Latest updates are highlighted in orange

## 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

SETTINGS	ENTER TRADES	SIM	ULATION RESULTS
To view the default settings	To submit margin simulation     roquest	Margin	SIMULATION RESULTS
	request		SIMULATION RESULTS - DETAILS

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

SETTINGS	ENTER TRADES	SIM	ULATION RESULTS
To set simulation criteria	To select type of simulation	Margin	SIMULATION RESULTS
			SIMULATION RESULTS - DETAILS
		Stress Test	STRESS TEST RESULTS

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

SETTINGS	ENTER TRADES	SIM	ULATION RESULTS
To set simulation criteria	To select type of simulation     To input/import	Margin	SIMULATION RESULTS
	hypothetical trades		SIMULATION RESULTS - DETAILS
		Stress Test	STRESS TEST RESULTS

## 4.1 SIMULATION WITH DEFAULT SETTINGS (ACCESS PATH – A)

## 4.1.1 SETTINGS

#### Default view after clicking <Margin Simulation> on main view

Margin Simulation	SETTINGS	ENTER TRADES	SIMULATION RESULTS	SIMULA	TION RESULTS - DETAIL	S STRESS TEST RESULTS	$\equiv \times$
Simulation account	HK B40071 N	IA1 Used prices	Real-time	Used positions	Real-time	Simulation triggered	
Saved Settings		Save	Delete				
Simulation account *	HK B40071 M	IA1					
Used positions *	Real-time			-			
Used prices *	Real-time	D	efault Settings				
Include greeks	$\checkmark$						
Stressed scenario set definition	on 🤇						

Field	Description						
Simulation account*	Default as "HK <part id=""> MA1"</part>						
	HK exchange location						
	<ul> <li>MA1 marginable "Main Account", to be used for simulation</li> </ul>						
	Applicable to GCP:						
	Main Account capturing marginable positions of GCP its own and its Non-Clearing Participants.						
Used position*	<ul> <li>Default as "Real-time"</li> <li>Real-time use the latest available marginable positions in VaR Online<sup>1</sup> for the simulation</li> </ul>						
Llood prices*	- Default as "Deal time"						
Used prices	<ul> <li>Default as Real-time</li> <li>Real-time use the latest available prices in VaR Online for simulation</li> </ul>						
Include greeks	Not applicable for simulation, reserved for future use						
Stressed scenario set	Default as blank						
definition	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.

<sup>&</sup>lt;sup>1</sup> During the familarisation programme phase 2, VaR Online will refresh positions at end of day (around 8:30p.m.) and during the day, the marginable positions in VaR Online are normally as of start of day.

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

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

Margin Simulat	ion settings	ENTER TRADES	SIMULATION R	ESULTS SI	MULATION RESUL	TS - DETAILS	STRESS TEST RESULTS	$\equiv \times$
Simulation account	HK B40071 MA1	Used prices	Real-time	Used positions	Real-time	Simulation	triggered	
Margin	<u>Simulate</u>			_				
Import 20 rows		Default Type o	f Simulation					
INSTRUMENT CODE B	OUGHT/SOLD QUANTIT	Y SETTLEMENT PRICE	E ERROR REASON					<b>^</b>
							Action Confirmat	tion
Simulate Margin for all r	ows in the grid?							
							2 ок	Cancel

#### 4.1.2.1 TO VIEW MARGIN SIMULATION RESULTS

- 1. Click < SIMULATION RESULTS> tab, to display the simulation result
- 2. Click the "Export"  $\stackrel{1}{=}$  button to download the simulation results as a CSV file

Sample screen:

Margin Simulation SETTINGS ENTER TRADES Simulation account HK B40071 MA1 Used prices				SIMULATION I Real-time	Used positions	Real-time	SULTS - DETAILS	STRESS T	5/25/2021 7:28:14 PM	
Simulation results on sortfolio per product area, narket and currency 6 rows										
PORTFOLIO	PRODUCTAREA	MARKET	CURRENCY	P&L	INITIAL MARGIN	FLAT RATE MARGIN MUL	TIPLIER	MARGIN CREDIT	TOTAL ADD-ONS	TOTAL MTM AND MARGIN
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	нкмк	HKD	60,442,054	9, <mark>161,</mark> 512		1.0000	5,000,000.00	51,788	
Effect	CN	MAMK	CNY	0	0		1.0000	5,000,000.00	0	
Simulation Re	esultscsv			-	-			-,,		Show all

