VaR Online User Guide

Date: Jun 2022

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Latest updates are highlighted in orange

1. Overview

INTRODUCTION

Hong Kong Securities Clearing Company Limited (HKSCC) operates a Risk Management System (RMS), namely VaR Platform, which will be *official launched in 2022*.

An online tool – VaR Online will be available to Clearing Participants (CPs) for margin and stress test simulation purpose.

SCOPE

This VaR Online User Guide (also known as RMS Guide) aims to guide CPs to conduct margin and stress test simulation for Hong Kong market via VaR Online and will be subject to further amendments and changes with on-going enhancement of RMS services. All simulation results are for reference only, CPs should refer to the respective reports for their risk obligations. CPs should also refer to the General Rules of CCASS and CCASS Operational Procedures for their rights, obligations and procedures in respect of RMS services.

AVAILABLE FUNCTION TIME

VaR Online will be available from 10:00 a.m. to 7:30 p.m. on Mondays to Fridays (except public holiday).

FOR MORE INFORMATION

Please refer to the following designated webpage via HKEX website for the latest information:

https://www.hkex.com.hk/Services/Next-Generation-Post-Trade-Programme/NextGen-Risk-Management?sc_lang=en

DISCLAIMER

HKEX and/or its subsidiaries endeavour to ensure the accuracy and reliability of the information provided, but do not guarantee its accuracy and reliability and accept no liability (whether in tort or contract or otherwise) for any loss or damage arising from any inaccuracy or omission or from any decision, action or non-action based on or in reliance upon information contained in this Guide.

2. Getting Started

VaR Online is only accessible by authorized users. The assignment of Delegated Administrators is centralized and administered by HKSCC while the Delegated Administrators of the Clearing Participants are responsible for creating and managing the Business Users access to VaR Online. This section is divided into the following sub-sections to introduce the access and user management of VaR Online.

2.1 Access Management

2.2 User Management via VaR DA Platform

2.3 Password and Authentication Settings

2.4 Login and Logoff

2.1 ACCESS MANAGEMENT

Access management is implemented to ensure that only authorized users are allowed to access VaR Online. Clearing Participants should apply for VaR Online Delegated Administrator (VaR DA) from HKSCC. VaR DAs are responsible to manage Business Users' profile and grant VaR Online access to Business Users.

This sub-section provides details on VaR Online access management, covering the following key information:

- Setup of VaR DAs / Business Users
- Initial Password Setup
- Authentication Setting
- Locked / Unlock User Account
- Inactivity Timeout

Setup of VaR DAs / Business Users

To apply for VaR DAs, please submit the "VaR Online Delegated Administrator Rights Application / Maintenance Form" via Client Connect (eService ID: DA 1) by Client Connect Delegated Administrators (CCDAs) or Business Users with the access right "EU_UserMaintenance". Please ensure a valid corporate email address is provided for each VaR DA. When HKSCC completed the creation of VaR DA accounts, a notification email will be sent to VaR DAs.

The same applies to VaR Business Users, when VaR DAs set up VaR Business User accounts, corporate email addresses of the Business Users should be provided.

Initial Password Setup

Once VaR DA or VaR Business User account is created, DA or Business User would receive email notification with complete user ID and instructions to set up password via:

- VaR DA platform https://idm.hkexposttrade.com.hk/user-management/
  (Available from 7:00 a.m. to 1:00 a.m. on Mondays to Fridays, except for public holidays)

- VaR Online https://rmcd.hkexposttrade.com.hk
  (Available from 10:00 a.m. to 7:30 p.m. on Mondays to Fridays, except for public holidays)

Please refer to section 2.4.1 for initial password set up.

Authentication Setting

VaR DA platform & VaR Online adopt 2-Factor Authentication, being

1. VaR DA / VaR Business User self-defined password, plus
2. One Time Password (OTP) received via email or ForgeRock Authenticator mobile application

Please refer to section 2.3.2 for changing password and changing channel/ mobile device to receive OTP.

Locked / Unlock User Account

VaR DA or VaR Business User access will be locked after 5 consecutive unsuccessful attempts of login within 30 minutes. An email will be sent to the VaR DA or VaR Business User to notify the account status. To unlock the account:

- VaR DA – please request HKEX to unlock account via email to VaRDA_unlock@hkex.com.hk.

- VaR Business User – please request VaR DA to unlock the user access, VaR DA may refer to section 2.2.1 for detailed steps to unlock an account.

After the account is unlocked, you will receive an email. Please click <Forgot/Reset your password> at VaR DA platform/ VaR Online login page to reset login password and re-register mobile device. Detailed steps please refer to steps 2 to 8 under section 2.4.1 FIRST TIME LOGIN ON VAR DA PLATFORM/ VAR ONLINE.

Inactivity Timeout

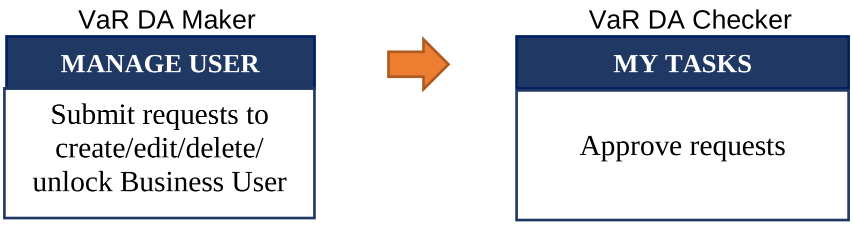
To prevent unauthorized access to VaR DA Platform and VaR Online, the idle time for both systems is set at 15-minutes. Users please re-login if needed.

2.2 USER MANAGEMENT VIA VAR DA PLATFORM

Delegated Administrators can access VaR DA Platform by below URL via Google Chrome:

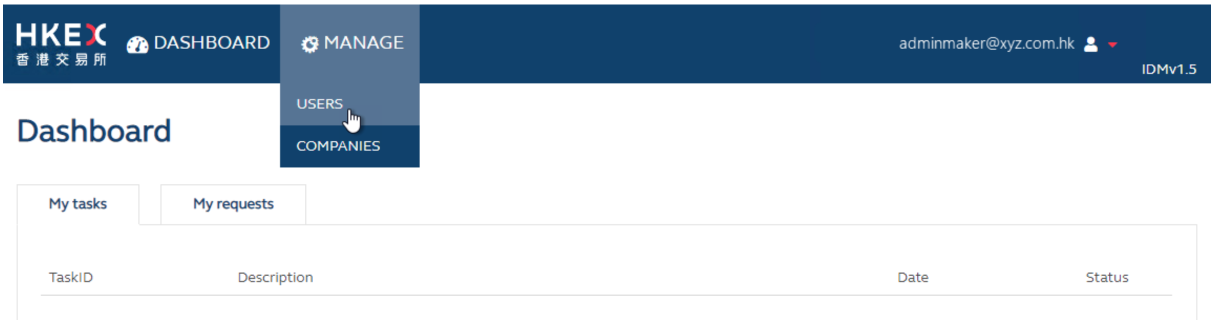
https://idm.hkexposttrade.com.hk/user-management/
(Available from 7:00 a.m. to 1:00 a.m. on Mondays to Fridays, except for public holidays)

To create/ edit/ delete/ unlock a Business User account:



2.2.1 DA MAKER – SUBMIT REQUEST FOR USER MAINTENANCE

On the main page of DA Platform, DA (maker) can go to <MANAGE> and then click on <USERS> to access manage user related functions.



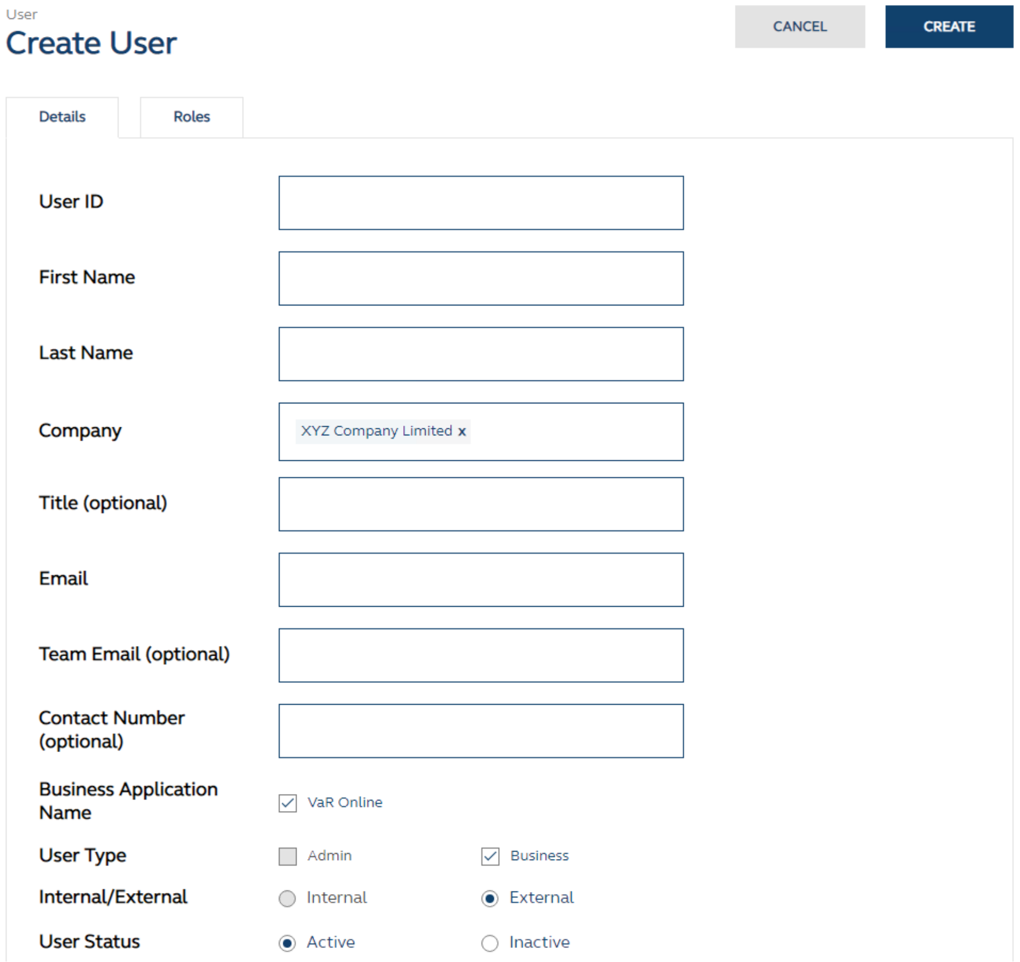
Create Users

1. Click on <+ CREATE USER>

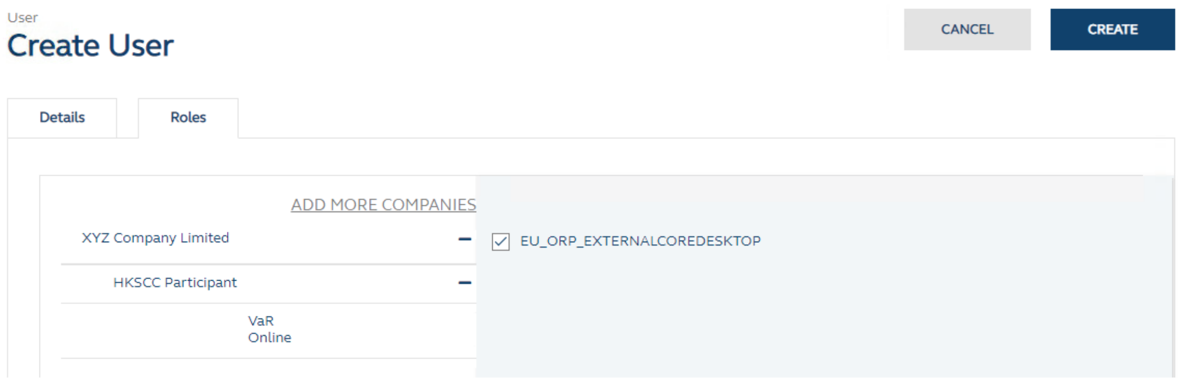
2. Fill in the user details and note below:

• User ID	Must be alphanumeric and no special character is allowed (e.g. DA100). System will auto append company ID of the user's company in the front when submitted the request. (e.g. 000123_DA100)
• Company	DA (maker) can only input the **Company** that he/ she manages. Once the company name is filled in, **ROLES** tab will appear.
• Email	Must be a unique corporate email.
• Business Application Name	Default as **VaR Online**.
• User Type	Default as **Business**, should NOT be changed.

- User Status — Default as **Active**, should NOT be changed. If it is changed to **Inactive**, created Business User would be unable to access VaR Online.



3. Click <Roles> tab and then DA (maker) should click + sign next to company name to expand and click on the role EU_ORP_EXTERNALCOREDESKTOP

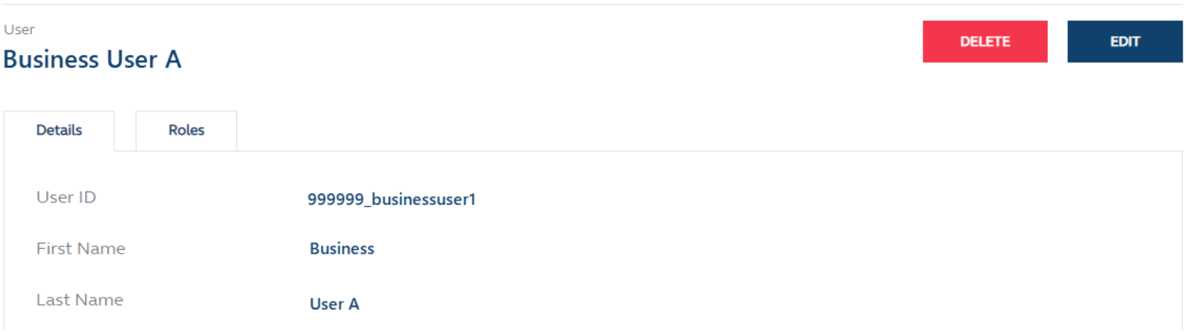


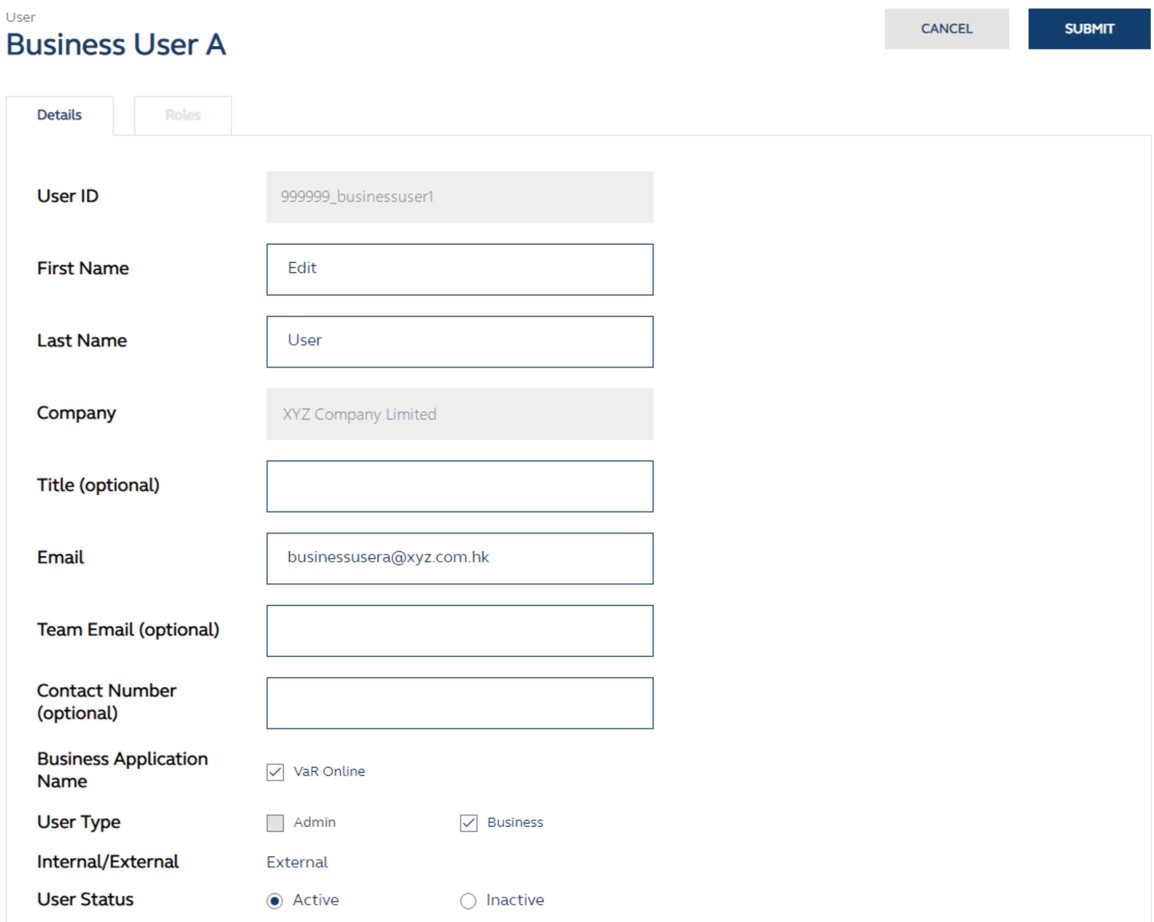
4. After completing all required information, click <CREATE> to submit the request. A pop-up window will display to request for confirmation. Please review and click <CREATE> to confirm. The submitted request requires checker's approval.

<u>Edit Users</u>

1. If there are existing users, a user list will display after clicking <MANAGE> and then <USERS>.
2. On the user list, click on the particular Business User row to edit.
3. Click <EDIT> on the <Details> page to edit user information.

Note: Roles of Business Users is default as EU_ORP_EXTERNALCOREDESKTOP, NO change is allowed





4. Amend user information and click <SUBMIT> to submit the change. A pop-up window will display to request for confirmation. Please review and click <SUBMIT> to confirm. The submitted request requires checker's approval.

Note: DAs (maker) may suspend/ reactivate a user by changing the User Status, i.e. <Active> or <Inactive>. Business Users are not required to reset password/ mobile device registration after account reactivation.

Delete Users

1. If there are existing users, a user list will be shown after clicking <MANAGE> and then <USERS>.
2. On the user list, click the particular Business User row to delete.
3. Click <DELETE> on the <Details> page to submit the user deletion.
4. A pop-up window will display to request for confirmation. Please review and click <DELETE> to confirm. Deletion will require checker's approval.

Remarks: Upon approval, Business User is no longer found in VaR DA platform and user status shown in user listing report will be changed to "INACTIVE". This account will be deleted from database within 72hrs.

