ORION CASH PLATFORM (OCP)

Enhancement of CCASS and CCMS Report Download

Briefing Video

HKEX
香 港 交 易 所

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Agenda

01 | Objectives of the Video

Provide a clear overview of the changes and improvements to the enhancement of CCASS and CCMS report download (the "Enhancement")

Guide the targeted stakeholders to **make necessary preparations** for the Enhancement

| What is the key information? | Timeline and Scope | Preparation Arrangements | Technical Set-up |

Stakeholders should refer to the **circulars**, **migration guide** and **technical documents** available on the OCP webpage for details.

Overview of the Enhancement

02 | **Overview of the Enhancement**

Who is affected by this Enhancement?

HKSCC	HKCC & SEOCH
Participants of HKSCC other than Investor Participants[1]	HKCC Participants
Designated Banks of HKSCC ("DBs")	SEOCH Participants

Collectively referred to as "Stakeholders".

Note:
1. *Participants of HKSCC other than Investor Participants: include Clearing Agency Participants, Custodian Participants, Direct Clearing Participants, General Clearing Participants, Stock Lender Participants and Stock Pledgee Participants*

02 | Overview of the Enhancement
What is the Enhancement?

- The <u>first service release</u> for Orion Cash Platform ("OCP") is the Enhancement of CCASS and CCMS Report Download.

- HKEX aims to launch the Secure File Transfer Protocol[1] ("SFTP") service via the Report Access Platform ("RAP") as the new download channel for CCASS and CCMS, replacing report retrieval via the CCASS/ CCMS Terminal.

Existing Arrangement – CCASS/ CCMS Terminal	Enhanced Arrangement - RAP
Stakeholders can manually log in to the web-based CCASS/CCMS Terminal to **view**, **select, and download or print reports** Specific Participants can **pre-define a designated download path** for the reports and **subscribe to the overnight report distribution**	Stakeholders will be **required to retrieve the CCASS/ CCMS reports via SFTP** through the RAP

- The migration to RAP is crucial and **compulsory** for all Stakeholders.

- Through the Enhancement, the "Report Download", "Report Profile Maintenance" and "Overnight Report Download" functions in the CCASS / CCMS Terminal are targeted to be obsoleted after a 3-months parallel run period.

> **The implementation of CCASS and CCMS reports via RAP is targeted for <u>the 2nd half of July 2025</u>, subject to regulatory approval.**

Note:
1.   SFTP is a network protocol that enables secure and encrypted file transfers over remote systems. Stakeholders should source their own software to support the use of SFTP.

02 | Overview of the Enhancement

Why is this Enhancement being made?

Simplifies Report Access Process

The process of accessing reports, which currently happens via web-based terminals, will be simplified.

Heightens security of data transmission

Ensure secure file transfer through SFTP between HKEX clearing houses and external parties.

Streamlines Report Retrieval Channel

Bring alignment to the retrieval channels for various reports (e.g. DCASS, VaR) generated by HKEX clearing houses.

Improves operational efficiency

Encourage machine-to-machine automated operational workflows; Alleviate the burden of manual processes and increase operational efficiency.

02 | Overview of the Enhancement
When will the Enhancement be implemented?

The key dates of the Enhancement are listed below. Stakeholders should plan accordingly.

Activities	Planned Dates	Deadlines	Remarks
Release of announcement circulars	27 Mar 2025	/	Available on HKEX websites.
Release of Migration Guide, RAP Technical Guide and Installation Procedures	27 Mar 2025	/	Available in HKEX websites/ Client Connect.
Release of questionnaires	27 Mar 2025	30 May 2025	Fill in via "Event" section in Client Connect.
Online briefing video	16 Apr 2025	/	Available on HKEX websites.
Registration of new RAP accounts for accessing CCASS and CCMS reports	12 May 2025 *(open for registration)*	20 Jun 2025	Refer to "Preparation Arrangements" section for new or additional RAP user account(s).
Practice Session (Optional)	Mid-Jun 2025 tentatively	Late May 2025 tentatively (enrollment)	To be announced in due course
Rollout of CCASS and CCMS report download via RAP	2nd half of Jul 2025 tentatively	/	Subject to regulatory approval. To be announced in due course.
Obsolescence of report download functions in CCASS/ CCMS Terminal	By the end of Oct 2025 tentatively	/	Subject to regulatory approval. To be announced in due course.