#### Sample exported results (view in Excel):

N	17			• 10	K 🗸 J	S 0					*
	A	В	с	D	E	F	G	н	1	J	E
1	Portfolio	Product area	Market	Currency	P&L	Initial Margin	Flat Rate Margin Multiplier	Margin Credit	Total Add-Ons	Total MTM And Margin Re	c
2	Existing portfolio	CN	MAMK	CNY	0	0	1	5,000,000.00	0		
3	Existing portfolio	CN	SZMK	CNY	0	0	1	5,000,000.00	0		
4	Existing portfolio	нк	нкмк	HKD	60,442,054	9,161,512	1	5,000,000.00	51,788		
5	Effect	CN	MAMK	CNY	0	0	1	5,000,000.00	0		
б	Effect	CN	SZMK	CNY	0	0	1	5,000,000.00	0		П
7	Effect	нк	нкмк	HKD	60,442,054	9,161,512	1	5,000,000.00	51,788		
8											
	4 > She	et1 Sheet2	(4	Ð			1 4				1

Field	Description
PORTFOLIO	<ul> <li>Existing portfolio: simulation based on existing portfolio (latest available marginable positions in VaR Online) without hypothetical trades</li> </ul>
PRODUCT AREA	• Displays the location of the market, i.e. HK – Hong Kong
MARKET	<ul> <li>Displays the market code         <ul> <li>HKMK – Hong Kong market</li> <li>MAMK – Shanghai market</li> <li>SZMK – Shenzhen market</li> </ul> </li> <li>Simulation is only applicable to Hong Kong market, the results for Shanghai and Shenzhen market are reserved for future use</li> </ul>
CURRENCY	<ul> <li>Displays the currency of the simulation results, i.e. HKD – Hong Kong dollar</li> </ul>
P&L	<ul> <li>Mark-to-market (MTM), in Hong Kong dollar equivalent</li> <li>Positive value: unfavorable MTM</li> <li>Negative value: favorable MTM</li> </ul>
INITIAL MARGIN	<ul> <li>Sum of various margins:</li> <li>portfolio margin + flat rate margin + corporate action position margin</li> </ul>
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	<ul> <li>Sum of all add-ons. The total add-ons will be included in TOTAL MTM AND MARGIN REQUIREMENT, except default fund add-on</li> </ul>
TOTAL MTM AND MARGIN REQUIREMENT	<ul> <li>Total MTM and margin requirement incorporate add-ons, if any, except default fund add-on</li> </ul>
AD-HOC ADD-ON	Ad hoc risk component related to individual CP imposed by HKSCC, if applicable
LIQUIDATION RISK ADD-ON	<ul> <li>Risk component related to the liquidity risk of concentrated positions</li> </ul>
HOLIDAY ADD-ON	<ul> <li>Always "0", reserved for future use, market risk component related to additional risk during holiday period</li> </ul>

Field	Description
CREDIT RISK ADD-ON	<ul> <li>Always "0", reserved for future use, risk component related to individual CP's credit risk imposed by HKSCC, if applicable</li> </ul>
DEFAULT FUND ADD- ON	<ul> <li>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</li> </ul>
POSITION LIMIT ADD- ON	<ul> <li>Risk component related to settlement counterparty risk arising from excessive CNS exposure against CP's apportioned liquid capital</li> </ul>
STRUCTURED PRODUCT ADD-ON	<ul> <li>Risk component to handle the huge percentages loss resulting from downward price movement approaching the minimum security prices for long structured product positions</li> </ul>

## 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" <sup>1</sup>/<sub>2</sub> button to download the simulation results as a CSV file