Edit or Delete VaR DAs

To request for user maintenance of VaR DAs including:

- Edit user information
- Delete VaR DA's roles from certain managed company(ies)
- Delete VaR DA account from VaR DA Platform

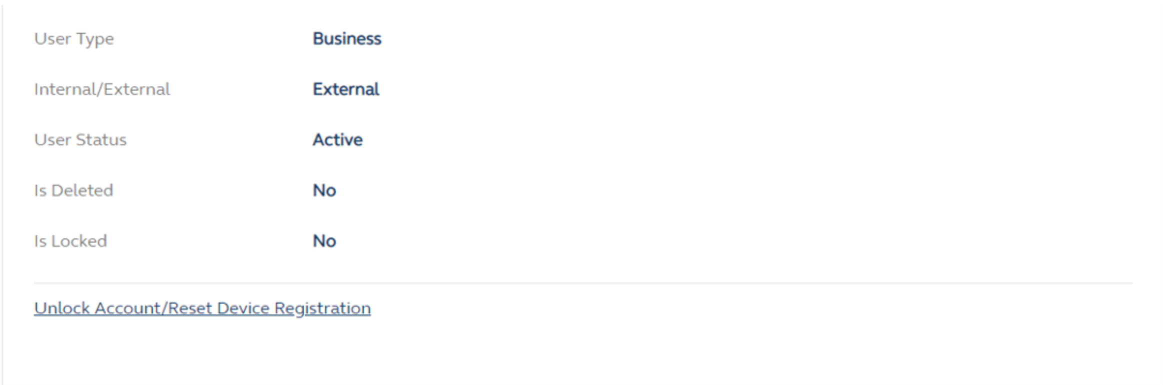
Please submit "VaR Online Delegated Administrator Rights Application / Maintenance Form" via Client Connect (eService ID: DA 1) by Client Connect Delegated Administrators (CCDAs) or Business Users with the access right "EU_UserMaintenance".

Unlock Account/ Reset Device Registrations

A user account will be locked after five unsuccessful attempts to login within 30 minutes. Locked VaR DA accounts can only be unlocked by HKEX, while VaR DAs can unlock their Business User accounts.

1. Retrieve the user details by clicking <MANAGE>, <USERS>, then click on the particular Business User from user list to unlock.

2. On the Business User <Details> page, scroll to the bottom and click on <Unlock Account/Reset Device Registration> hyperlink.

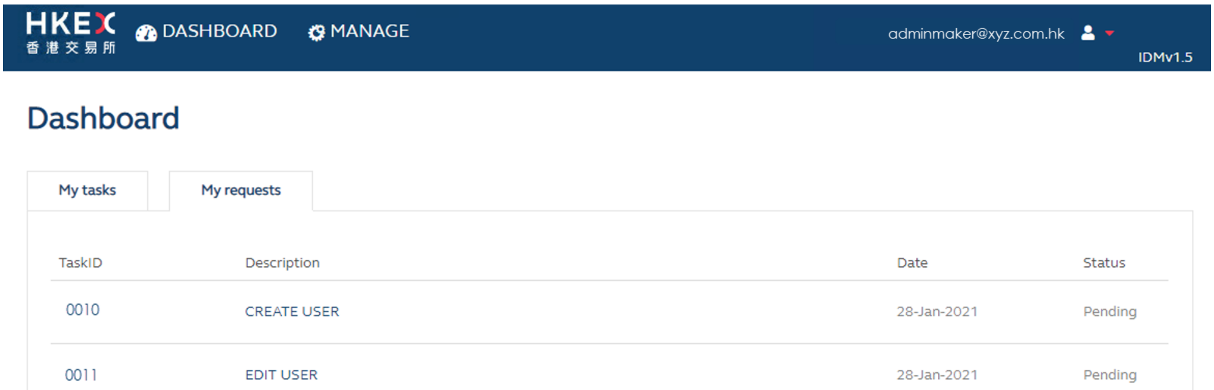


3. A pop-up window will display to request for confirmation. Please review and click <UNLOCK> to confirm. Unlock account request will require checker's approval.

Remarks: Upon the unlock account request is approved by DA (checker), Business User's account will be unlocked, he/ she must re-register mobile device registration.

<u>View Submitted Requests</u>

1. Go to <DASHBOARD> and then <My Requests>, a list of submitted requests is displayed here.



2. Click on the particular request row to see details of requests.

Remarks: Once a request is processed, it will be removed from Dashboard.

Notification Email to DA (maker)

For requests submitted for checker's approval, DAs (maker) within the same company will receive acknowledgment email. An example is shown below:

HKSCC System

Creation of a new user is submitted

Reference Number	0010
Status	Pending approval
Notification Type	For reference
Requested by	Admin Maker
Message	Nil

HKEX

For enquiries, please contact us via link.

Please do not reply this e-mail as this is system generated.

Disclaimer
The information contained in this email is intended only for the use of the individual or entity named above and may contain information that is privileged, confidential and exempt from disclosure under applicable law. If the reader of this message is not the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this message in error, please immediately notify us and delete the email. Internet communication cannot be guaranteed to be timely, secure, error-free or virus-free. The sender does not accept liability for any errors or omissions. Thank you.

2.2.2 DA CHECKER – APPROVE REQUEST FOR USER MAINTENANCE

Notification Email to DA (Checker)

User maintenance requests must go through DA (checker)'s approval. Once DA (maker) has submitted request, DA (checker) will receive a notification email like below for follow-up action.


HKSCC System

Creation of a new user is pending for approval

Reference Number	0010
Status	Pending approval
Notification Type	For action
Requested by	Admin Maker
Message	Nil

HKEX
香港交易所

For enquiries, please contact us via link.

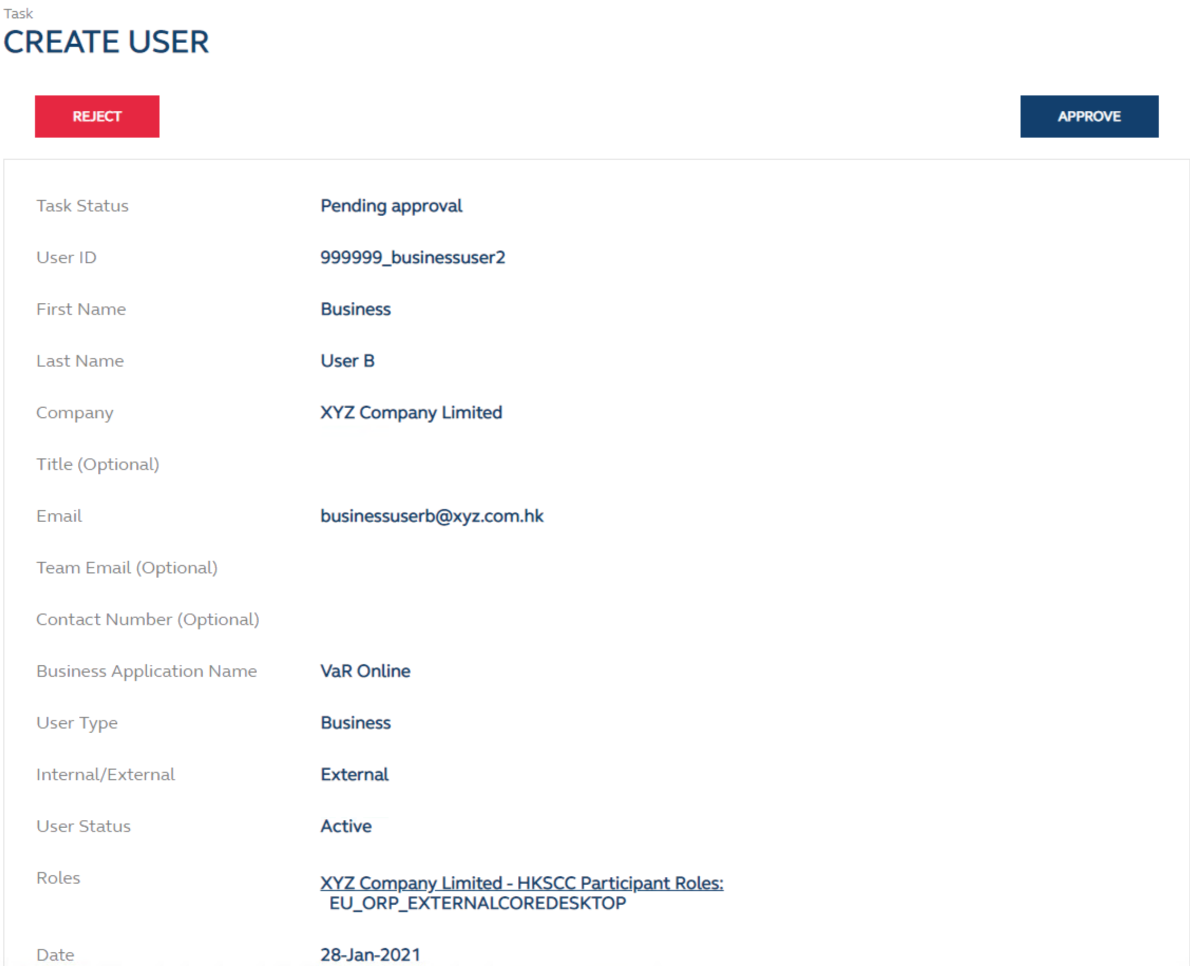
Please do not reply this e-mail as this is system generated.

Disclaimer
The information contained in this email is intended only for the use of the individual or entity named above and may contain information that is privileged, confidential and exempt from disclosure under applicable law. If the reader of this message is not the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this message in error, please immediately notify us and delete the email. Internet communication cannot be guaranteed to be timely, secure, error-free or virus-free. The sender does not accept liability for any errors or omissions. Thank you.

View and Approve/ Reject Requests

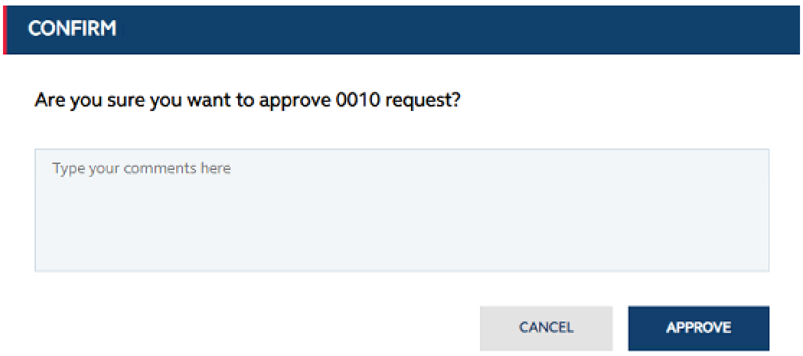
1. Go to <DASHBOARD> and <My Tasks>, all requests pending for action are listed here.

2. Click the particular pending request to view details.



3. After review, checker can click <APPROVE> or <REJECT> directly.

4. A confirmation pop-up window will display. DA (checker) can input his/ her comment on the request. Then, checker can click <APPROVE> or <REJECT> to complete the process.



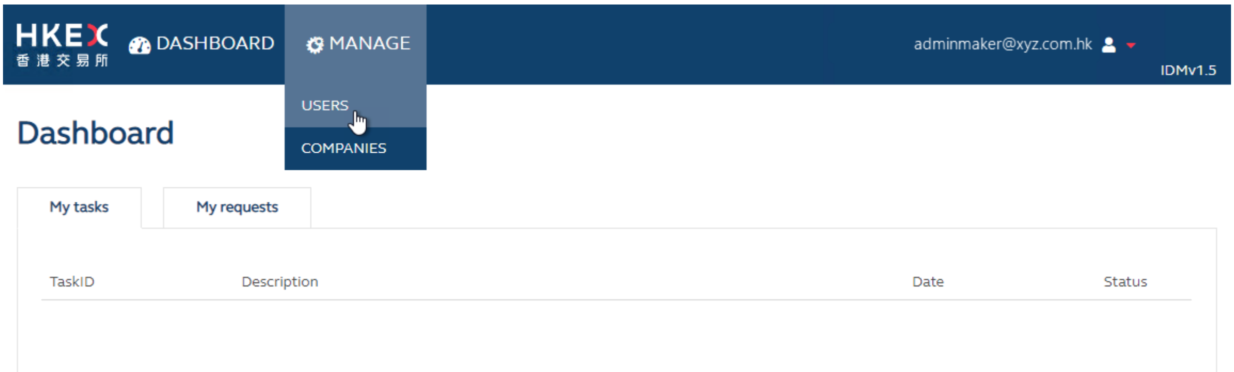
Remarks: If a DA (checker) rejects a request, he/she must provide comment.

Notification Email to DA (maker)

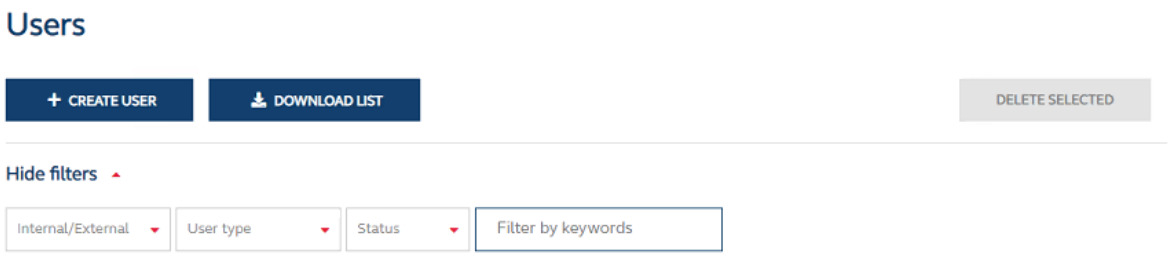
Upon approval/ rejection of request, DA (maker) will receive a notification email like below:

2.2.3 VIEW USER

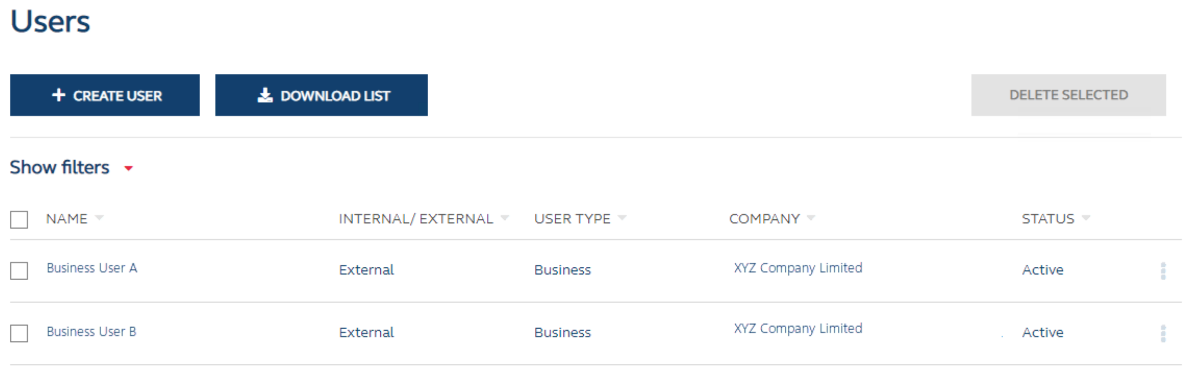
Both maker and checker of DA can go to <MANAGE> and then <USERS> to view user list.



Then, a list of users is displayed. Users can also click <Show filters> to apply filters and search for a particular user.

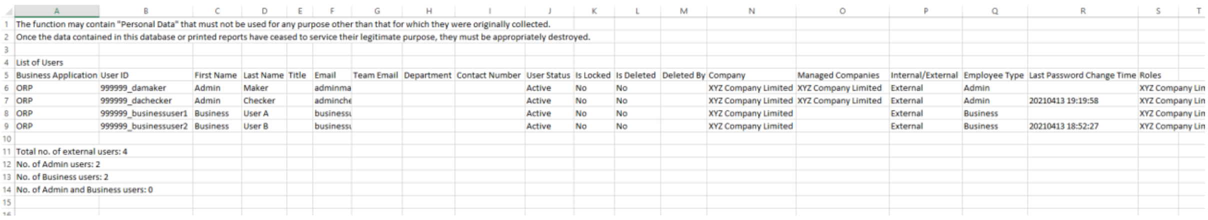


To view details of a particular user, DAs may click the related user row.



From the list of users, DAs can click <DOWNLOAD LIST> to export the user list. The file will be downloaded as "users.csv" into your local PC.

Users.csv



The function may contain "Personal Data" that must not be used for any purpose other than that for which they were originally collected.
Once the data contained in this database or printed reports have ceased to service their legitimate purpose, they must be appropriately destroyed.

List of Users

Business Application	User ID	First Name	Last Name	Title	Email	Team Email	Department	Contact Number	User Status	Is Locked	Is Deleted	Deleted By	Company	Managed Companies	Internal/External	Employee Type	Last Password Change Time	Roles
ORP	999999_damaker	Admin	Maker		adminma				Active	No	No		XYZ Company Limited	XYZ Company Limited	External	Admin		XYZ Company Lin
ORP	999999_dachecker	Admin	Checker		adminche				Active	No	No		XYZ Company Limited	XYZ Company Limited	External	Admin	20210413 19:19:58	XYZ Company Lin
ORP	999999_businessuser1	Business	User A		businessu				Active	No	No		XYZ Company Limited		External	Business		XYZ Company Lin
ORP	999999_businessuser2	Business	User B		businessu				Active	No	No		XYZ Company Limited		External	Business	20210413 18:52:27	XYZ Company Lin

Total no. of external users: 4
No. of Admin users: 2
No. of Business users: 2
No. of Admin and Business users: 0

Description of fields:

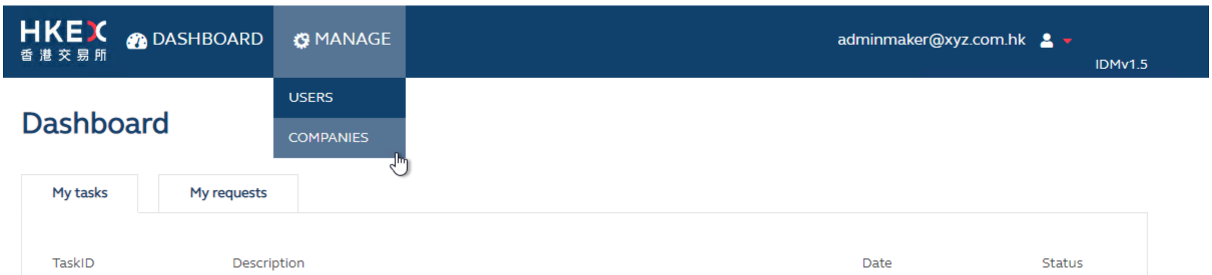
Field	Description
Business Application	• Always "ORP"
User ID	• User ID assigned to user • i.e. [company ID]_[User ID]
First Name	• First name of user
Last Name	• Last name of user
Title	• Title of user, optional field
Email	• The unique corporate email address of user
Team Email	• Email for a team of users, optional field
Department	• Not in use, always blank
Contact Number	• Contact number of user, optional field
User Status	• Status of user • i.e. "Active" or "Inactive"
Is Locked	• "Yes" = user account is locked • "No" = user account is not locked

Is Deleted	• "Yes" = user account is deleted • "No" = user account is existed
Deleted By	• Indicates the execution of deletion • i.e. "Admin" or "System" • Appear as blank when "Is Deleted = No" • "Admin" when user is deleted by HKEX or VaR DA • "System" when user is deleted automatically due to the user is only attached to a deactivated HKSCC identity of a company
Company	• Assigned company of user
Managed Companies	• The assigned companies to DA for user management • Applicable to DAs only
Internal/External	• Always "External"
Employee Type	• Type of the user • i.e. "Admin", "Business" or "Admin; Business"
Last Password Change Time	• The date and time when user changed his/ her login password last time
Roles	• Role(s) assigned to user
Total no. of External Users	• Show the total number of external users
No. of Admin Users	• Show the number of users with "Employee Type = Admin"
No. of Business Users	• Show the number of users with "Employee Type = Business"
No. of Admin and Business Users	• Show the number of users with "Employee Type = Admin; Business"

A User Management Audit Trail Report will be available via Report Access Platform (RAP) on each business day. This report generates in .csv file format and lists user management activities on that day.