Stakeholders are highly recommended to review their internal readiness to ensure a smooth migration.
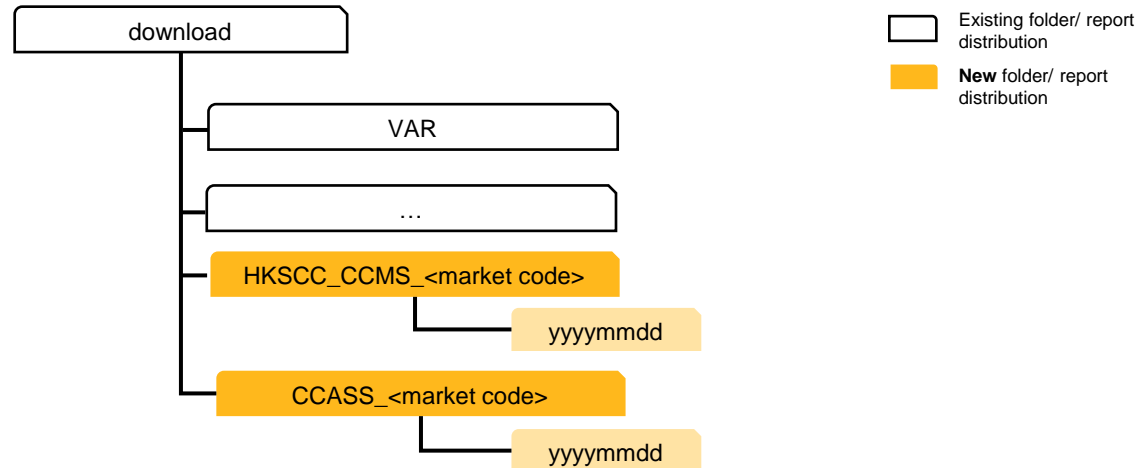
Scope of the Enhancement

03 | Scope of the Enhancement – for <u>HKSCC</u> Participants
What is it being offered?

Currently, some Clearing Participants are retrieving VaR Platform reports from RAP. The RAP will be enhanced as follows for Participants:

- Allow access for Custodian Participants, Stock Lender Participants, and Stock Pledgee Participants.

- A **<u>new folder structure</u>** will be provided for HKSCC Participants to retrieve CCASS and CCMS reports.

RAP User Account:
e.g. CB99999001

```
download
  ├── VAR
  ├── …
  ├── HKSCC_CCMS_<market code>
  │        └── yyyymmdd
  └── CCASS_<market code>
           └── yyyymmdd
```

☐ Existing folder/ report distribution

🟧 **New** folder/ report distribution

Notes:
1. *<market code> can be GLOB, HKMK, MAMK or SZMK. HKSCC Participants are advised to refer to the <u>CCASS Terminal User Guide</u> or <u>CCMS Terminal User Guide</u> for further information.*
2. *<yyyymmdd> in the report folder refers to the calendar day on which RAP generates the sub-folder.*

03 | Scope of the Enhancement – for HKSCC Participants
What is it being offered?

- HKSCC Participants can **configure their RAP accounts with three types of report access** based on their needs.

  - ✓ CCASS, CCMS and VaR Platform (if applicable) reports;
  - ✓ CCASS and CCMS reports; or
  - ✓ VaR Platform (if applicable) reports only