Margin S	imul	ation <b>SETTINGS</b>	ENTER TR	ADES SIMUL		JLTS	SIMULATION RESULTS - DI	ETAILS STRESS TEST RES	ults = X			
Simulation account HK B40071 MA1 Used prices Real-time						Used pos	itions Real-time	Simulation triggered 5/20/20	21 5:58:22 PM			
Simulation r	esults	per Iment						•				
currency			Defined	settings				Timestamp o	f the			
39 rows	Ł							simulatio	n			
MAIN						ORIGINAL PORTFOLIO SIMULATED PC						
INSTRUMENT	CODE	INSTRUMENT NAME	LONG QUANTITY	SHORT QUANTITY	CURRENCY	P&L	LIQUIDATION RISK ADD-ON	STRUCTURED PRODUCT ADD-ON	P&L LIQ			
700		TENCENT	99,000	0	HKD	52,925,600	29,712	2 0	0			
10001		TESTDWHV1	100,000	0	HKD	1,651,000	C	1,200	0			
10002		TESTDWFR1	100,000	0	HKD	1,998,000	C	1,200	0			
10003		TESTDWHV2	0	0	HKD	0	C	0	0			
4									•			
-2021052	0-18005	8csv ^							Show all X			

#### Sample exported results (open with Excel):

F	File H	ome I	nsert	Page Layout	Fo	rmulas	Data	a Rev	iew View															۵ (	) — 🗗	23
	<mark>``</mark>	Calibri		* 11 * A	Ă AŬ	= =	=	\$\$/~~	🖶 Wrap Text		Gene	ral		٣					-	*		Σ AutoSum	· 27	Â		
Pa	ste 🛷	BZ	<u>n</u> .	🗄 •   🂁 •	<u>A</u> -	≣≣	1	律律	Merge & C	enter 🔻	\$ -	%,	<b>*</b> .0	.00.00 0.4 00	Conditi Formatt	ional Form ting ∗ as Tab	nat ole ≚ :	Cell Styles -	Insert *	Delete *	Format *	∠ Clear ▼	Sort & Filter *	Find & Select	×.	
Clip	board 🕞		Fo	ont	E <sub>N</sub>			Alignm	ent	Es.		Numbe	r –	E <sub>N</sub>		Styles				Cells		E	diting			
	G6		- (0	$f_x$																						~
		А			В				С		D			F	E		F					G				E
1	Main:Ins	trument	Code	Main:Instrum	ient N	lame		Main:L	ong Quantity	Main:	Short (	Quantit	y M	ain:C	urrency	Original p	ortf	olio:P8	L Orig	inal po	ortfolio:L	iquidation F	isk Add-	on C	riginal po	
2			700	TENCENT					99,000				0 HK	KD				529256	00				2	9712		
3			10001	TESTDWHV1					100,000				0 HP	KD				16510	00					0		
4			10002	TESTDWFR1					100,000				0 HF	KD				1,998,0	00					0		
5			10003	TESTDWHV2					0				0 HF	KD					0					0		

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									
<ul> <li>The following columns are applicable to</li> <li>ORIGINAL PORTFOLIO – available marginable positions without hypothetical trades</li> <li>SIMULATED PORTFOLIO – available marginable positions with hypothetical trades (no applicable to Access Path – A)</li> </ul>										
P&L	<ul> <li>Mark-to-market (MTM) <ul> <li>Positive value as unfavorable MTM</li> <li>Negative value as favorable MTM</li> </ul> </li> <li>After netting and FX conversion, the sum of the P&amp;L in Hong Kong dollar will be the P&amp;L in <simulation results=""> tab.</simulation></li> </ul>									
LIQUIDATION RISK ADD-ON	<ul> <li>Risk component related to the liquidity risk of concentrated positions</li> <li>The liquidation risk add-on of structured products, if any, will be incorporated into the marginable position of the underlying instrument in HKD-equivalent</li> <li>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.</li> </ul>									
STRUCTURED PRODUCT ADD-ON	<ul> <li>Risk component to handle the huge percentages loss resulting from downward price movement approaching the minimum security prices for long structured product positions</li> </ul>									

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:

Margin Simulation									×
SETTINGS ENTER TRA	ADES SIMULATION	NRESULTS	SIMULATION RE	SULTS - DETAILS	STRESS TEST RE	SULTS			≡
Simulation account	HK B40071 MA1	Used prices	Real-time	Used positions	Real-time	Simulati	on triggered		
Saved Settings		<u>S</u> ave	Delete						
Simulation account *	HK B40071 MA1	)		Г		HK B400	71 HSE0001	Ассо	unt
Used positions *	Real-time	)			None - empty portfolio				
Used prices *	Real-time				Real-time	ΙГ	CCASS		
Stressed scenario set definition			Description	and STV model			Participar	nt ID	
					Exchange Lo	cation	1		
					always "HK"	cation,			

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

Margin Simulation								×						
SETTINGS ENTER TRADES SIMULATION RESULTS SIMULATION RESULTS - DETAILS STRESS TEST RESULTS														
Simulation account	HK B20071 MA1	Used prices	Real-time	Used positions	Real-time	Simulation tr	iggered							
Saved Settings		Save	Delete											
Simulation account *	HK B20071 MA1						HK B20071 37108+							
							HK B20071 37109+							
Used positions *	Real-time	<u></u>				None - empty portfolio	HK B20071 H1							
Used prices *	Real-time					Real-time	HK B20071 HSE0001							
Include greeks	$\checkmark$		Id	Description		Trear-time	HK B20071 MA1	-						
Stressed scenario set definition			STANDARD	Stress set for EUL and STV	/ model			-						

	quent-use settings (optional)											
Part A. Save and manage frequent-use settings (optional)												
Saved Settings	<ul> <li>To save new setting or retrieve saved setting for use/deletion</li> <li>A maximum of 50 settings can be saved per user</li> <li>To create and save a setting: <ul> <li>Input a name within 30 characters in "Saved Settings"</li> <li>Refer to Part B to select the settings</li> <li>Click <save> button to save the settings</save></li> </ul> </li> <li>To retrieve a saved setting for simulation or update: <ul> <li>Click on the field and select the saved setting from the dropdown menu</li> <li>Upon selection, the saved setting will be displayed</li> <li>Click <enter trades=""> tab for simulation or update the saved setting and click <save> button to save the updates</save></enter></li> </ul> </li> </ul>											

Field	Description
	<ul> <li>Select the corresponding setting from the dropdown menu and click <delete> button</delete></li> </ul>
Part B. Define single use	settings for the simulation
Simulation account*	<ul> <li>Mandatory field – default as "HK <part id=""> MA1'"</part></li> <li>HK exchange location</li> <li>MA1 marginable "Main Account", to be used for simulation. For GCP, it is capturing all marginable positions of GCP and its Non-Clearing Participants (NCPs) for simulation</li> <li>HSE001 collateral "HOUSE" account is NOT applicable for simulation, please ignore</li> </ul>
	<ul> <li><u>Applicable to GCP:</u></li> <li>Main Account capturing marginable positions of GCP its own (H1) and its Non-Clearing Participants (NCPs denoted as nnnn+). GCP may select H1 or nnnn+ for margin simulation and the time of availability of these accounts are:         <ul> <li>H1 only available in end of day</li> <li>nnnn+ will be updated before intra-day margin call and end of day<sup>2</sup></li> </ul> </li> </ul>
Used position*	<ul> <li>Mandatory field – click to select from the dropdown menu</li> <li>None – empty portfolio use only the input/imported hypothetical trades for the simulation</li> <li>Real-time use the latest available marginable positions in VaR Online<sup>3</sup> with or without the input/imported hypothetical trades for the simulation</li> </ul>
Used prices*	<ul> <li>Mandatory field – always "Real-time"</li> <li>Real-time use the latest available prices in VaR Online for simulation</li> </ul>
Include greeks	Not applicable for simulation, reserved for future use
Stressed scenario set definition	<ul> <li>Leave blank for "Margin" simulation only</li> <li>Mandatory field – for "Stress Test" or "Margin and Stress Test" simulation <ul> <li>Click to select "Standard" from the dropdown menu</li> </ul> </li> </ul>

## 4.2.2 ENTER TRADES

To conduct the following 3 types of simulation:

<sup>&</sup>lt;sup>2</sup> During the familiarisation programme phase 2, simulation of NCP's account is only available in end of day.