2.2.4 VIEW COMPANY AND COMPANY IDENTITY

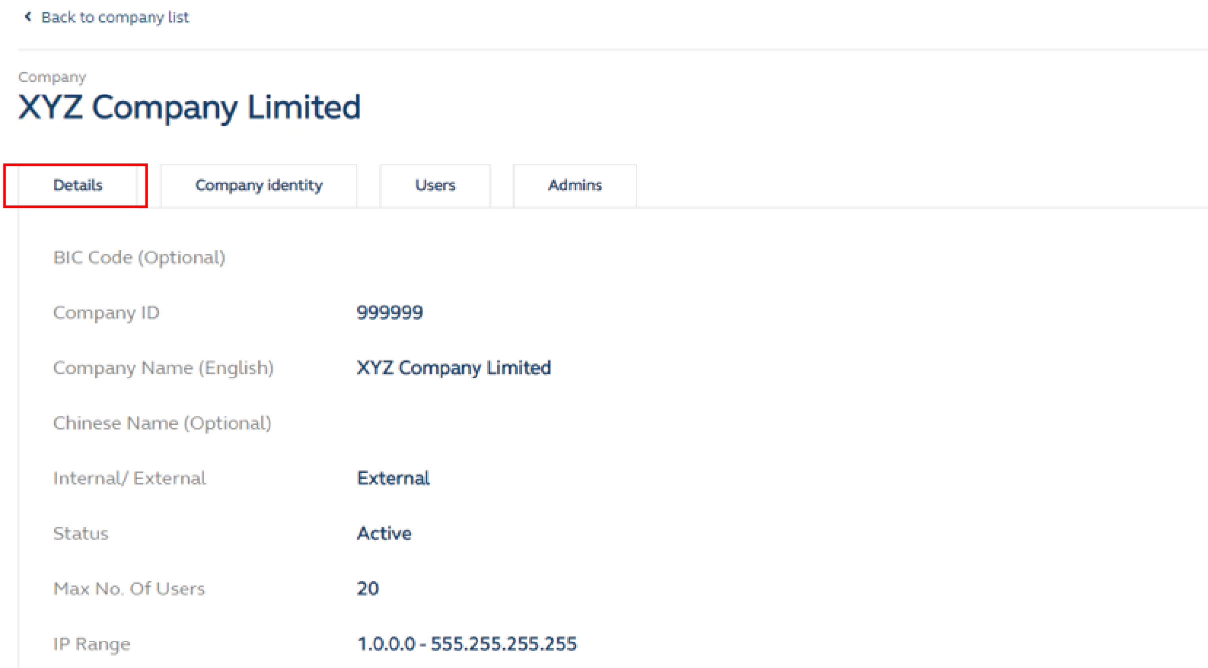
DA (maker) and DA (checker) can view details of their own company from <MANAGE> and then <COMPANIES>.

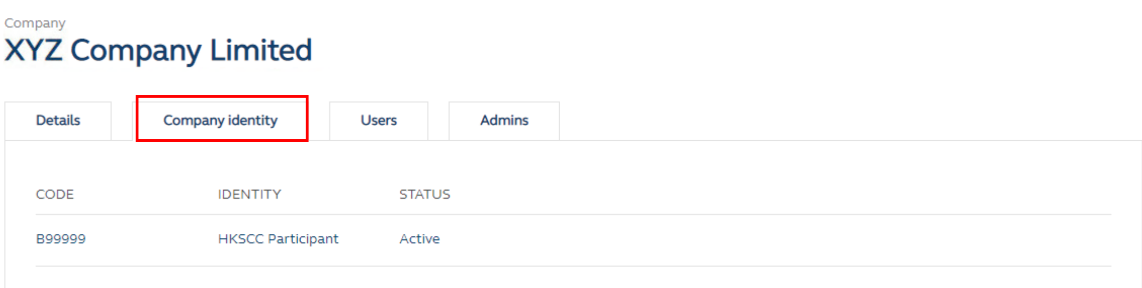


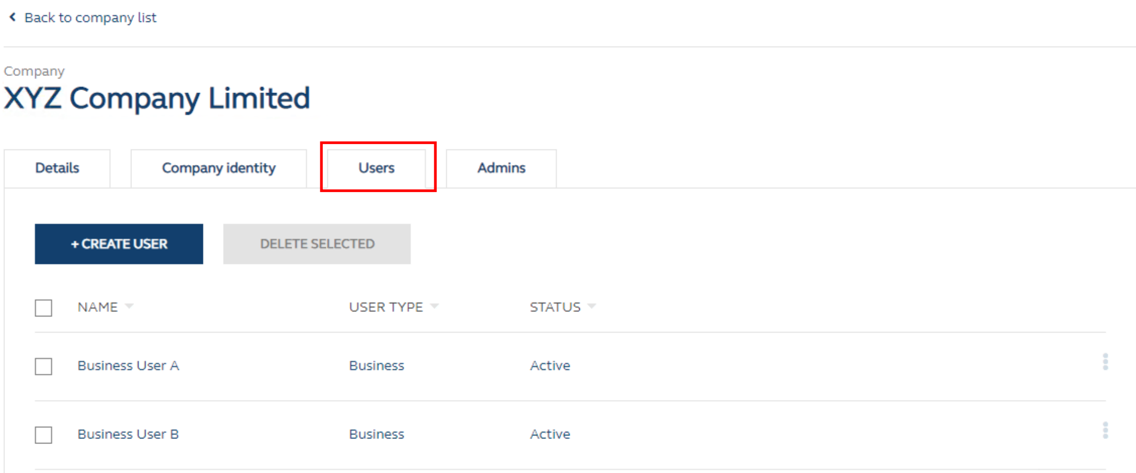
1. After clicking <COMPANIES>, your company's name will be listed. Click the company row to view details.

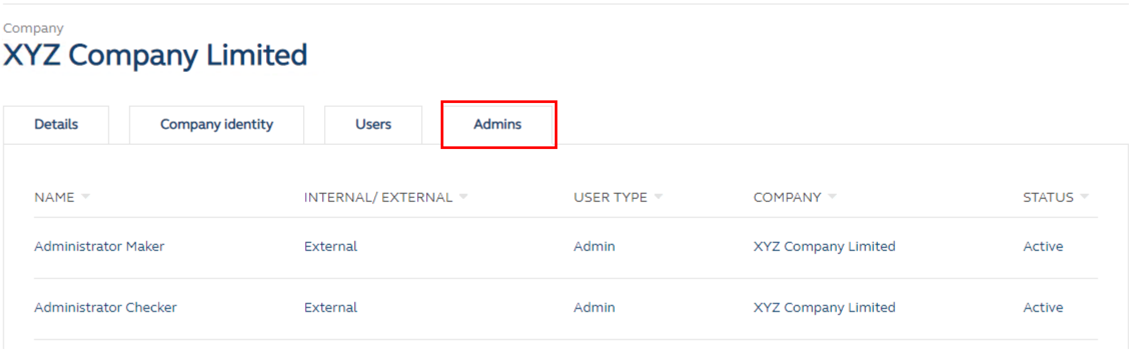
2. Details will be displayed. DA can click <Company identity>, <Users> or <Admins> tabs to view different information.

Remarks: For DA (maker) viewing <Users> tab, option to <+ CREATE USER> and <DELETE SELECTED> will be displayed.









2.3 PASSWORD AND AUTHENTICATION SETTINGS

2.3.1 PASSWORD REQUIREMENT

To access VaR DA Platform/ VaR Online, user has to setup a login password for his/her account during first time login. Below listed out the login password's requirements:

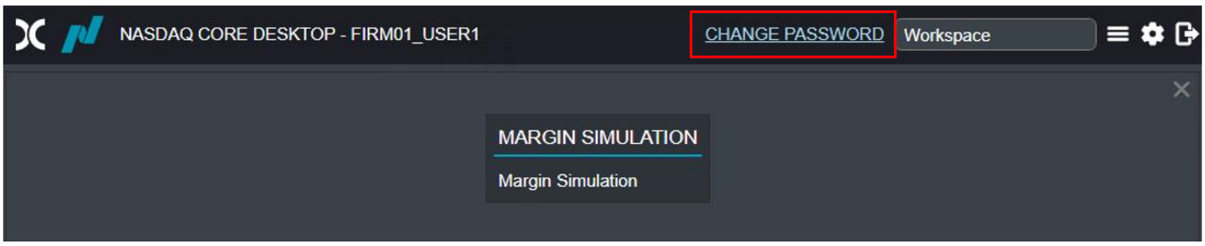
1. 8-15 characters
2. At least 1 number
3. At least 1 lower letter
4. At least 1 capital letters
5. At least 1 special character from !@#$%^&*()

The password is confidential and should not be disclosed to unauthorized persons. New password shall not be the same as any of the last 5 passwords. If a user is assigned as both Delegated Administrator in VaR DA Platform and Business User in VaR Online, the same set of User ID and Login password will be used to access both platforms.

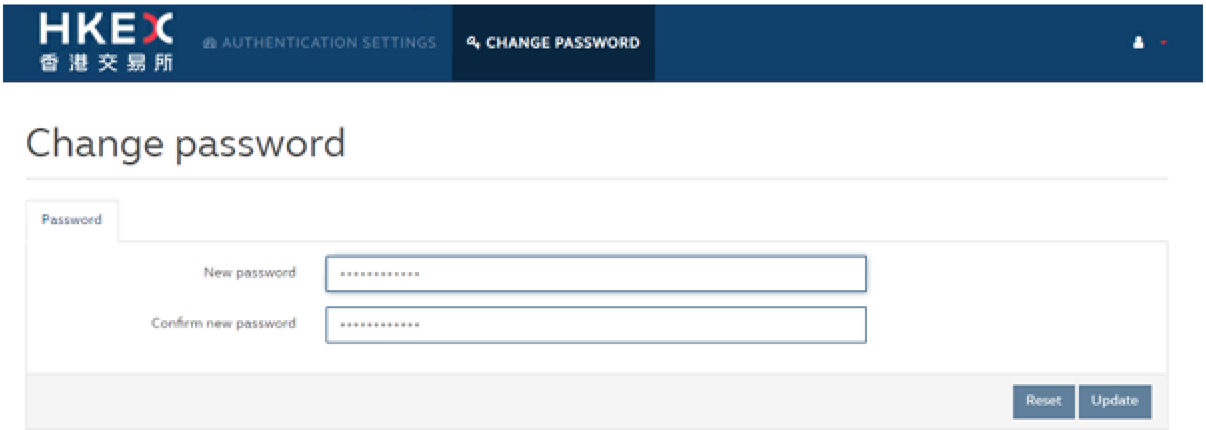
2.3.2 CHANGE PASSWORD AND AUTHENTICATION SETTING

Delegated Administrators (DAs):
After login to VaR DA Platform, DAs can access to change password site via URL:
https://sso.hkexposttrade.com.hk/sso?realm=ex

Business Users:
After login to VaR Online, Business Users can change password from the main view.

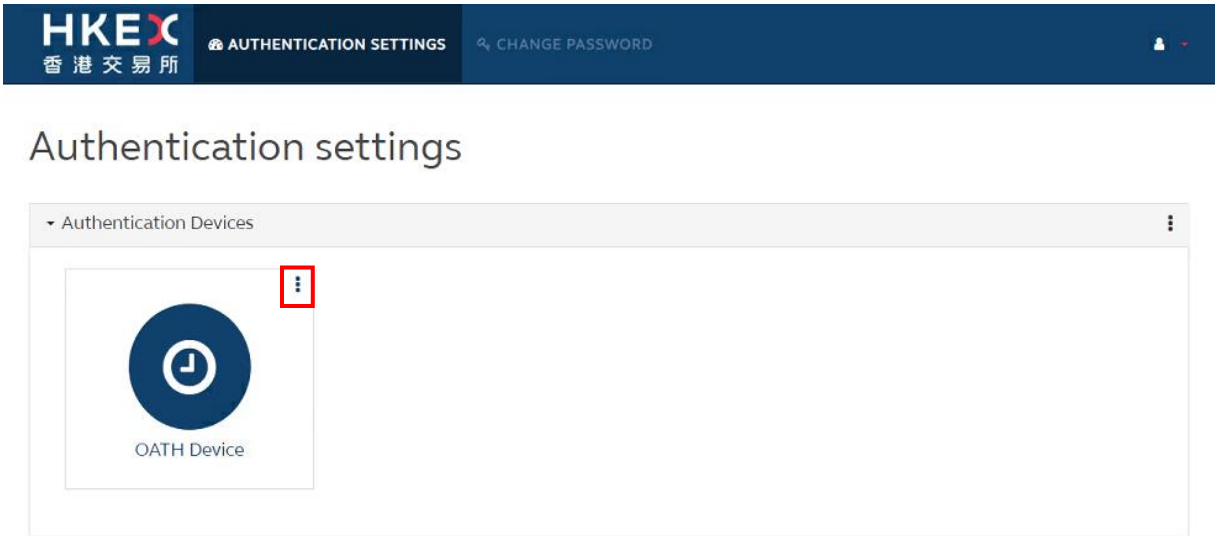


After clicking CHANGE PASSWORD hyperlink, the change password window will be displayed, please input and confirm new password; then click <Update>.

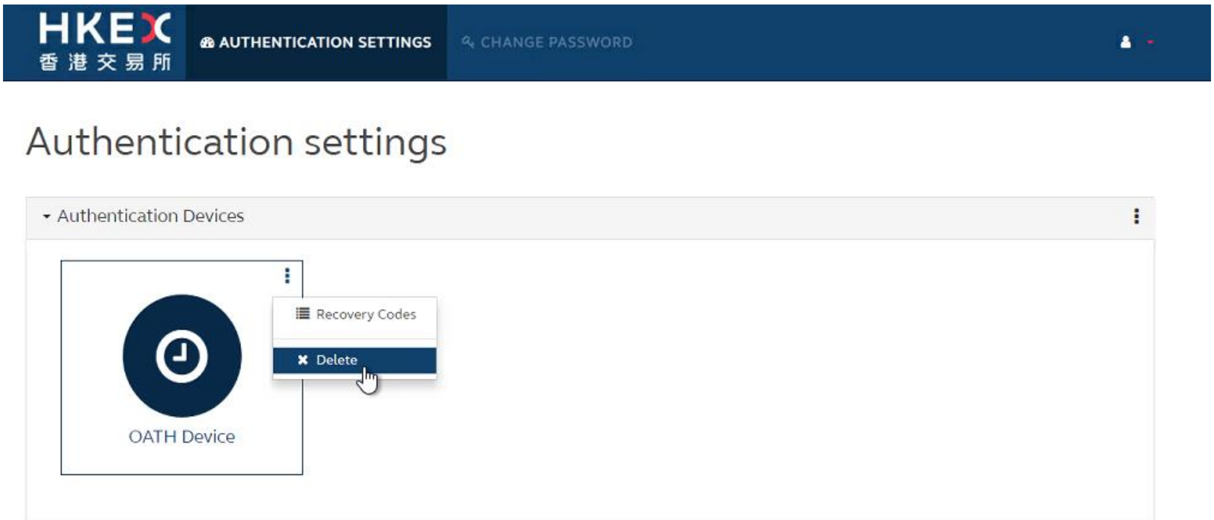


Remark: For VaR DAs, password changed via VaR Online will also be applicable to login to VaR DA platform and vice versa.

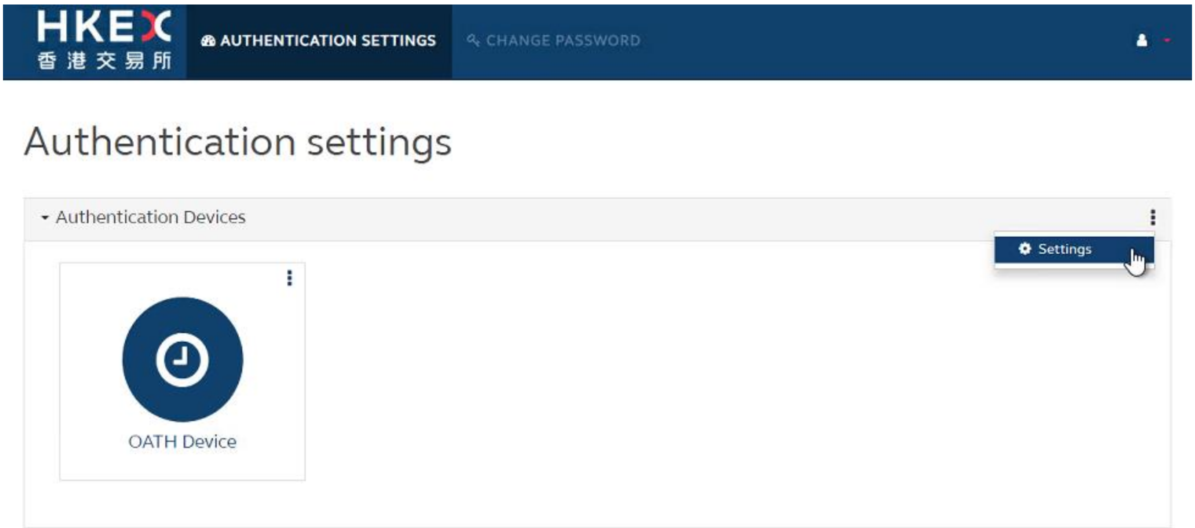
Users can also click <AUTHENTICATION SETTINGS> to choose OTP delivery method.

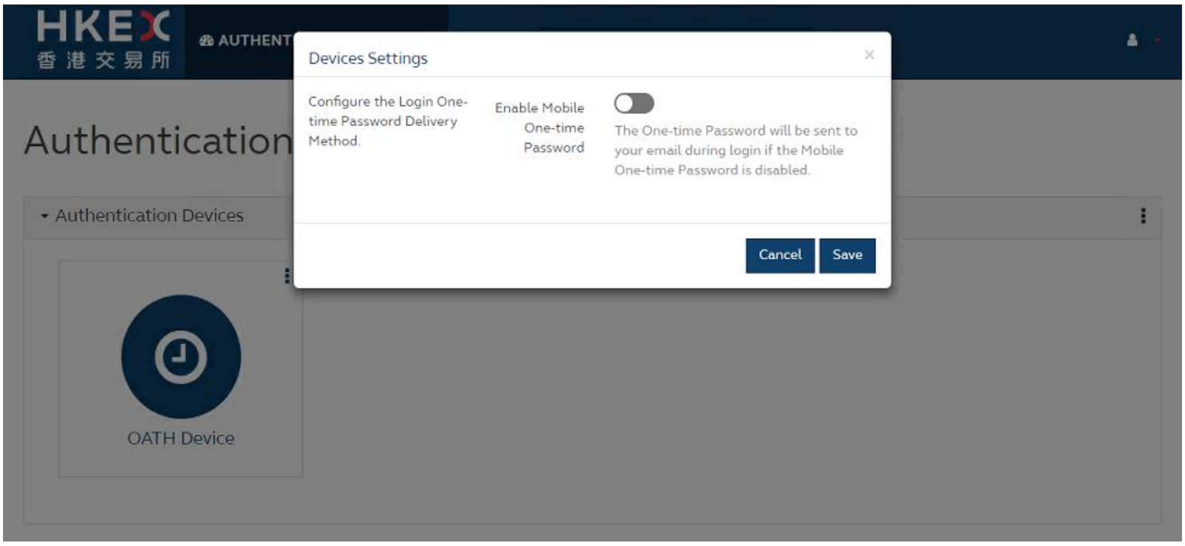


To change the One-time Password (OTP) mobile device, users may click ⋮ to delete the registered mobile device for OTP. Then they should re-register a new mobile device for authentication during next login.



