least one of the security questions.
- If the user does not supply at least one answer to the security questions and clicks on the “Submit” button, a message “Please provide at least one answer on security questions” will be displayed and the user will remain on the Profile page.

- If the user clicks on the “Cancel” button from Profile dialog popup, the popup is closed without any changes saved and the user is returned to the home page they selected the “Profile” button from.
- When the user enters the required/correct information and clicks the “Submit” button, their changes are applied and the user will be directed to their home page.

7. Security / User Policy

- User can connect to the system only using https protocol.
- Only one session at a time is allowed for the same user account.
- If a user is already logged into the system and logs into the system again, then their original session will be closed. Once the user attempts to interact with their original session, they will be redirected to the main login page and the message "Your session has expired because you logged into a new session" will be displayed.
- If the user tries to access resources not allowed to their account, the standard error 403 system page will be displayed.
- The user will be auto logged out after 30 minutes of inactivity. Once the user attempts to interact with their session, they will be redirected to the main login page and the message "Your session has expired due to inactivity" will be displayed.
- The users account can be locked by administrator – in this case, a user can't login as described in 1.1.
- When several users login for the same Clearing Firm or Trading Firm and will start to make changes simultaneously, a user can save their changes only when the other users have not modified the parameters of the same Clearing Firm or Trading Firm.

  Clearing Firm User

  - If a user saves their changes for a Trading Firm profile, the other users for the same Clearing Firm should "Refresh" their home page before applying their own changes for the same Trading Firm profile. Otherwise the message "Another user has already updated this profile. Please refresh before update" will be displayed and the changes will not be applied.
  - If a user saves changes for a Distribution List Names content, the other users for the same Clearing Firm should "Refresh" its content before applying their own changes for given Distribution List Name. Otherwise the message "Another user has already updated this profile. Please refresh before update" will be displayed and the changes will not be applied.
  - If a user renames a Distribution List Name, the other users for the same Clearing Firm should refresh the Distribution Lists page before applying their own changes for given Distribution List Name. Otherwise the message "Another user has already updated this profile. Please refresh before update" will be displayed and the changes will not be applied.

- If a user removes a Distribution List Name, the other users for the same Clearing Firm should refresh the Distribution Lists page before applying their own changes for given Distribution List. Otherwise the message "Another user has already updated this profile. Please refresh before update" will be displayed and the changes will not be applied.

Trading Firm User

- If a user saves their changes for a Trading Firm profile, the other users for the same Trading Firm should "Refresh" their home page before applying their own changes for the same Trading Firm profile. Otherwise the message "Another user has already updated this profile. Please refresh before update" will be displayed and the changes will not be applied.

- If a user saves changes for a Distribution List Names content, the other users for the same Trading Firm should "Refresh" its content before applying their own changes for given Distribution List Name. Otherwise the message "Another user has already updated this profile. Please refresh before update" will be displayed and the changes will not be applied.

- If a user renames a Distribution List Name, the other users for the same Trading Firm should refresh the Distribution Lists page before applying their own changes for given Distribution List Name. Otherwise the message "Another user has already updated this profile. Please refresh before update" will be displayed and the changes will not be applied.

- If a user removes a Distribution List Name, the other users for the same Trading Firm should refresh the Distribution Lists page before applying their own changes for given Distribution List. Otherwise the message "Another user has already updated this profile. Please refresh before update" will be displayed and the changes will not be applied.

8. Appendix A

Supported Web Browsers

- Microsoft Internet Explorer version 9, 10 and up to current version.
- Google Chrome versions 29, 30, 31 and up to current version.
- Mozilla Firefox version 23 and up to current version.
- Apple Safari 5.0, 5.1 and up to current version.

Screen Resolution

- 1280 x 1024 and up.