<sup>&</sup>lt;sup>3</sup> During the familarisation programme phase 2, VaR Online will refresh positions at end of day (around 8:30p.m.) and during the day, the marginable positions in VaR Online are normally as of start of day.

- **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

Margin Simulation	SETTINGS	ENTER TRADES	SIMULATION F	ESULTS	SIMULATION RESULTS	- DETAILS	STRESS TEST RESULTS $\equiv \times$
Simulation account	HK B40071 MA1	Used prices F	Real-time	Used	positions Real-time	Simulation 1	riggered 5/24/2021 4:05:33 PM
Margin Margin	Simulate	simulation		[	Settings of the simulation	] [	Timestamp of the simulation
Margin and stress test	SHT/SOLD QUANTITY	SETTLEMENT PRICE	E ERROR REASON				
							Action Confirmation
Simulate Margin for all rows	; in the grid?						OK Cancel

#### 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"
- 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:

Margin Simula	Margin Simulation												
SETTINGS	ENTER TRADES	SIMULATION	RESULTS	SIMUL	ATION RESULTS - D	ETAILS S	TRESS TES	TRESULTS					
Simulation account	HK B40	071 MA1 Use	ed prices Re	al-time	Used posi	tions Real-time		Simulation triggere	d				
Margin	Simul	ate Bought			INSTRUMENT CODE	BOUGHT/SOLD	QUANTITY	SETTLEMENT PRICE	ERROR REASON				
		Sold			1	Bought	300	62.3534	Rounding necessary				
Import 20 row	VS												
INSTRUMENT CODE	BOUGHT/SOLD	QUANTITY SETTLE	MENT PRICE	ERROR REA	ASON								
Instrument Market	Underlying	Instrument group	Strike price	Expiration	date								
1	1	STOCK											
10001	BSK10001MB	BASKET DW CALL	100.0000	1/3/19									
10002	BSK10002MB	BASKET DW CALL	100.0000	1/3/19									
10003	BSK10003MB	BASKET DW CALL	100.0000	1/3/19									
10004	BSK10004MB	BASKET DW CALL	100.0000	1/3/19									
		•											

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

## 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:

Margin Simul	ation setti	NGS	ENTER TRADES	SIMULATION RESULTS	SIMULATION RESULTS	S-DETAILS S	STRESS TEST RESULTS	$\equiv$ ×
Simulation account HK B		071 MA1	Used prices Re	eal-time Use	ed positions Real-time	Simulation tri	ggered	
Margin Simulate			To import a	a csv file				
INSTRUMENT CODE	BOUGHT/SOLD	QUANTITY	SETTLEMENT PRICE	ERROR REASON				
5	Sold	1,000	50.400				-	
388	Bought	5,000	450.110		Imported hypothet	ical trades,		
700	Sold	1,000	650.021		no new trades car	be added		
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" <sup>±</sup> button to download the simulation results as a CSV file

#### Sample screen:

Margin Simu	STRESS TE	ST RESULTS ≡ ×								
Simulation account	t HK B	40071 MA	1 Use	ed prices R	eal-time	Used positions Real-time	Sin	mulation triggered 5/20/2021 2:46:32 PM		
Simulation results portfolio per prod market and curren 9 rows 👤	s on uct area, ıcy	Settings of the simulation							np of the ation	
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	нкмк	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	нкмк	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		
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#### Sample exported results (view in Excel):

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1	Portfolio	Product area	Market	Currency	P&L	Initial Margin	Flat Rate Margin M	ultiplier	Margin Credit	Total Add-Ons	Total MTM And Mar	gin Requirement	AD-HOC ADD-O	N T
2	Simulated portfolio	CN	MAMK	CNY	0	0		1	5,000,000.00	) (	)	C		0
3	Simulated portfolio	CN	SZMK	CNY	0	0		1	5,000,000.00	) (	)	0		0
4	Simulated portfolio	нк	нкмк	HKD	69,527,226	8,755,662		1	5,000,000.00	755,254	L .	77,542,052		0
5	Existing portfolio	CN	МАМК	CNY	0	0		1	5,000,000.00	) (	)	0		0
6	Existing portfolio	CN	SZMK	CNY	0	0		1	5,000,000.00	) (	)	0		0
7	Existing portfolio	нк	нкмк	HKD	68,191,307	8,761,696		1	5,000,000.00	751,969	)	76,206,132		0
8	Effect	CN	МАМК	CNY	0	0		1	5,000,000.00	) (	)	0		0
9	Effect	CN	SZMK	CNY	0	0		1	5,000,000.00	) (	)	0		0
10	Effect	нк	нкмк	HKD	1,335,919	-6,034		1	5,000,000.00	3,285	i	1,335,920		0