If users opt to choose email as OTP delivery method instead of mobile device, please click on the right then choose <Settings>. Users can disable <Mobile One-time Password> and click <Save>.





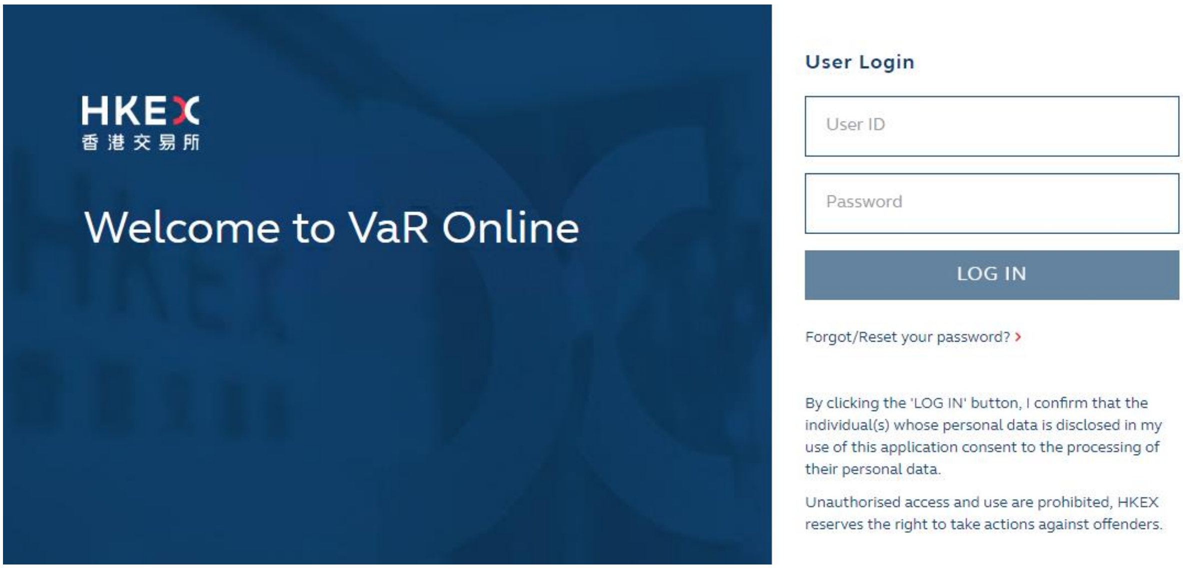
Remarks: HKEX suggests users to enable mobile One-time Password for optimal account security.

2.3.3 FORGOT/ RESET PASSWORD

In case of forgot or reset password, users who enabled mobile OTP may use “Self-service Reset Password” function on login page. For users who disabled OTP sent via mobile device, please contact your VaR DAs (applicable to VaR business user) or HKEX (applicable to VaR DA) to reset mobile device registration before using “Self-service Reset Password”.

<u>Self-service Reset Password</u>

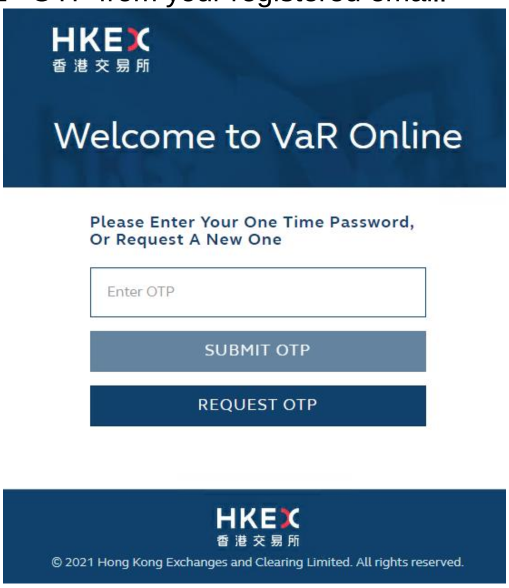
1. Click <Forgot/Reset your password>.

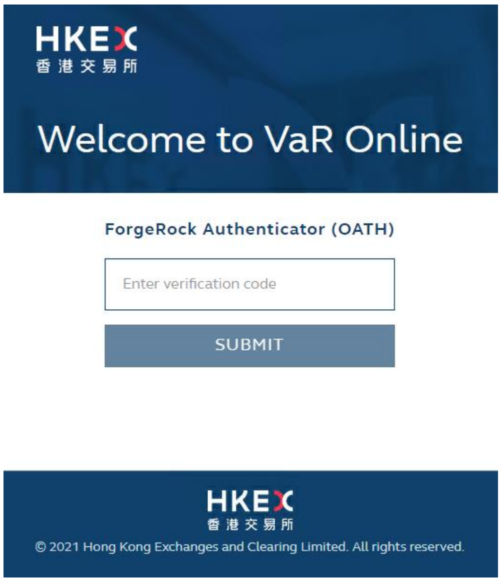


2. Please enter your User ID and click <SUBMIT>.

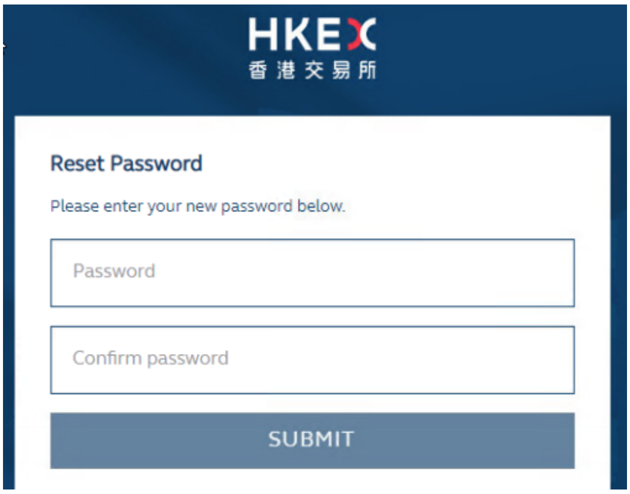
3. You will be required to enter two OTPs.

The 1st OTP from your registered email. The 2nd OTP from your mobile app.





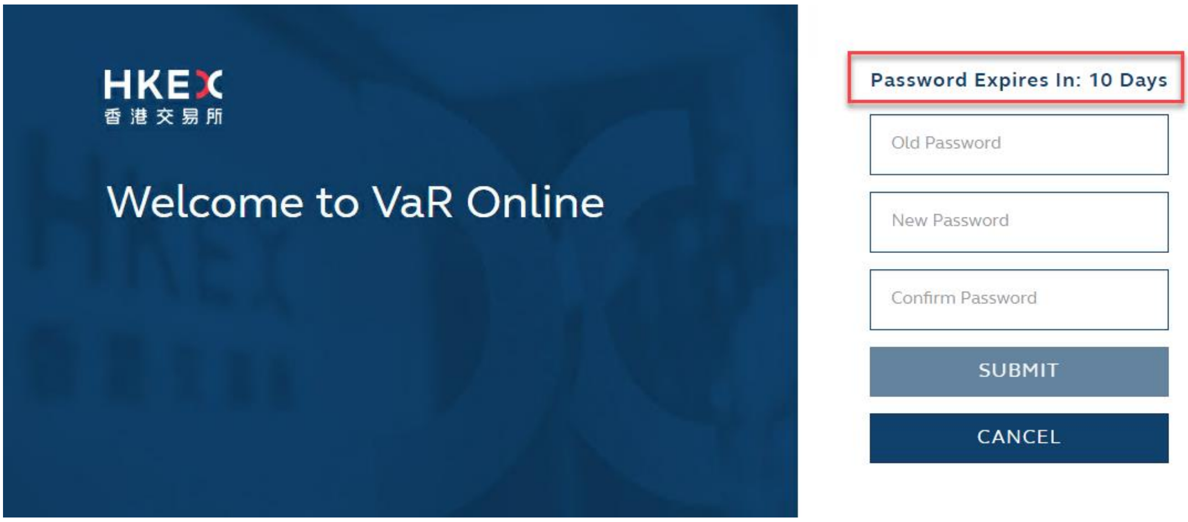
4. Please input your new password and click <SUBMIT>.



5. Upon successful validation of new password, please close the “Self-service Reset Password” window. Navigate back to login page to login with User ID and new login password.

2.3.4 EXPIRED ACCOUNT PASSWORD

Both Delegated Administrator and Business User account’s login password expires every 90 days. 10 days before expiry, users will start to receive reminder for changing password after login.



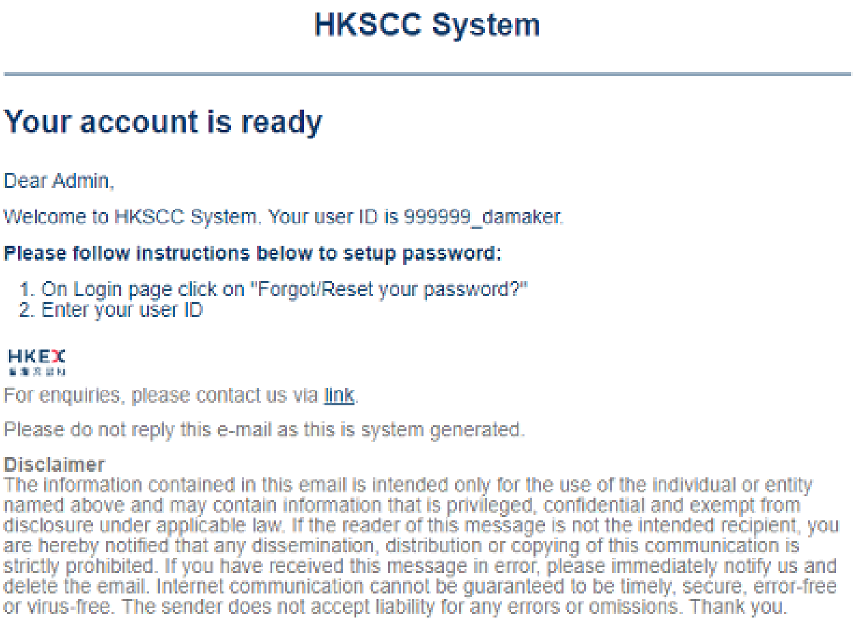
You should change your login password. If DA or Business User click <CANCEL> to skip this reminder, he/ she may continue to login with existing password.

After expiry of password, user still have one-time grace login. Then, user will be asked to change password. If user still DO NOT change his/her password, then such user will be UNABLE to login and access VaR DA Platform/ VaR Online until reset of password. The user must click <Forgot/Reset your password> to perform “Self-service Reset Password”. Please refer to last sub-section, 2.3.3 FORGOT/ RESET PASSWORD for details.

2.4 LOGIN AND LOGOFF

2.4.1 FIRST TIME LOGIN ON VAR DA PLATFORM/ VAR ONLINE

1. Delegated Administrators and Business Users will receive below notification email for successful creation of their accounts.


HKSCC System

Your account is ready

Dear Admin,

Welcome to HKSCC System. Your user ID is 999999_damaker.

Please follow instructions below to setup password:

1. On Login page click on "Forgot/Reset your password?"
2. Enter your user ID

HKEX

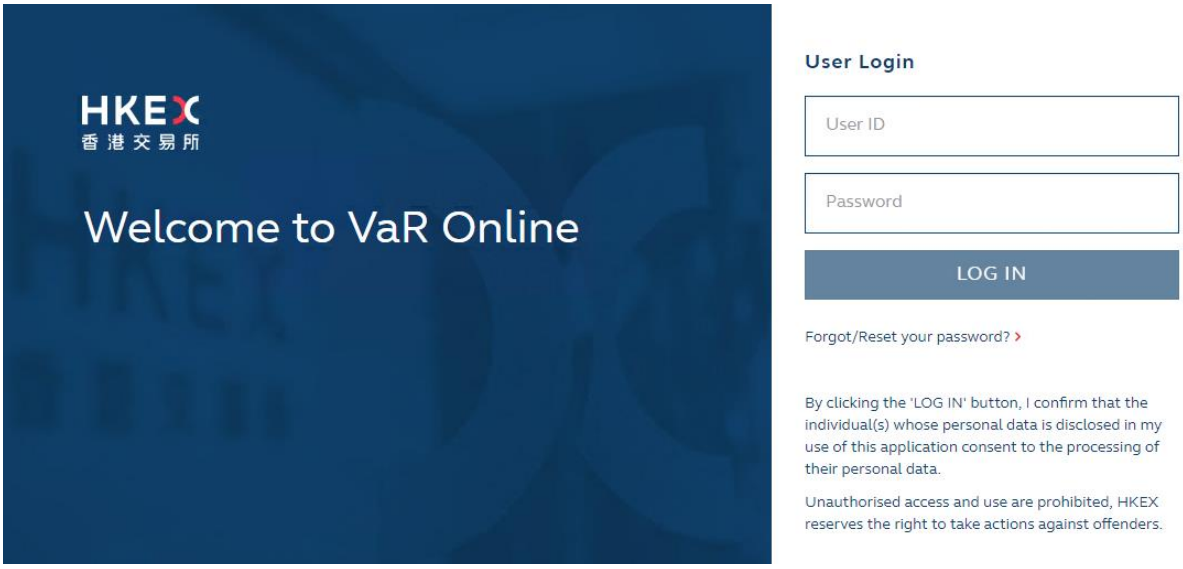
For enquiries, please contact us via link.

Please do not reply this e-mail as this is system generated.

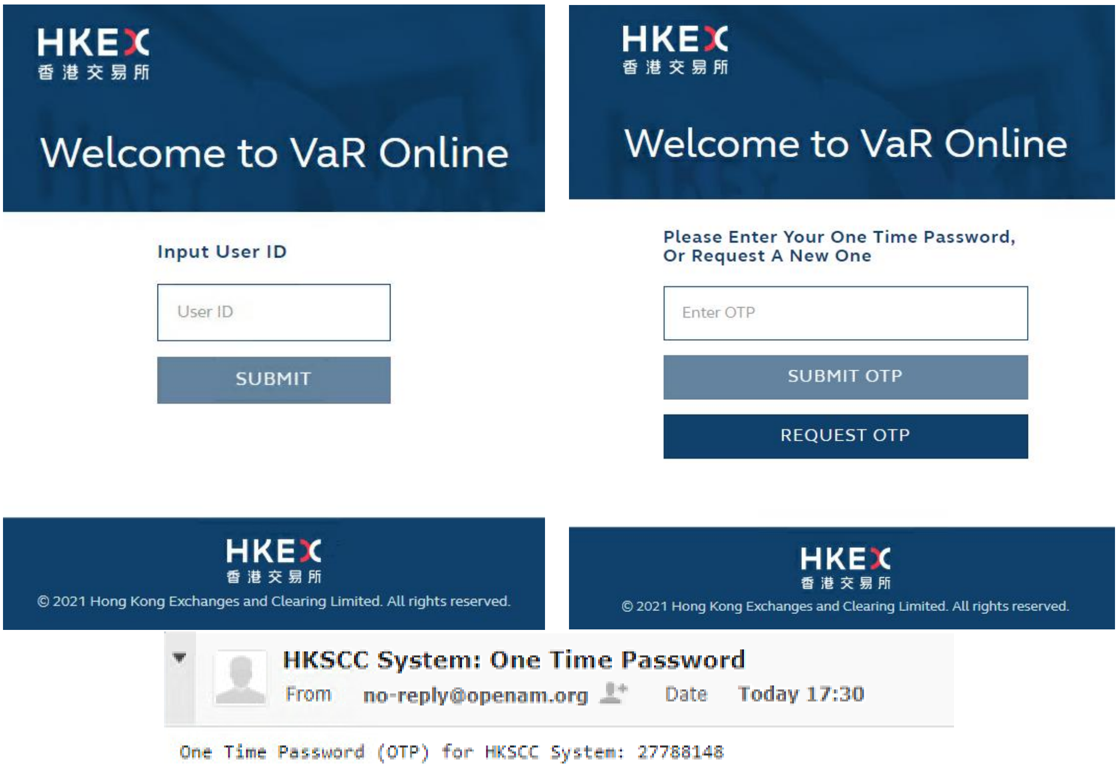
Disclaimer
The information contained in this email is intended only for the use of the individual or entity named above and may contain information that is privileged, confidential and exempt from disclosure under applicable law. If the reader of this message is not the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this message in error, please immediately notify us and delete the email. Internet communication cannot be guaranteed to be timely, secure, error-free or virus-free. The sender does not accept liability for any errors or omissions. Thank you.

2. Access the login page via the following URL:
   VaR DA platform https://idm.hkexposttrade.com.hk/user-management/
   VaR Online https://rmcd.hkexposttrade.com.hk

3. Click <Forgot/ Reset your password> to set up login password.

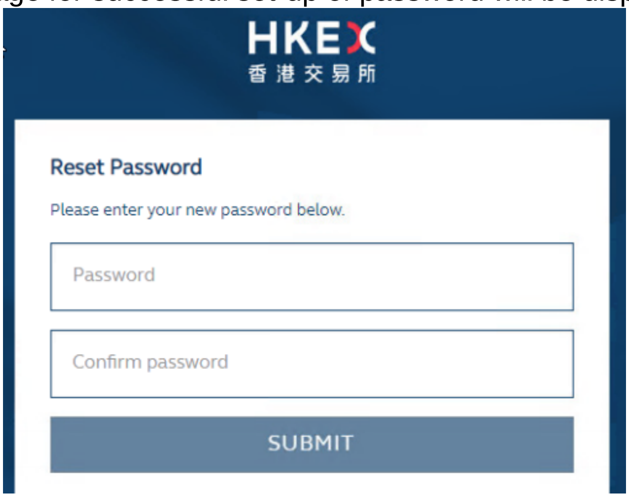


4. Enter your user ID (as mentioned in the notification email) and click <SUBMIT>. Then, you will receive a One-time Password (OTP) from your registered email. Please input the OTP and click <SUBMIT OTP>.



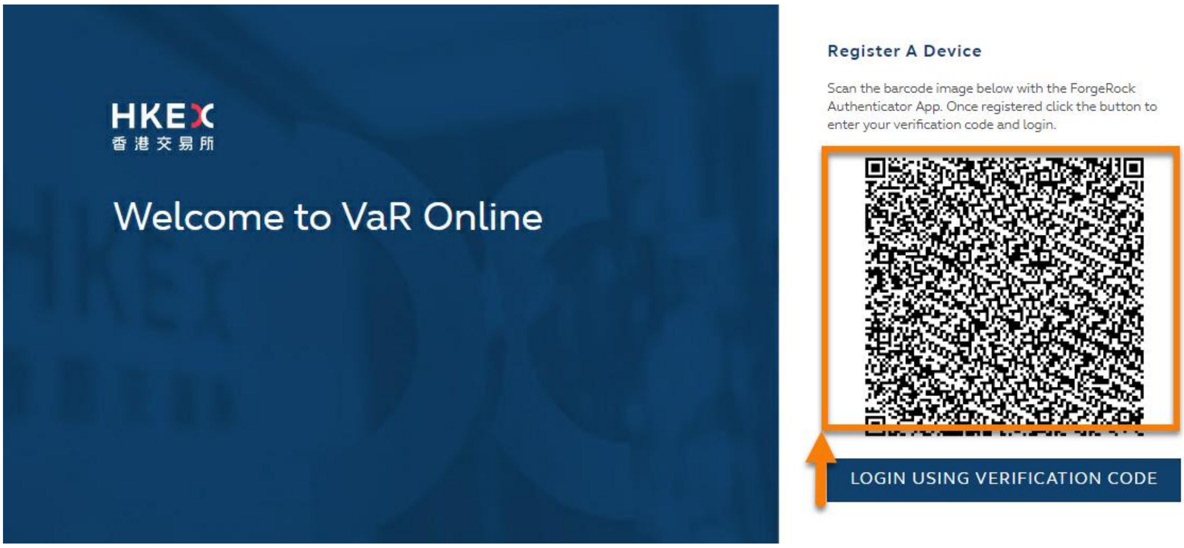
Remarks: The screen for this login session will time out in 6 minutes. Email OTP is valid for 5 minutes and it can only be requested every 5 minutes.