- An **increase** in the allowed **number of RAP user accounts and workstations per RAP account** that HKSCC Participants can apply for.
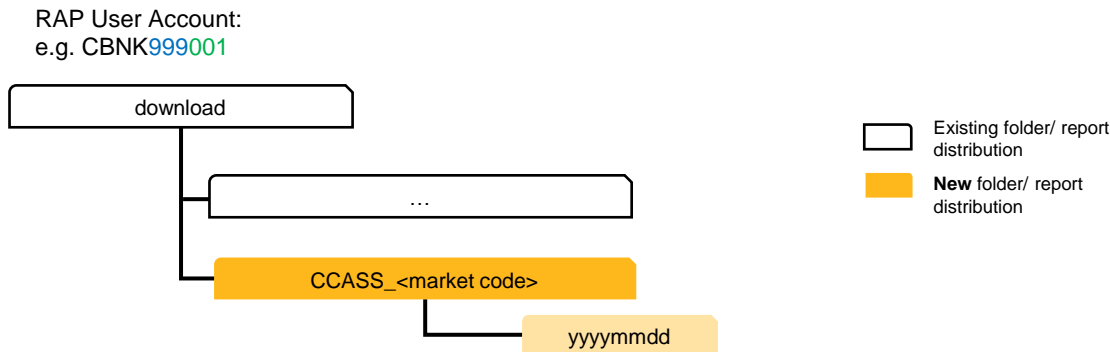
Allowed number of RAP user accounts (including the existing accounts)	Allowed number of workstations per RAP accounts (including the existing workstations)
1 ⟶ 3	2 ⟶ 4

03 | **Scope of the Enhancement – for HKSCC Designated Banks**
What is it being offered?

The RAP will be enhanced to allow DBs to access and retrieve CCASS reports using the following folder structure:

RAP User Account:
e.g. CBNK999001

```
download
  │
  ├─ ...
  │
  └─ CCASS_<market code>
           │
           └─ yyyymmdd
```

☐ Existing folder/ report distribution

🟧 **New** folder/ report distribution

- The allowed **number of RAP user accounts and workstations per RAP account** that DBs can apply for are as follows:

Allowed number of RAP user accounts	Allowed number of workstations per RAP accounts
2	4

Notes:
1. *<market code> is GLOB.*
2. *<yyyymmdd> in the report folder refers to the calendar day on which RAP generates the sub-folder.*
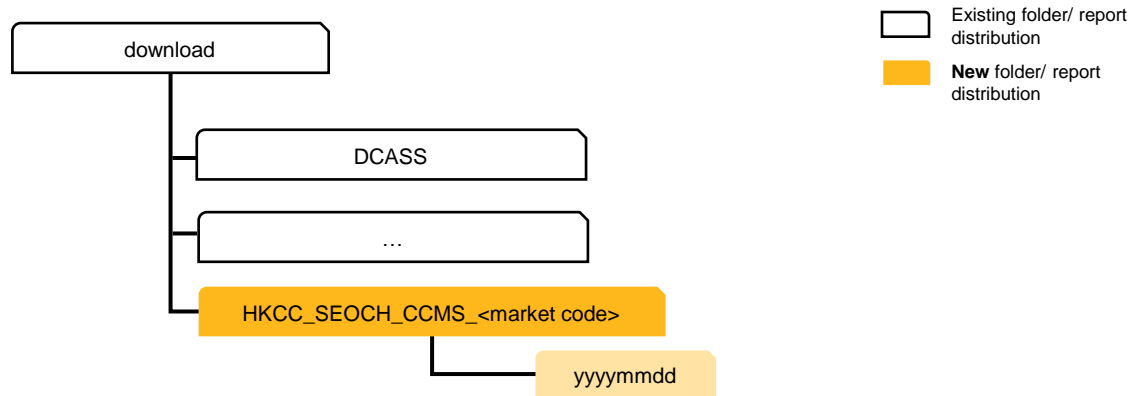
03 | Scope of the Enhancement – for HKCC & SEOCH Participants

What is it being offered?

The Report Retrieval Solution will be renamed as Report Access Platform (RAP), effective from the implementation of the Enhancement. The RAP will be enhanced as follows for HKCC & SEOCH Participants:

• A **new folder structure** will be provided for HKCC and SEOCH Participants to retrieve CCMS reports.

RAP user account:
DCZZZ001

```
download
 ├── DCASS
 ├── …
 └── HKCC_SEOCH_CCMS_<market code>
          └── yyyymmdd
```

Existing folder/ report distribution

New folder/ report distribution

Notes:
1. *<market code> can be GLOB, HKMK, MAMK or SZMK, the HKCC & SEOCH Participants are advised to refer to CCMS Terminal User Guide for further information.*
2. *<yyyymmdd> in the report folder refers to the calendar day on which RAP generates the sub-folder.*

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03 | Scope of the Enhancement – for HKCC & SEOCH Participants
What is it being offered?