Field	Description
PORTFOLIO	<ul> <li>Existing portfolio: simulation based on existing portfolio (latest available marginable positions in VaR Online) without hypothetical trades</li> <li>Simulated portfolio: simulation based on existing portfolio, together with hypothetical trades (latest available marginable positions plus hypothetical trades)</li> <li>Effect: Net changes from existing portfolio results to simulated portfolio results</li> </ul>
PRODUCT AREA	<ul> <li>Displays the location of the market, i.e. HK – Hong Kong</li> </ul>
MARKET	<ul> <li>Displays the market code</li> <li>HKMK – Hong Kong market</li> <li>MAMK – Shanghai market</li> <li>SZMK – Shenzhen market</li> </ul>

Field	Description
	<ul> <li>Simulation is only applicable to Hong Kong market, the results for Shanghai and Shenzhen market are reserved for future use</li> </ul>
CURRENCY	<ul> <li>Displays the currency of the simulation results, i.e. HKD – Hong Kong dollar</li> </ul>
P&L	<ul> <li>Mark-to-market (MTM), in Hong Kong dollar equivalent</li> <li>Positive value: unfavorable MTM</li> <li>Negative value: favorable MTM</li> </ul>
INITIAL MARGIN	<ul> <li>Sum of various margins:</li> <li>portfolio margin + flat rate margin + corporate action position margin</li> </ul>
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	<ul> <li>Sum of all add-ons. The total add-ons will be included in TOTAL MTM AND MARGIN REQUIREMENT, except default fund add-on</li> </ul>
TOTAL MTM AND MARGIN REQUIREMENT	<ul> <li>Total MTM and margin requirement incorporate add-ons, if any, except default fund add-on</li> </ul>
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	<ul> <li>Always "0", reserved for future use, market risk component related to additional risk during holiday period</li> </ul>
	Applicable to Main Account (MA1) only
CREDIT RISK ADD-ON	<ul> <li>Always "0", reserved for future use, risk component related to individual CP's credit risk imposed by HKSCC, if applicable</li> </ul>
	Applicable to Main Account (MA1) only

Field	Description
DEFAULT FUND ADD- ON	<ul> <li>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</li> <li>Applicable to Main Account (MA1) only</li> </ul>
POSITION LIMIT ADD- ON	<ul> <li>Risk component related to settlement counterparty risk arising from excessive CNS exposure against CP's apportioned liquid capital</li> <li>Applicable to Main Account (MA1) only</li> </ul>
STRUCTURED PRODUCT ADD-ON	<ul> <li>Risk component to handle the huge percentages loss resulting from downward price movement approaching the minimum security prices for long structured product positions</li> <li>Applicable to Main Account (MA1) only</li> </ul>

## 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" <sup>1</sup> button to download the simulation results as a CSV file

#### Sample screen:

Simulation acc	count	HK B4007	1 MA1 Us	ed prices Real-time	9	Used pos	sitions Real-time	Simulation triggered 5/20/202	21 5:58:22 PI	Л
Simulation re- instrument in currency 39 rows	esults p instru	per iment	Defined	settings				▼ Timestamp of simulation	the	
MAIN	_					ORIGINAL P	ORTFOLIO		SIMULATED	POR
NSTRUMENT	CODE	INSTRUMENT NAME	LONG QUANTITY	SHORT QUANTITY	CURRENCY	P&L	LIQUIDATION RISK ADD-ON	STRUCTURED PRODUCT ADD-ON	P&L	LIQ
1299		AIA	666	0	HKD	0	0	0	1,664	
388		HKEX	5,000	0	HKD	0	0	0	1,898,830	
5		HSBC HOLDINGS	0	1,000	HKD	0	0	0	21,047	
700		TENCENT	99,000	0	HKD	52,925 <mark>,</mark> 600	29,712	0	52,346,344	
10001		TESTDWHV1	100,000	0	HKD	1,651,000	0	1,200	1,651,000	
10002		TESTDWFR1	100,000	0	HKD	1,998,000	0	1,200	1,998,000	
10002								0		