5. Please set-up your login password according to the password requirements and click <SUBMIT>. A message for successful set-up of password will be displayed.



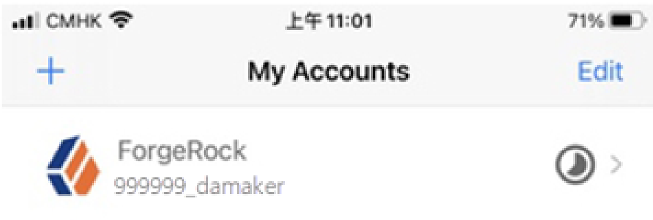
6. Navigate back to the login page and enter User ID, Password then click <LOG IN>.

7. You will be asked to register a mobile device, please click <REGISTER A DEVICE> and install ForgeRock Authenticator App in your mobile device. This application is available in both Google Play and Apple's App Store. If you have been using ForgeRock Authenticator for Client Connects' Logon, it is not necessary to download the same App again.

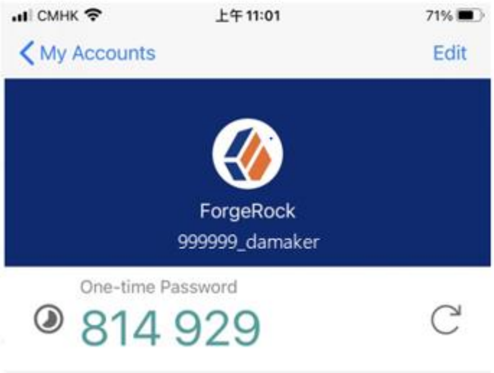


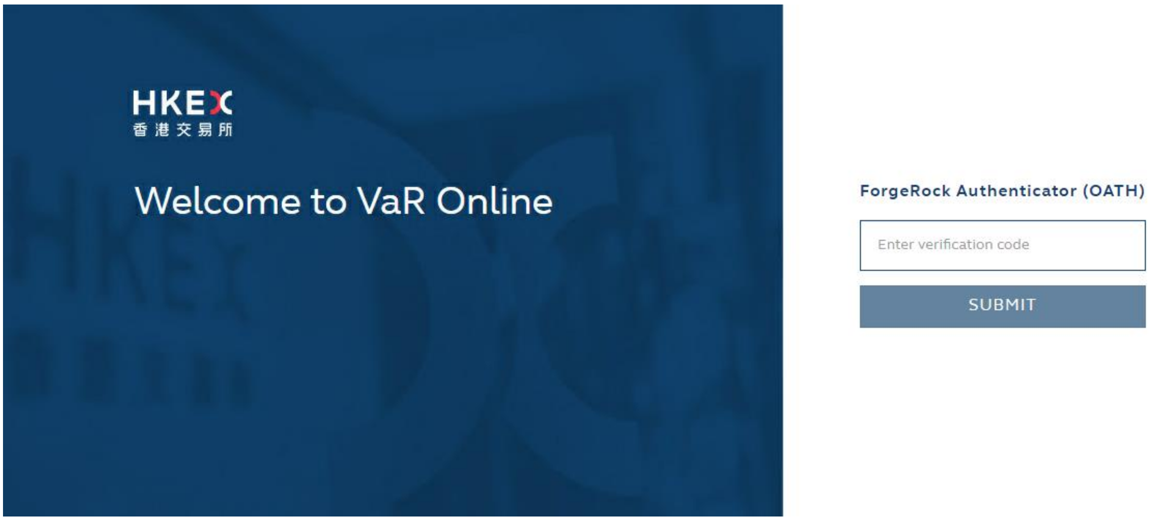
Note: This QR code will only display once. Please scan it using ForgeRock Authenticator App before clicking <LOGIN USING VERIFICATION CODE>. If not, your user account will require unlock to reset device registration. Please refer to section 2.1 ACCESS MANAGEMENT - Locked / Unlock User Account.

8. Click + sign to scan the QR code using your ForgeRock Authenticator App. You will see that your VaR DA Platform/ VaR Online account is registered in your App with your user ID. Then, click <LOGIN USING VERIFICATION CODE> via login page.



9. Your VaR DA Platform ID/ VaR Online user ID is stated on the list of accounts in ForgeRock Authenticator App. Click the account and then click ↻ to generate a One-time Password. Input OTP on login page then click <SUBMIT>.





10. You will be re-directed to VaR DA Platform/ VaR Online homepage when login is successful.

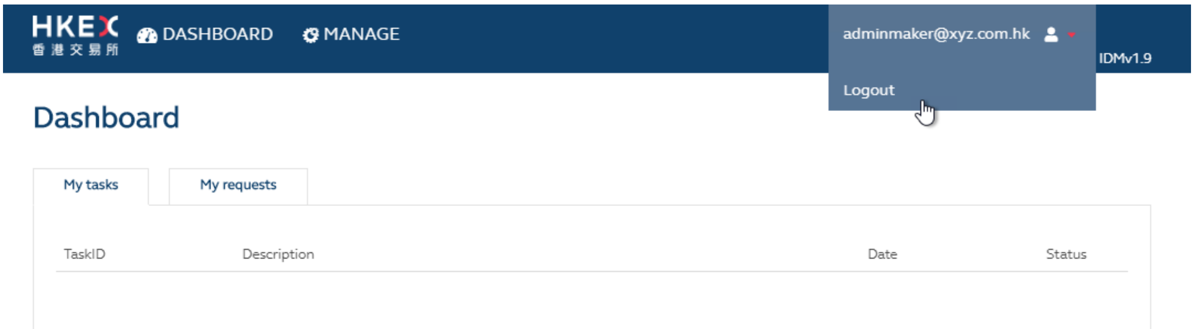
For subsequent login to VaR DA Platform/ VaR Online, users will have to provide (1) User ID, (2) Password; and (3) OTP from ForgeRock Authenticator App.

If a user is assigned with both VaR DA and VaR Online Business User roles, only one single login will be required. For example, after entering VaR DA Platform's URL and login successfully, user can enter VaR Online's URL to switch application without re-login and vice versa.

2.4.2 LOGOFF

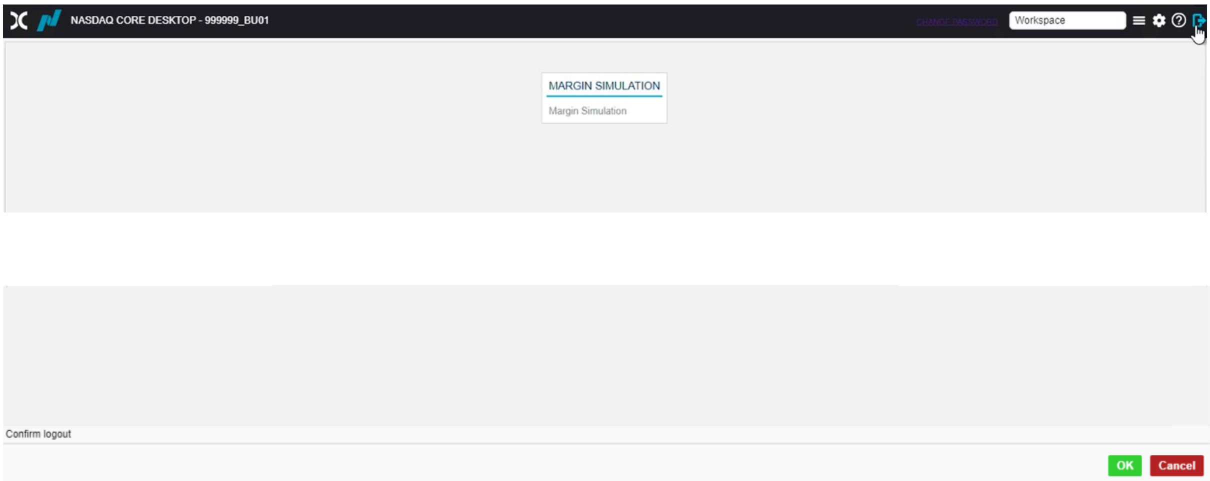
To prevent unauthorized access of VaR DA Platform/ VaR Online, please logoff every time after usage.

<u>Logoff via VaR DA Platform:</u>
Click the user email address on top right hand corner and then click <Logout>. You will be re-directed to VaR DA Platform login page.



<u>Logoff via VaR Online:</u>

Click the icon on the top right hand corner, then a confirmation message will display at the bottom. Please click <OK> to confirm.



3. Settings & Screen Standard

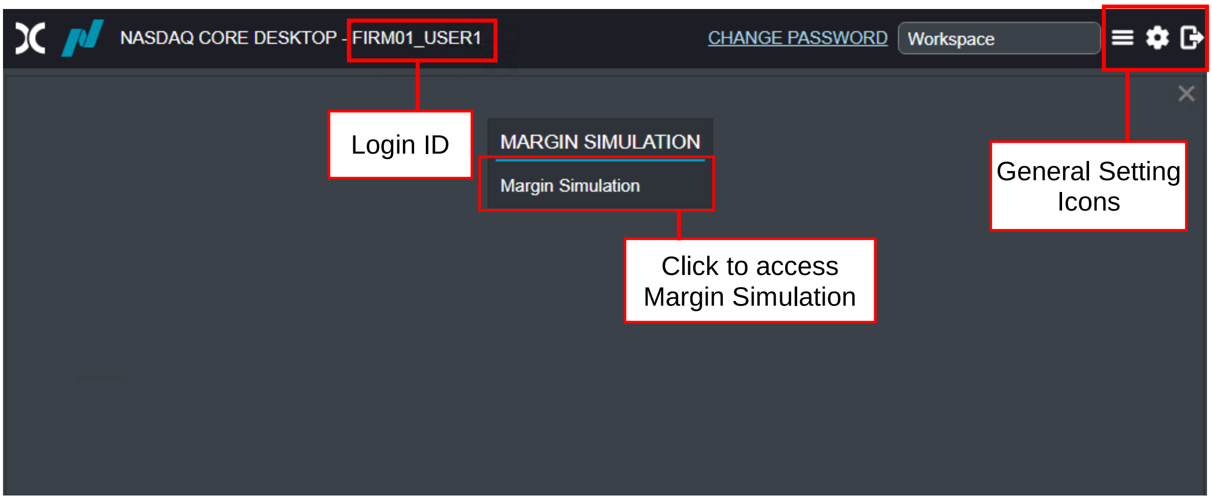
3.1 SETTING FOR INTERNET PROPERTIES

It is important to have proper setup for the protocols that can provide data encryption and authentication for “https” secure access. Before accessing VaR Online, Clearing Participants (CPs) should check and ensure their Google Chrome browser setting by referring to Section 6 of CCASS/ VaR Online/ RAP Technical Guide for HKSCC Participants.

3.2 MAIN VIEW STANDARDS

Upon login to VaR Online, the main view with Margin Simulation view will be displayed.

Example of the main view (in dark theme):



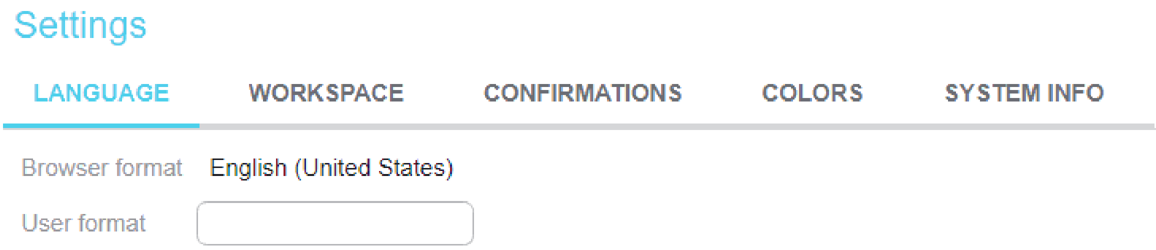
General Setting Icons

Icon	Description
Open pop-up menu	Click to open another view to display all available views
Settings	Click to manage settings for: • Language • Colors • System Info
Logout	Click to logout VaR Online

3.3 SETTINGS

1. Click the <Settings> icon to view the following tabs.

2. Five tabs will be displayed.



- Language
- Workspace *[not applicable]*
- Confirmations *[not applicable]*
- Colors
- System Info

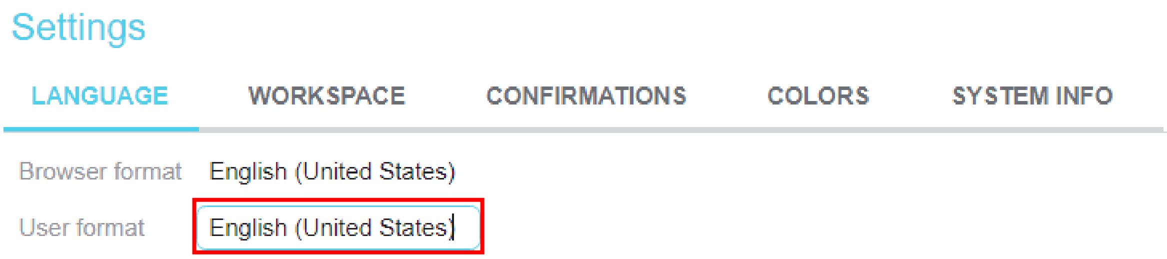
a) Language

There are 2 language selections. These selections are related to the format configured in the PC Region and Language settings.

The settings are important when exporting and importing ".csv files". To manage language settings, steps are as follows:

Click the <Language> tab.
- "Browser format" – display the current language setting of the browser
- "User format" – for setting VaR Online language

Please ensure the language in "User format" is set to "English (United States)".

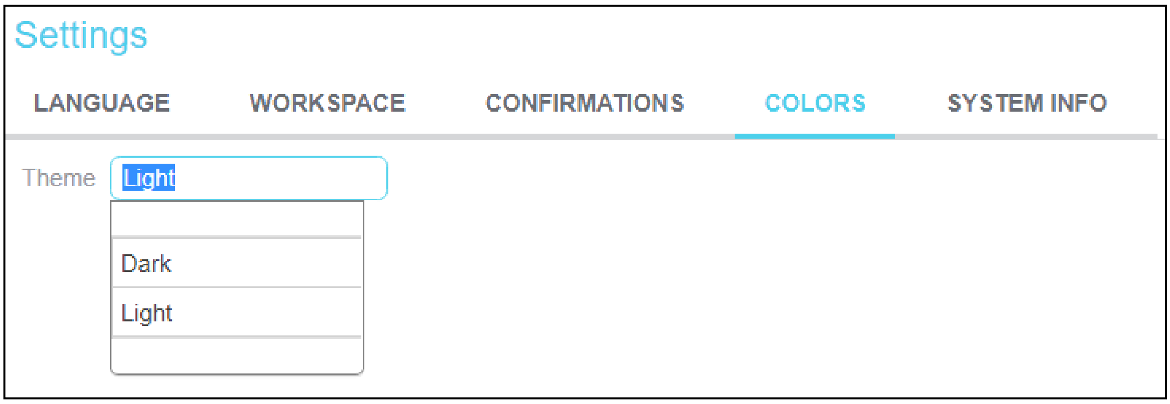


b) Colors

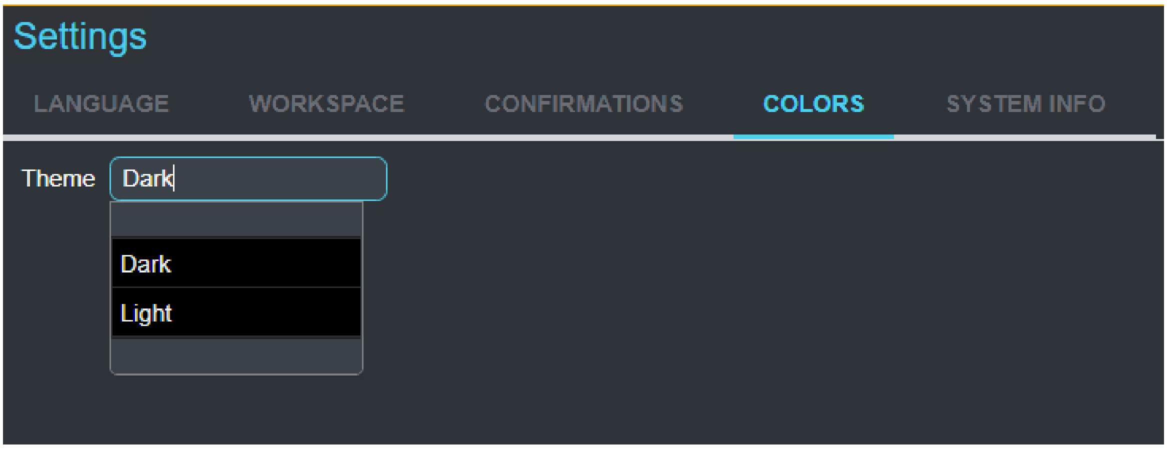
VaR Online can be configured with two color themes, i.e. Light or Dark. Steps are as follows:

1. Click the <Colors> tab.
2. Click <Theme> field and select <Light> or <Dark> theme.

Sample screen of light theme:

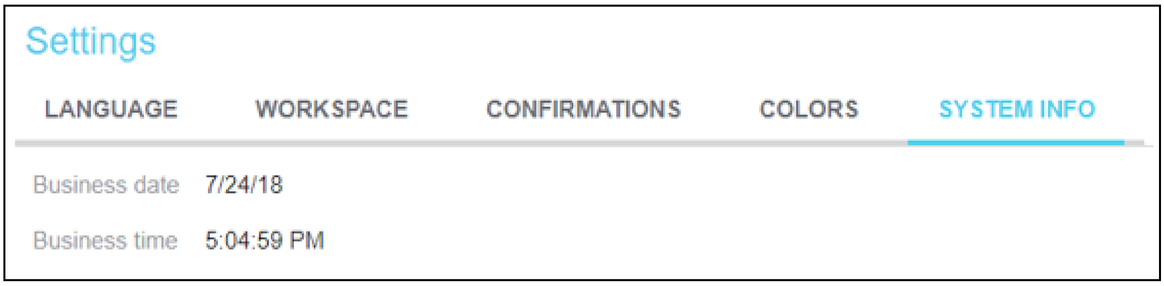


Sample screen of dark theme:



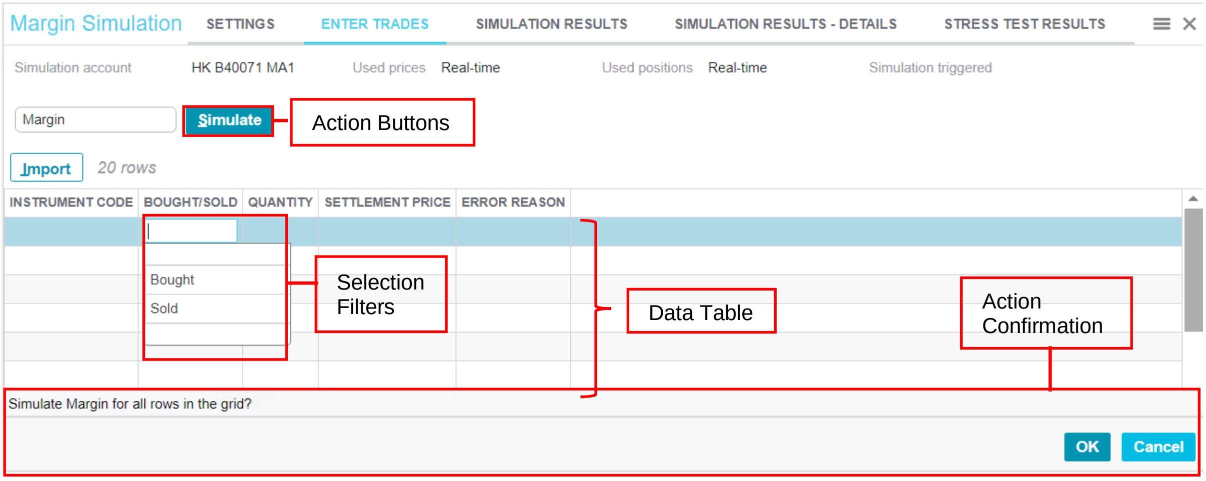
c) System Info

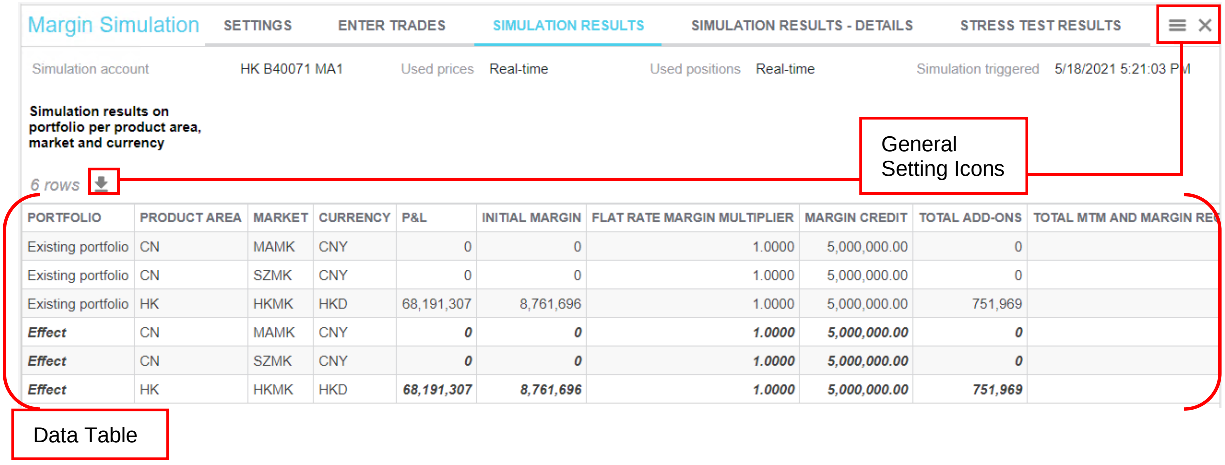
1. Click the <System Info> tab.
2. The system date and time snapshot will be displayed.



3.4 SCREEN STANDARD

VaR Online screens have the following common features, i.e. selection filters, data table, action buttons and general setting icons.





3.4.1 SELECTION FILTERS

Input a value in the input field under the selection filters area to retrieve the desired information. Mandatory input field will be marked with an * asterisk. Most of the input fields allow users to select the available value from a drop-down list, simply by typing a character in the input field to shortlist the available selection.

If an invalid value is input, the background color of the input field will change to red to alert the user. Once a valid value is entered, the input field will no longer be highlighted.

3.4.2 ACTION BUTTONS

Click action buttons on different tabs to perform respective actions. For example, click <Simulate> in the <ENTER TRADES> tab to conduct the selected simulation.

3.4.3 DATA TABLE

For display of data input or result after an action. For example, display the margin result after completion of simulation.

3.4.4 GENERAL SETTING ICONS

Icon	Description
Export 	Export data from the data table displayed in the view to a “.csv” file
Menu 	Close the current view and display all available views menu
Close 	Close the current view

4. Margin and Stress Test Simulation

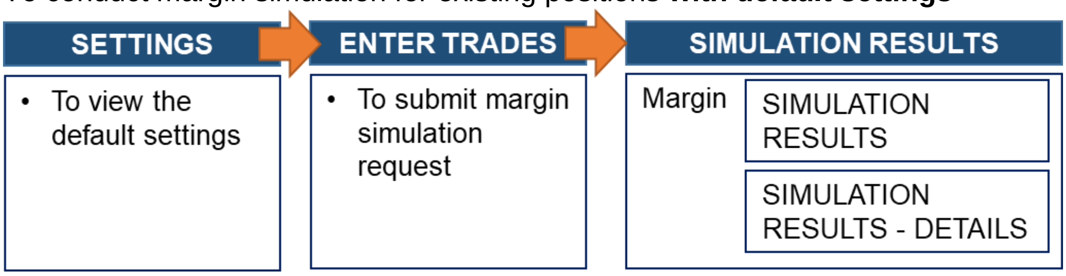
PURPOSE:

To conduct margin and/or stress test simulation for Hong Kong market, with

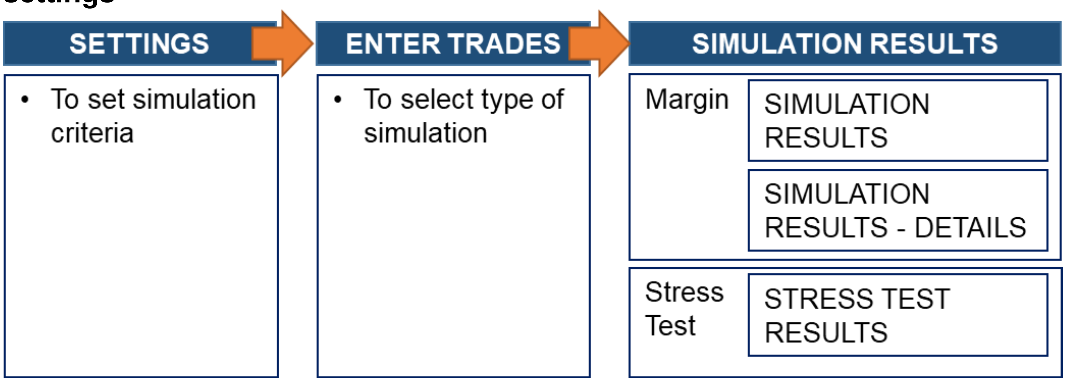
- latest available marginable positions; or
- latest available marginable positions with hypothetical trades; or
- hypothetical trades only

ACCESS PATHS:

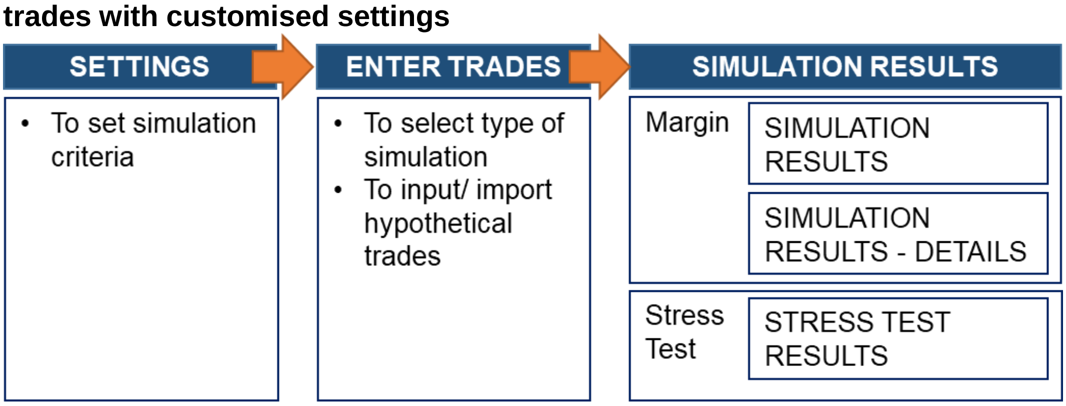
A. To conduct margin simulation for existing positions **with default settings**



B. To conduct margin **and/or stress test** simulation for existing positions **with customised settings**



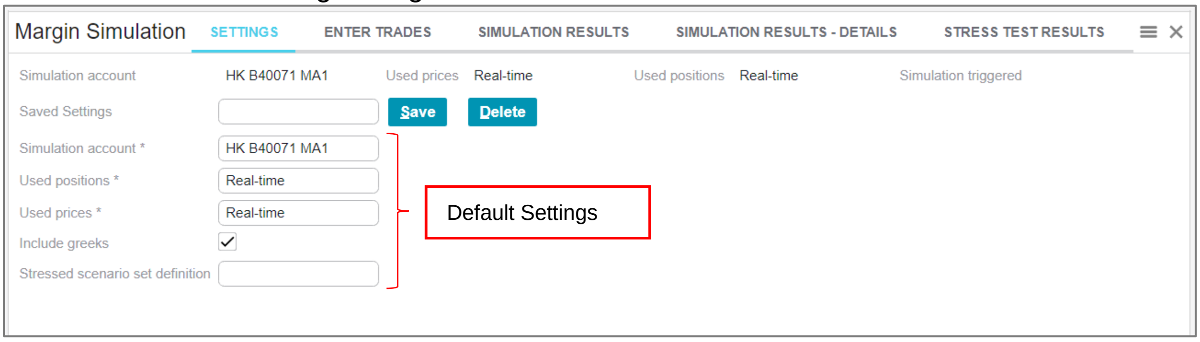
C. To conduct margin **and/or stress test** simulation for existing positions **plus hypothetical trades with customised settings**



4.1 SIMULATION WITH DEFAULT SETTINGS (ACCESS PATH – A)

4.1.1 SETTINGS

Default view after clicking <Margin Simulation> on main view



Field	Description
Simulation account*	• Default as “HK <Part ID> MA1” ▪ **HK** exchange location ▪ **MA1** marginable “Main Account”, to be used for simulation *Applicable to GCP:* Main Account capturing marginable positions of GCP its own and its Non-Clearing Participants.
Used position*	• Default as “Real-time” ▪ **Real-time** use the latest available marginable positions in VaR Online for the simulation
Used prices*	• Default as “Real-time” ▪ **Real-time** use the latest available prices in VaR Online for simulation
Include greeks	*Not applicable for simulation, reserved for future use*
Stressed scenario set definition	• Default as blank • Only applicable to “Stress Test” or “Margin and Stress Test” simulation

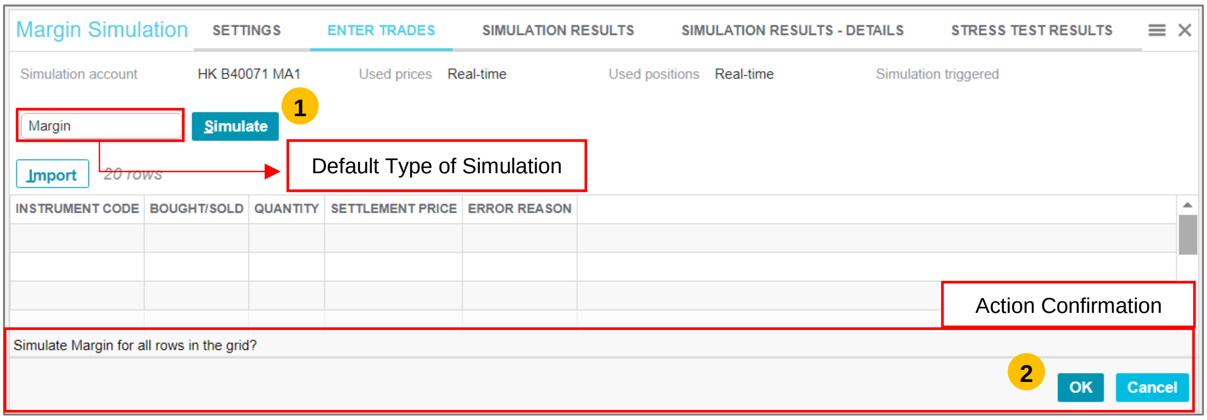
Note: * Mandatory fields

4.1.2 ENTER TRADES

The default type of simulation is “Margin”, which is mark-to-market and margin simulation only; results to be displayed via <SIMULATION RESULTS> and <SIMULATION RESULTS – DETAILS> tabs.

The simulation processing time may varies subject to system scheduled jobs.

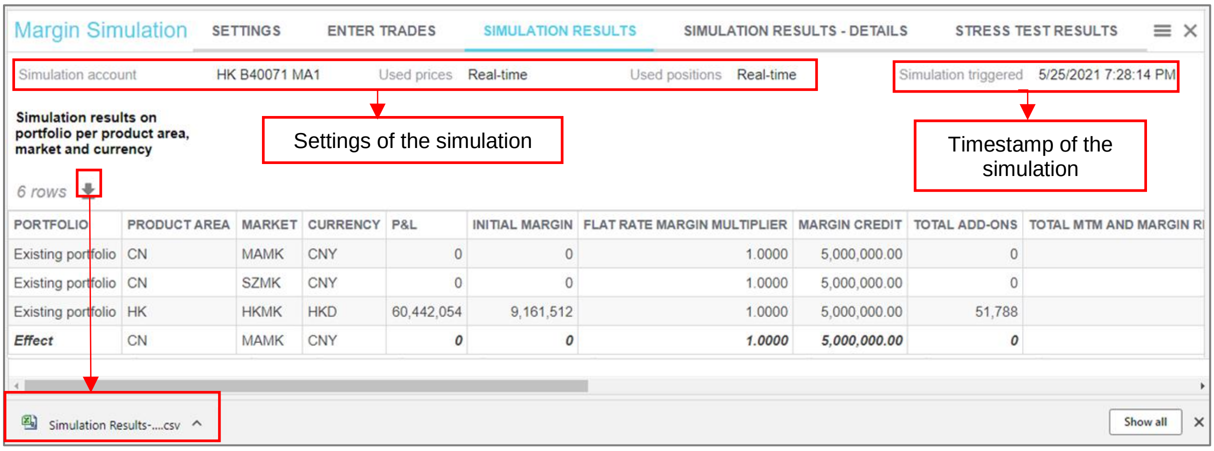
Click <ENTER TRADES> tab and click <Simulate> to proceed the margin simulation



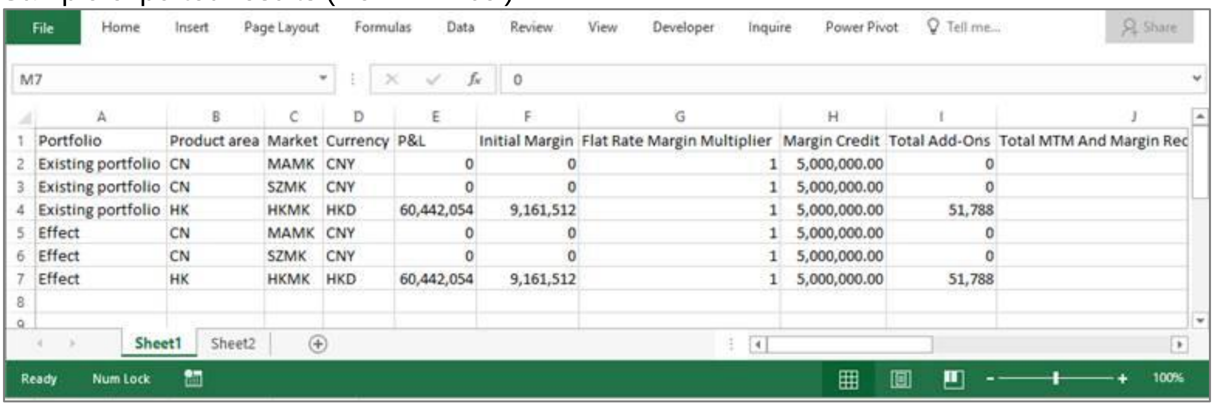
4.1.2.1 TO VIEW MARGIN SIMULATION RESULTS

1. Click < SIMULATION RESULTS> tab, to display the simulation result
2. Click the "Export" button to download the simulation results as a CSV file

Sample screen:



Sample exported results (view in Excel):



Description of fields:

Field	Description
PORTFOLIO	• Existing portfolio: simulation based on existing portfolio (latest available marginable positions in VaR Online) without hypothetical trades

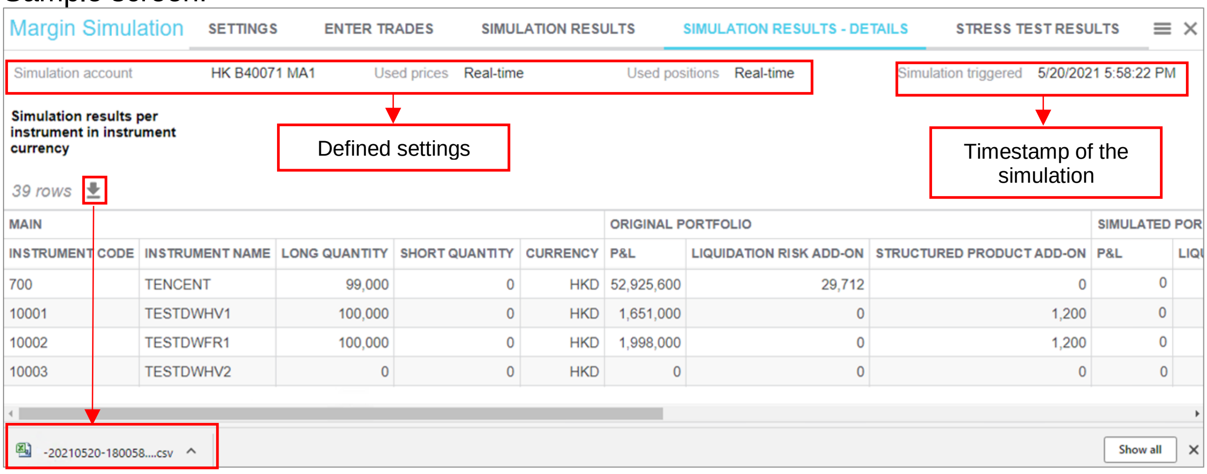
Field	Description
PRODUCT AREA	• Displays the location of the market, i.e. HK – Hong Kong
MARKET	• Displays the market code ▪ HKMK – Hong Kong market ▪ MAMK – Shanghai market ▪ SZMK – Shenzhen market • Simulation is only applicable to Hong Kong market, the results for Shanghai and Shenzhen market are reserved for future use
CURRENCY	• Displays the currency of the simulation results, i.e. HKD – Hong Kong dollar
P&L	• Mark-to-market (MTM), in Hong Kong dollar equivalent ▪ Positive value: unfavorable MTM ▪ Negative value: favorable MTM
INITIAL MARGIN	• Sum of various margins: ▪ portfolio margin + flat rate margin + corporate action position margin
FLAT RATE MARGIN MULTIPLIER	• Flat rate margin multiplier
MARGIN CREDIT	• Margin credit which is granted to each Clearing Participant and applied for Margin calculation
TOTAL ADD-ONS	• Sum of all add-ons. The total add-ons will be included in TOTAL MTM AND MARGIN REQUIREMENT, except default fund add-on
TOTAL MTM AND MARGIN REQUIREMENT	• Total MTM and margin requirement incorporate add-ons, if any, except default fund add-on
AD-HOC ADD-ON	• Ad hoc risk component related to individual CP imposed by HKSCC, if applicable
LIQUIDATION RISK ADD-ON	• Risk component related to the liquidity risk of concentrated positions
HOLIDAY ADD-ON	• Always “0”, reserved for future use, market risk component related to additional risk during holiday period
CREDIT RISK ADD-ON	• Always “0”, reserved for future use, risk component related to individual CP’s credit risk imposed by HKSCC, if applicable
DEFAULT FUND ADD-ON	• Always “0”, reserved for future use, risk component to mitigate excessive risk exposures of individual CP on