Sample exported results (open with Excel):

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1	Main:Ins	trument	Code	Main:In	strument	Name	Main:L	ong Qua	ntity	Main:Short Q	uantity	Main:C	urrency	Original po	rtfolio:P8	kL Orig	inal por	tfolio:L	.iquidati	ion Risk Add-o	n Or	iginal po	ortfolio:	S
2			1299	AIA					666		C	HKD				0					0			
3			388	HKEX					5,000		0	HKD				0					0			
4			5	HSBC H	OLDINGS				0		1,000	HKD				0					0			
5			700	TENCEN	NT			9	9,000		C	HKD			52,925,6	00				29,	712			
6			10001	TESTDV	VHV1			10	0,000		C	HKD			1,651,0	00					0			≡
7			10002	TESTDV	VFR1			10	0,000		C	) HKD			1,998,0	00					0			
8			10003	TESTDV	VHV2				0		C	HKD				0					0			

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 ar • ORIGINAL PORTFO • SIMULATED PORTF	e applicable to LIO – available marginable positions without hypothetical trades OLIO – available marginable positions with hypothetical trades
P&L	<ul> <li>Mark-to-market (MTM) <ul> <li>Positive value as unfavorable marks</li> <li>Negative value as favorable marks</li> </ul> </li> <li>After netting and FX conversion, the sum of the P&amp;L in Hong Kong dollar will be the P&amp;L in <simulation results=""> tab.</simulation></li> </ul>
LIQUIDATION RISK ADD-ON	<ul> <li>Risk component related to the liquidity risk of concentrated positions</li> <li>The liquidation risk add-on of structured products, if any, will be incorporated into the marginable position of the underlying instrument in HKD-equivalent</li> <li>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.</li> </ul>

Field	Description
STRUCTURED PRODUCT ADD-ON	<ul> <li>Risk component to handle the huge percentages loss resulting from downward price movement approaching the minimum security prices for long structured product positions</li> </ul>
	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" <sup>1</sup>/<sub>2</sub> button to download the simulation results as a CSV file

#### Sample screen:

Total STV	66.33	0.904	Used pri	Ces Real-u	lic	Used positions Real-time		
3 rows 🛓	,					Defined settings	Timestamp of the	
RODUCTAREA	MARKET	SCENARIO ID	CURRENCY	STV	EUL		simulation	
łκ	HKMK	IDIO	HKD	64,735,743	125,262,696			
N	MAMK		HKD	793,597	-4,866,174			
N	SZMK		HKD	801,564	-4,937,874			

#### Sample exported results (open with Excel):

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1	Product	area N	Market	Scenario ID	Currency	STV	EUL													
2	НК	H	кмк	IDIO	HKD	64,735,743	125,262,69	96												
3	CN	N	ИАМК		HKD	793,597	-4,866,17	74												
4	CN	S	ZMK		HKD	801,564	-4,937,8	74												
5																				

Field	Description
PRODUCT AREA	<ul> <li>Display the location of the market, i.e. HK – Hong Kong</li> </ul>
MARKET	Displays the market code, i.e. HKMK – Hong Kong market
SCENARIO ID	<ul> <li>Scenario of the stress test, e.g. IDIO – idiosyncratic, being the scenario that resulted in the worst case stress test value</li> </ul>
CURRENCY	HKD – Hong Kong dollar

Field	Description
STV	<ul> <li>Stress test value<sup>4</sup> of the portfolios</li> </ul>
EUL	<ul> <li>Expected Uncollateralized Loss</li> <li>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</enter></li> <li>Applicable to simulation with no hypothetical trade only</li> </ul>

<sup>&</sup>lt;sup>4</sup> Please refer to the Stress Test Value Calculation Guide available on <u>HKEX website</u>.