Field	Description
	Default Fund. If any, will be collected separately from Total MTM and Margin Requirement
POSITION LIMIT ADD-ON	• Risk component related to settlement counterparty risk arising from excessive CNS exposure against CP's apportioned liquid capital
STRUCTURED PRODUCT ADD-ON	• Risk component to handle the huge percentages loss resulting from downward price movement approaching the minimum security prices for long structured product positions

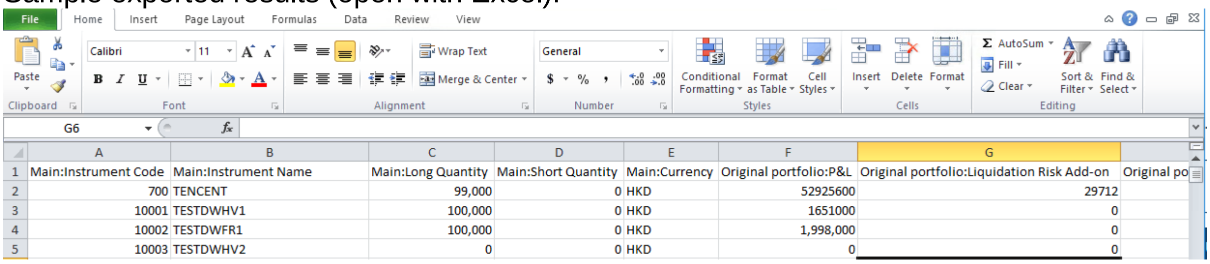
4.1.2.2 TO VIEW MARGIN SIMULATION RESULTS DETAILS

1. Click < SIMULATION RESULTS - DETAILS> tab, to display the simulation result details
2. Click the "Export" button to download the simulation results as a CSV file

Sample screen:



Sample exported results (open with Excel):



Description of fields:

Field	Description
MAIN	
INSTRUMENT CODE	• CCASS stock code
INSTRUMENT NAME	• Name of the CCASS stock

Field	Description
LONG QUANTITY	• Quantity of long position, including allocated quantity
SHORT QUANTITY	• Quantity of short position
CURRENCY	• Currency of the instrument, i.e. HKD – Hong Kong dollar
The following columns are applicable to • **ORIGINAL PORTFOLIO** – *available marginable positions without hypothetical trades* • **SIMULATED PORTFOLIO** – *available marginable positions with hypothetical trades (not applicable to Access Path – A)*	
P&L	• Mark-to-market (MTM) ▪ Positive value as unfavorable MTM ▪ Negative value as favorable MTM • After netting and FX conversion, the sum of the P&L in Hong Kong dollar will be the P&L in <SIMULATION RESULTS> tab
LIQUIDATION RISK ADD-ON	• Risk component related to the liquidity risk of concentrated positions • The liquidation risk add-on of structured products, if any, will be incorporated into the marginable position of the underlying instrument in HKD-equivalent • If no corresponding marginable position of the underlying instrument, a record of the underlying instrument will be shown exclusively for liquidation risk add-on. If the underlying instrument is a non-HKD instrument, the record will be shown in instrument currency while the liquidation add-on will be in HKD-equivalent.
STRUCTURED PRODUCT ADD-ON	• Risk component to handle the huge percentages loss resulting from downward price movement approaching the minimum security prices for long structured product positions

Note: Greeks is reserved for future use, Clearing Participants should ignore these columns: Cash Delta, Cash Gamma (%), Vega, Theta

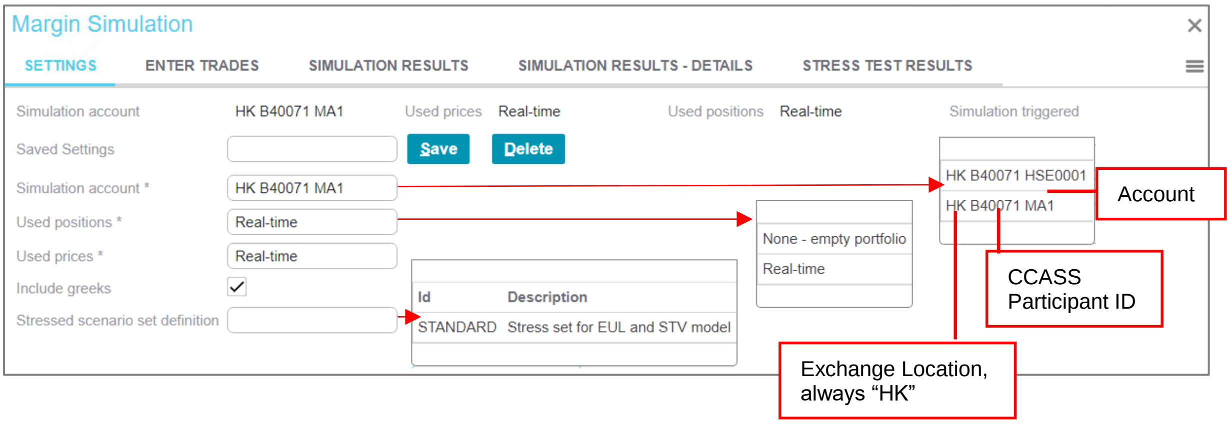
4.2 SIMULATION WITH CUSTOMISED SETTINGS (ACCESS PATHS – B & C)

Clearing participants can define the simulation criteria, type of simulation and hypothetical trades in <SETTINGS> and <ENTER TRADES> tabs.

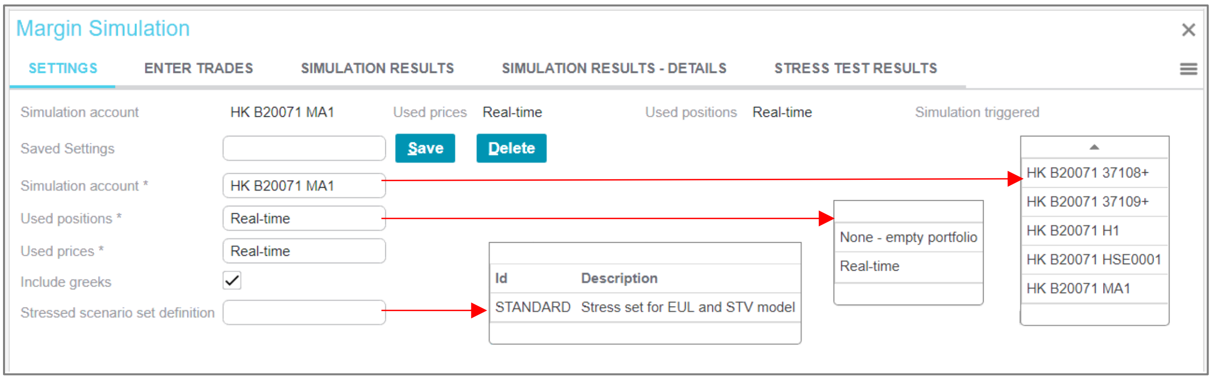
4.2.1 SETTINGS

- To define settings for simulation
- To save frequently-used settings for future simulation

Direct Clearing Participant (DCP)'s default view after clicking <Margin Simulation> on main view:



General Clearing Participant (GCP)’s default view after clicking <Margin Simulation> on main view:



Description of fields:

Field	Description
Part A. Save and manage frequent-use settings (optional)	

Saved Settings	• To save new setting or retrieve saved setting for use/deletion
	• A maximum of 50 settings can be saved per user
	• To create and save a setting:
	  ▪ Input a name within 30 characters in “Saved Settings”
	  ▪ Refer to Part B to select the settings
	  ▪ Click <Save> button to save the settings
	• To retrieve a saved setting for simulation or update:
	  ▪ Click on the field and select the saved setting from the dropdown menu
	  ▪ Upon selection, the saved setting will be displayed
	  ▪ Click <ENTER TRADES> tab for simulation or update the saved setting and click <Save> button to save the updates
	• To delete a saved settings:
	  ▪ Select the corresponding setting from the dropdown menu and click <Delete> button

Part B. Define single use settings for the simulation	

Simulation account*	• Mandatory field – default as “HK <Part ID> MA1’”
	  ▪ **HK** exchange location
	  ▪ **MA1** marginable “Main Account”, to be used for simulation. For GCP, it is capturing all

Field	Description
	marginable positions of GCP and its Non-Clearing Participants (NCPs) for simulation ▪ ***HSE001*** *collateral "HOUSE" account is NOT applicable for simulation, please ignore* *Applicable to GCP:* Main Account capturing marginable positions of GCP its own (**H1**) and its Non-Clearing Participants (NCPs denoted as **nnnnn+**). GCP may select H1 or nnnnn+ for margin simulation and the time of availability of these accounts are: ▪ **H1** only available in end of day ▪ **nnnnn+** will be updated before intra-day margin call and end of day
Used position*	• Mandatory field – click to select from the dropdown menu ▪ **None – empty portfolio** use only the input/imported hypothetical trades for the simulation ▪ **Real-time** use the latest available marginable positions in VaR Online with or without the input/imported hypothetical trades for the simulation
Used prices*	• Mandatory field – always "Real-time" ▪ **Real-time** use the latest available prices in VaR Online for simulation
Include greeks	*Not applicable for simulation, reserved for future use*
Stressed scenario set definition	• Leave blank for "Margin" simulation only • Mandatory field – for "Stress Test" or "Margin and Stress Test" simulation ▪ Click to select "Standard" from the dropdown menu

4.2.2 ENTER TRADES

To conduct the following 3 types of simulation:

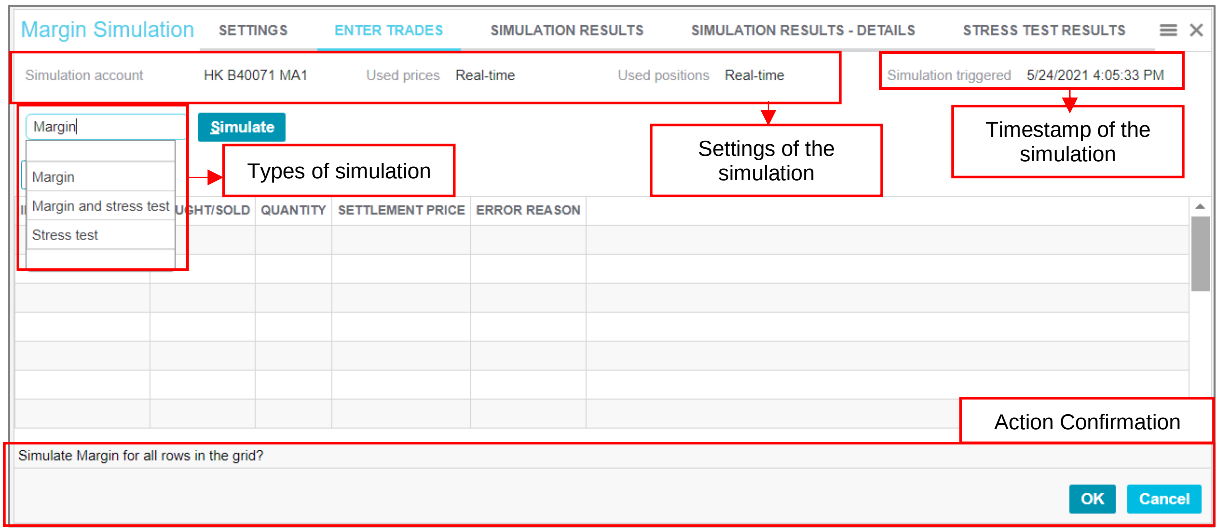
- **Margin**: mark-to-market and margin simulation only; results to be displayed via <SIMULATION RESULTS> and <SIMULATION RESULTS – DETAILS> tabs
- **Stress test**: stress test simulation only; result to be displayed via <STRESS TEST RESULTS> tab
- **Margin and stress test**: mark-to-market and margin simulation; together with stress test simulation; results to be displayed via <SIMULATION RESULTS>, <SIMULATION RESULTS – DETAILS> and <STRESS TEST RESULTS> tabs

The simulation processing time may varies subject to system scheduled jobs.

4.2.2.1 TO CONDUCT MARGIN AND/OR STRESS TEST SIMULATION WITH LATEST AVALIABLE MARGINABLE POSITIONS ONLY

1. Click <ENTER TRADES> tab, the defined settings will be displayed.
2. Select the type of simulation, i.e. "Margin", "Margin and stress test" or "Stress test"
3. Click <Simulate> button and click <OK> to confirm the simulation

4. Go to Section 4.2.3 to view the results



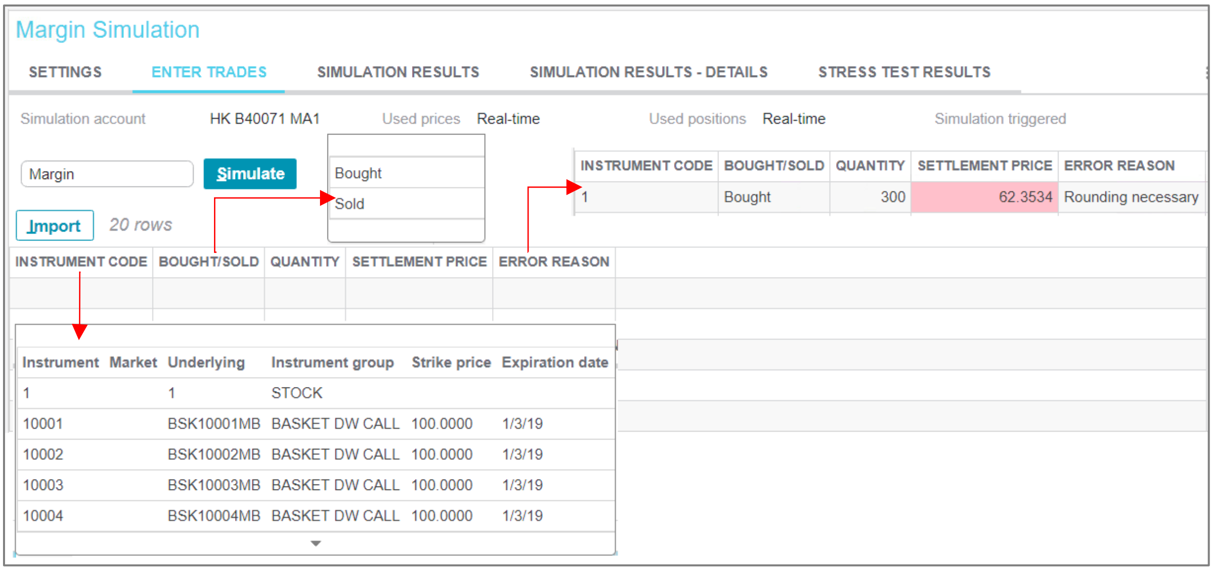
4.2.2.2 TO CONDUCT MARGIN AND/OR STRESS TEST SIMULATION WITH HYPOTHETICAL TRADES

A maximum of **500** hypothetical trades can be used for simulation.

4.2.2.2.1 MANUAL INPUT HYPOTHETICAL TRADES

1. Click <ENTER TRADES> tab, the defined settings will be displayed
2. Select the type of simulation, i.e. “Margin”, “Margin and stress test” or “Stress test”
3. Input up to 20 trades details by clicking the respective data fields to input or select from the dropdown menu. Please refer to Section 4.2.2.2.2 for trades import by Comma Separated Values (CSV) file
4. Click <Simulate> button and then <OK> to confirm the simulation
5. Go to Section 4.2.3 to view the result

Sample screen:



Description of fields:

Field	Description
INSTRUMENT CODE	• CCASS stock code • Click and select a valid instrument code from the dropdown menu; or input directly • IPO stock code only valid from listing date onward • Display the instrument code of the hypothetical trades
BOUGHT/SOLD	• Click and select Bought (long CNS position) or Sold (short CNS positions) from the dropdown menu; or input directly • Display the bought or sold of the hypothetical trades
QUANTITY	• Input the quantity of the hypothetical trades • Display the quantity of the hypothetical trades
SETTLEMENT PRICE	• Input the unit price of the hypothetical trades (up to 3 decimal places), i.e. price per share • Display the settlement price of the hypothetical trades
ERROR REASON	• If there is invalid input, error messages will be displayed with the corresponding error highlighted in red shading • Examples of error reasons: ▪ Invalid instrument ▪ Invalid entry, e.g. non numeric quantity or settlement price ▪ Excess decimal input, e.g. settlement price with more than 3 decimal places ▪ Excess the maximum number of hypothetical trades, i.e. 500

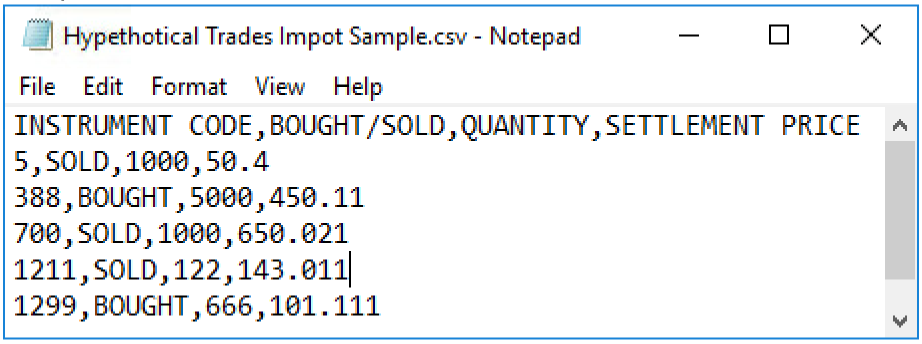
4.2.2.2.2 IMPORT CSV FILE WITH HYPOTHETICAL TRADES

1. Click <ENTER TRADES> tab, the defined settings will be displayed.

2. Select the type of simulation, i.e. “Margin”, “Margin and stress test” or “Stress test”
3. Click <Import> button to select a Comma Separated Values (CSV) file for import
4. Click <Simulate> button and then <OK> to confirm the simulation
5. Go to Section 4.2.3 to view the result

The CSV file must come with the correct headers for identifying the corresponding required fields: Instrument code (i.e. CCASS stock code), Bought/Sold, Quantity and Settlement Price.

Sample CSV file:



Hypethotical Trades Impot Sample.csv - Notepad

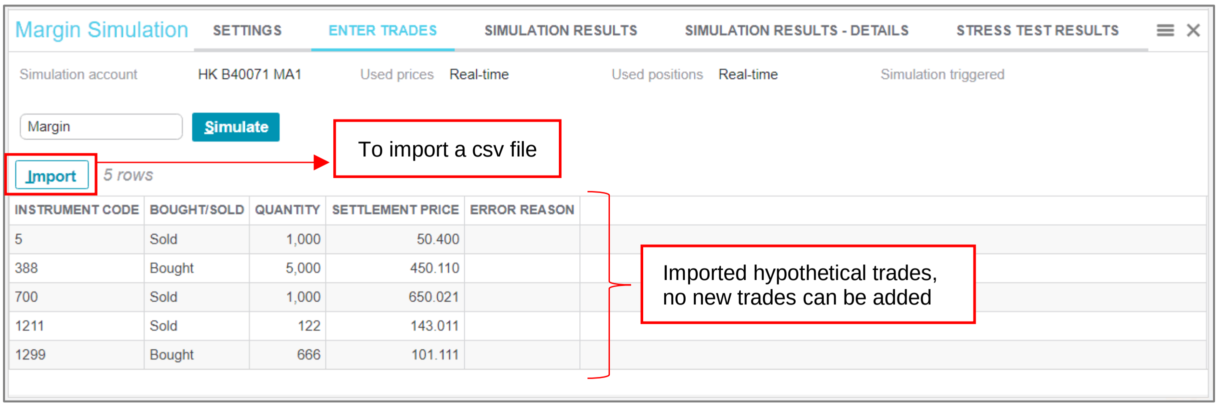
File Edit Format View Help

```
INSTRUMENT CODE,BOUGHT/SOLD,QUANTITY,SETTLEMENT PRICE
5,SOLD,1000,50.4
388,BOUGHT,5000,450.11
700,SOLD,1000,650.021
1211,SOLD,122,143.011
1299,BOUGHT,666,101.111
```

The imported CSV file will replace all existing hypothetical trades. You may further amend the hypothetical trades but for adding more trades, you should import another CSV file.

Currently, this import function supports up to **500** trades.

Sample screen:



INSTRUMENT CODE	BOUGHT/SOLD	QUANTITY	SETTLEMENT PRICE	ERROR REASON
5	Sold	1,000	50.400	
388	Bought	5,000	450.110	
700	Sold	1,000	650.021	
1211	Sold	122	143.011	
1299	Bought	666	101.111	

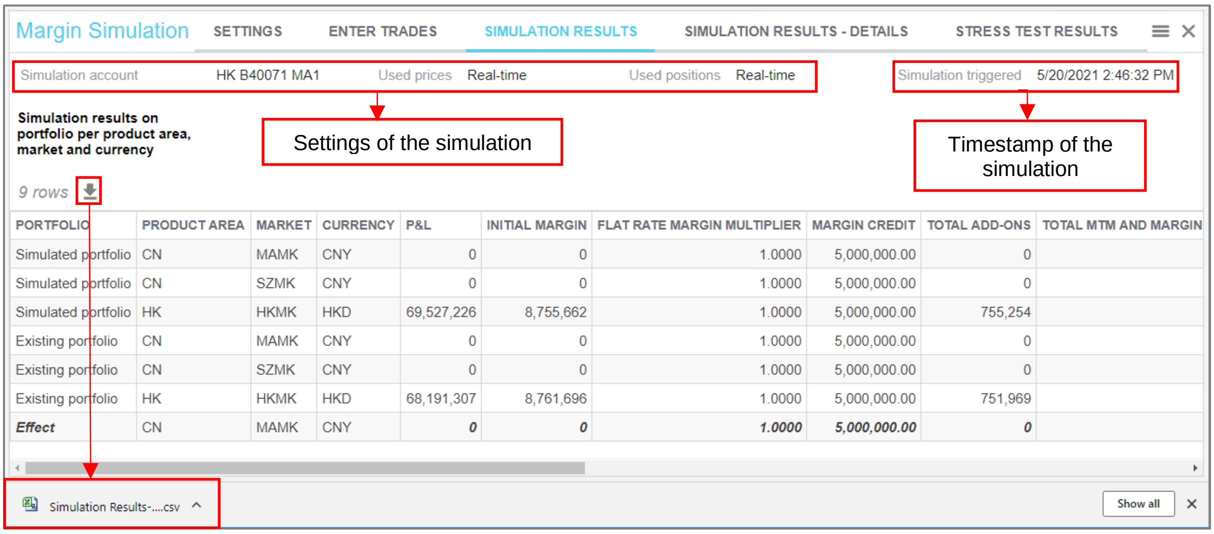
4.2.3 SIMULATION RESULTS

To view and export the simulation results for Hong Kong market. The simulation results for Shanghai and Shenzhen markets are reserved for future use.

4.2.3.1 TO VIEW MARGIN SILUMATION RESULTS

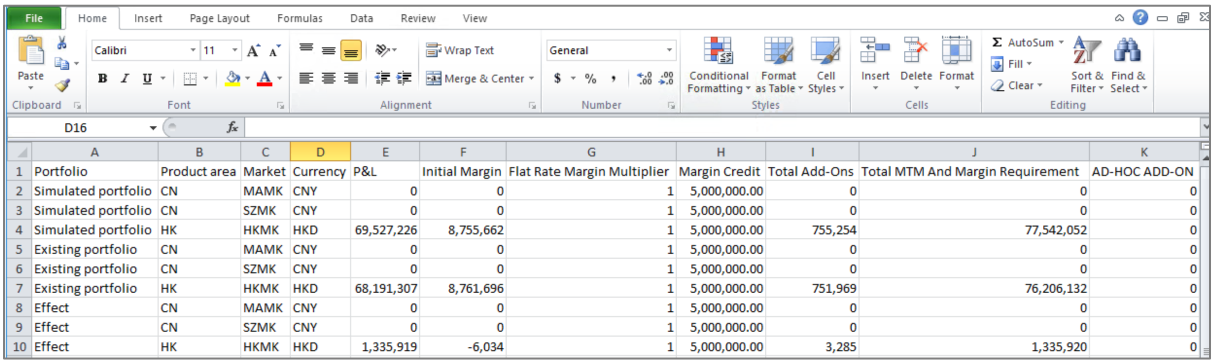
1. Click < SIMULATION RESULTS> tab, to display the simulation result
2. Click the “Export” button to download the simulation results as a CSV file

Sample screen:



PORTFOLIO	PRODUCT AREA	MARKET	CURRENCY	P&L	INITIAL MARGIN	FLAT RATE MARGIN MULTIPLIER	MARGIN CREDIT	TOTAL ADD-ONS	TOTAL MTM AND MARGIN
Simulated portfolio	CN	MAMK	CNY	0	0	1.0000	5,000,000.00	0	
Simulated portfolio	CN	SZMK	CNY	0	0	1.0000	5,000,000.00	0	
Simulated portfolio	HK	HKMK	HKD	69,527,226	8,755,662	1.0000	5,000,000.00	755,254	
Existing portfolio	CN	MAMK	CNY	0	0	1.0000	5,000,000.00	0	
Existing portfolio	CN	SZMK	CNY	0	0	1.0000	5,000,000.00	0	
Existing portfolio	HK	HKMK	HKD	68,191,307	8,761,696	1.0000	5,000,000.00	751,969	
Effect	CN	MAMK	CNY	*0*	*0*	*1.0000*	*5,000,000.00*	*0*	

Sample exported results (view in Excel):



	A	B	C	D	E	F	G	H	I	J	K
1	Portfolio	Product area	Market	Currency	P&L	Initial Margin	Flat Rate Margin Multiplier	Margin Credit	Total Add-Ons	Total MTM And Margin Requirement	AD-HOC ADD-ON
2	Simulated portfolio	CN	MAMK	CNY	0	0	1	5,000,000.00	0	0	0
3	Simulated portfolio	CN	SZMK	CNY	0	0	1	5,000,000.00	0	0	0
4	Simulated portfolio	HK	HKMK	HKD	69,527,226	8,755,662	1	5,000,000.00	755,254	77,542,052	0
5	Existing portfolio	CN	MAMK	CNY	0	0	1	5,000,000.00	0	0	0
6	Existing portfolio	CN	SZMK	CNY	0	0	1	5,000,000.00	0	0	0
7	Existing portfolio	HK	HKMK	HKD	68,191,307	8,761,696	1	5,000,000.00	751,969	76,206,132	0
8	Effect	CN	MAMK	CNY	0	0	1	5,000,000.00	0	0	0
9	Effect	CN	SZMK	CNY	0	0	1	5,000,000.00	0	0	0
10	Effect	HK	HKMK	HKD	1,335,919	-6,034	1	5,000,000.00	3,285	1,335,920	0

Description of fields:

Field	Description
PORTFOLIO	• Existing portfolio: simulation based on existing portfolio (latest available marginable positions in VaR Online) without hypothetical trades • Simulated portfolio: simulation based on existing portfolio, together with hypothetical trades (latest available marginable positions plus hypothetical trades) • Effect: Net changes from existing portfolio results to simulated portfolio results
PRODUCT AREA	• Displays the location of the market, i.e. HK – Hong Kong
MARKET	• Displays the market code ▪ HKMK – Hong Kong market ▪ MAMK – Shanghai market ▪ SZMK – Shenzhen market • Simulation is only applicable to Hong Kong market, the results for Shanghai and Shenzhen market are reserved for future use
CURRENCY	• Displays the currency of the simulation results, i.e. HKD – Hong Kong dollar

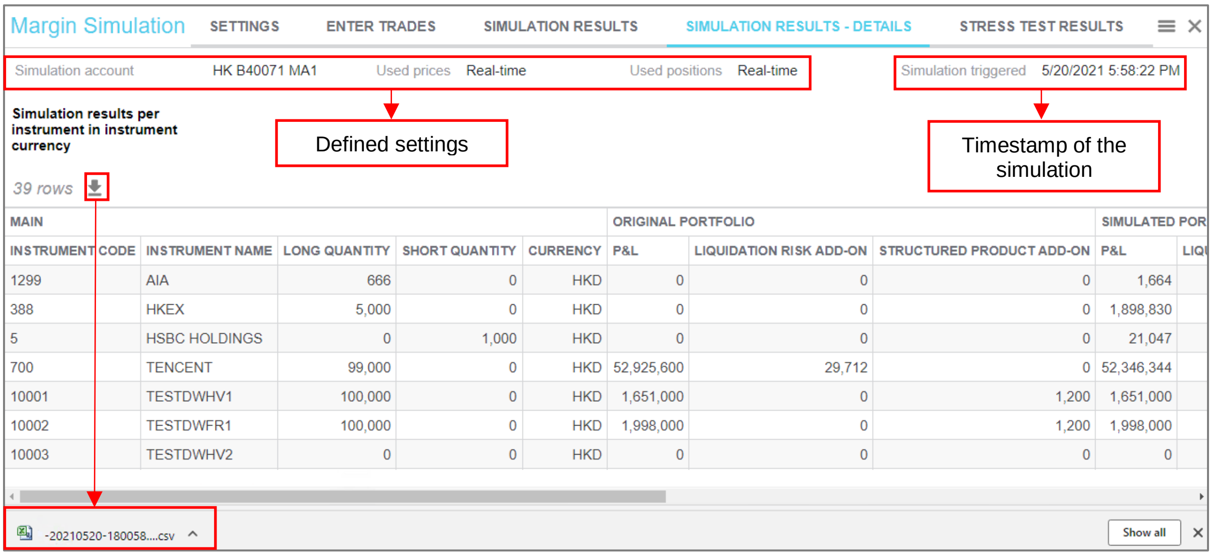
Field	Description
P&L	• Mark-to-market (MTM), in Hong Kong dollar equivalent ▪ Positive value: unfavorable MTM ▪ Negative value: favorable MTM
INITIAL MARGIN	• Sum of various margins: ▪ portfolio margin + flat rate margin + corporate action position margin
FLAT RATE MARGIN MULTIPLIER	• Flat rate margin multiplier
MARGIN CREDIT	• Margin credit which is granted to each Clearing Participant and applied for Margin calculation
TOTAL ADD-ONS	• Sum of all add-ons. The total add-ons will be included in TOTAL MTM AND MARGIN REQUIREMENT, except default fund add-on
TOTAL MTM AND MARGIN REQUIREMENT	• Total MTM and margin requirement incorporate add-ons, if any, except default fund add-on
AD-HOC ADD-ON	• Ad hoc risk component related to individual CP imposed by HKSCC, if applicable *Applicable to Main Account (MA1) only*
LIQUIDATION RISK ADD-ON	• Risk component related to the liquidity risk of concentrated positions *Applicable to Main Account (MA1) only*
HOLIDAY ADD-ON	• Always “0”, reserved for future use, market risk component related to additional risk during holiday period *Applicable to Main Account (MA1) only*
CREDIT RISK ADD-ON	• Always “0”, reserved for future use, risk component related to individual CP’s credit risk imposed by HKSCC, if applicable *Applicable to Main Account (MA1) only*
DEFAULT FUND ADD-ON	• Always “0”, reserved for future use, risk component to mitigate excessive risk exposures of individual CP on Default Fund. If any, will be collected separately from Total MTM and Margin Requirement *Applicable to Main Account (MA1) only*
POSITION LIMIT ADD-ON	• Risk component related to settlement counterparty risk arising from excessive CNS exposure against CP’s apportioned liquid capital

Field	Description
	Applicable to Main Account (MA1) only
STRUCTURED PRODUCT ADD-ON	• Risk component to handle the huge percentages loss resulting from downward price movement approaching the minimum security prices for long structured product positions *Applicable to Main Account (MA1) only*

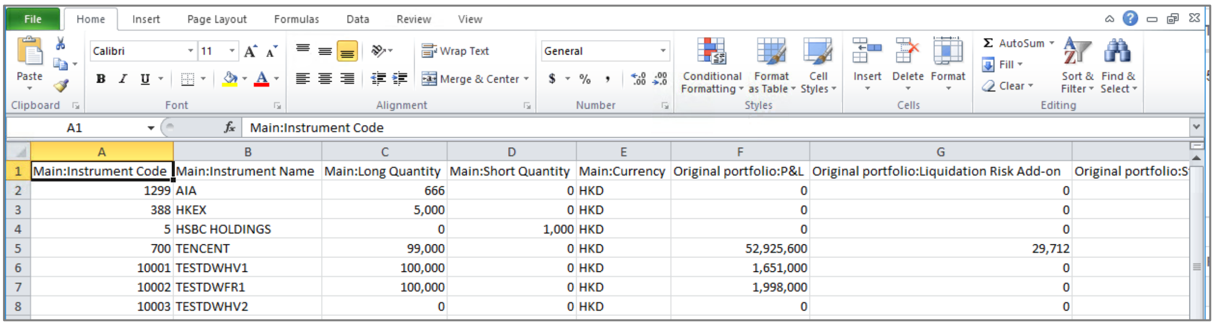
4.2.3.2 TO VIEW MARGIN SIMULATION RESULTS DETAILS

1. Click < SIMULATION RESULTS - DETAILS> tab, to display the simulation result details
2. Click the “Export” button to download the simulation results as a CSV file

Sample screen:



Sample exported results (open with Excel):



Description of fields:

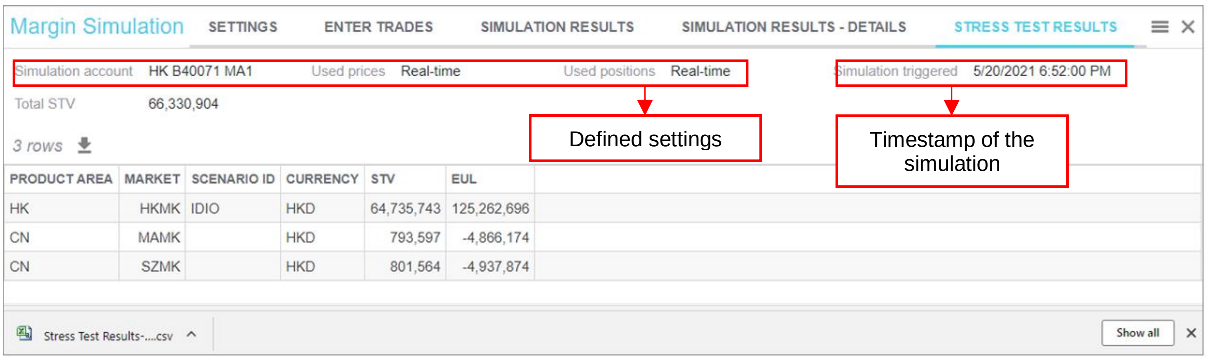
Field	Description
MAIN	
INSTRUMENT CODE	• CCASS stock code
INSTRUMENT NAME	• Name of the CCASS stock
LONG QUANTITY	• Quantity of long position, including allocated quantity
SHORT QUANTITY	• Quantity of short position
CURRENCY	• Currency of the instrument, i.e. HKD – Hong Kong dollar
The following columns are applicable to • **ORIGINAL PORTFOLIO** – *available marginable positions without hypothetical trades* • **SIMULATED PORTFOLIO** – *available marginable positions with hypothetical trades*	
P&L	• Mark-to-market (MTM) ▪ Positive value as unfavorable marks ▪ Negative value as favorable marks • After netting and FX conversion, the sum of the P&L in Hong Kong dollar will be the P&L in <SIMULATION RESULTS> tab
LIQUIDATION RISK ADD-ON	• Risk component related to the liquidity risk of concentrated positions • The liquidation risk add-on of structured products, if any, will be incorporated into the marginable position of the underlying instrument in HKD-equivalent • If no corresponding marginable position of the underlying instrument, a record of the underlying instrument will be shown exclusively for liquidation risk add-on. If the underlying instrument is a non-HKD instrument, the record will be shown in instrument currency while the liquidation add-on will be in HKD-equivalent. *Applicable to Main Account (MA1) only*
STRUCTURED PRODUCT ADD-ON	• Risk component to handle the huge percentages loss resulting from downward price movement approaching the minimum security prices for long structured product positions *Applicable to Main Account (MA1) only*

Note: *Greeks is reserved for future use, Clearing Participants should ignore these columns: Cash Delta, Cash Gamma (%), Vega, Theta*

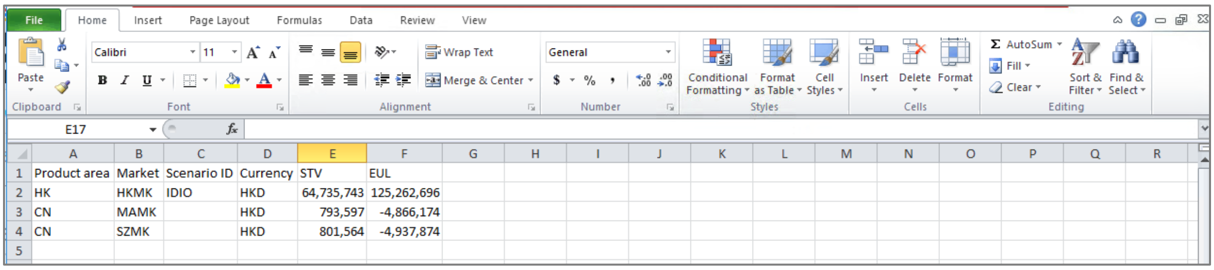
4.2.3.3 TO VIEW STRESS TEST SIMULATION RESULTS

1. Click < STRESS TEST RESULTS> tab, to display the stress test result
2. Click the “Export” button to download the simulation results as a CSV file

Sample screen:



Sample exported results (open with Excel):



Description of fields:

Field	Description
PRODUCT AREA	• Display the location of the market, i.e. HK – Hong Kong
MARKET	• Displays the market code, i.e. HKMK – Hong Kong market
SCENARIO ID	• Scenario of the stress test, e.g. IDIO – idiosyncratic, being the scenario that resulted in the worst case stress test value
CURRENCY	• HKD – Hong Kong dollar
STV	• Stress test value[1] of the portfolios
EUL	• Expected Uncollateralized Loss • EUL estimation will use both actual collateral on hand and required collateral requirement calculated from margin simulation. If interested in this number, you should select “Margin and stress test” as the type of simulation in <ENTER TRADE> tab *Applicable to simulation with no hypothetical trade only*

[1] Please refer to the Stress Test Value Calculation Guide available on HKEX website.