- HKCC and SEOCH Participants can **configure their RAP accounts with three types of report access** based on their needs.
  - ✓ CCMS and DCASS reports;
  - ✓ CCMS reports only; or
  - ✓ DCASS reports only

- An **increase** in the allowed number of **RAP user accounts and workstations per RAP account** that HKCC and SEOCH Participants can apply for.

Allowed number of RAP user accounts (including the existing accounts)	Allowed number of workstations per RAP accounts (including the existing workstations)
2 ⟶ 4	2 ⟶ 4

Preparation Arrangements

04 | Preparation Arrangements

What are the steps to prepare for the Enhancement if we are new to RAP?

Prepare and Gather Required Information

Generate SSH keys

Prepare your network

Gather required information for registration through the e-Service TechS 8

Use E-Service TechS 8

Submit RAP account registration requests to HKEX

Installation and setup RAP

Review technical documents

Perform technical setup of RAP

04 | Preparation Arrangements

What are Secure Shell (SSH) keys?

RAP adopts SSH public-key authentication. For each RAP user account, Stakeholders should generate a pair of SSH private and public keys, as well as a public key fingerprint.

Each SSH key pair includes two keys:

- Public Key – to be registered on RAP

- Private Key – to be kept by Stakeholders and used on RAP server or client workstation to log in to RAP

RAP only accepts RSA public keys with key length of 2048 bit and 4096 bits in SSH2 format, e.g.

```
---- BEGIN SSH2 PUBLIC KEY ----
Comment: SSH KEY
AAAAB3NzaC1kc3MAAACBAPY8ZOHY2yFSJA6XYC9HRwNHxaehvx5wOJ0rzZdzoSOXxbET
W6ToHv8D1UJ/z+zHo9Fiko5XybZnDIaBDHtblQ+Yp7StxyltHnXF1YLfKD1G4T6JYrdH
YI14Om1eg9e4NnCRleaqoZPF3UGfZia6bXrGTQf3gJq2e7Yisk/gF+1VAAAAFQDb8D5c
vwHWTZDPfX0D2s9Rd7NBvQAAAIEAlN92+Bb7D4KLYk3IwRbXblwXdkPggA4pfdtW9vGf
J0/RHd+NjB4eo1D+0dix6tXwYGN7PKS5R/FXPNwxHPapcj9uL1Jn2AWQ2dsknf+i/FAA
vioUPkmdMc0zuWoSOEsSNhVDtX3WdvVcGcBq9cetzrtOKWOocJmJ80qadxTRHtUAAACB
AN7CY+KKv1gHpRzFwdQm7HK9bb1LAo2KwaoXnadFgeptNBQeSXG1vO+JsvphVMBJc9HS
n24VYtYtsMu74qXviYjziVucWKjjKEb11juqnF0GD1B3VVmxHLmxnAz643WK42Z7dLM5
sY29ouezv4Xz2PuMch5VGPP+CDqzCM4loWgV
---- END SSH2 PUBLIC KEY ----
```

The SSH keys can be generated by a variety of tools available on the market.

04 | Preparation Arrangements – For <u>HKSCC</u> Participants and Designated Banks

How to prepare for registering new/ additional RAP user account(s) and workstation(s)?

Before submitting the information through e-service, TechS 8, below are the preparations for registering a new RAP user account:

✓ Participants and DBs should generate a pair of **SSH public and private keys** for each user account. Please ensure that private keys are **NOT** included in the zip file sent to Client Connect.

Identity of Stakeholders	File Name of the Public Key
Participants of HKSCC other than Investor Participants	CXnnnnn001.pub (for RAP user account CXnnnnn001), Xnnnnn refers to the Participant ID
Designated Banks of HKSCC	CBNKnnn001.pub (for RAP user account CBNKnnn001), nnn refers to the bank code.

✓ The RAP is only accessible from the Securities and Derivatives Network (SDNet) which is designated for connection to CCASS. IP addresses of RAP server or client workstations must fall within the same subnet of SDNet for HKSCC.

SDNet IP addresses subnet	
10.135.0.0/16 10.136.0.0/16	10.176.0.0/14

04 | **Preparation Arrangements – For HKCC & SEOCH Participants**

How to prepare for registering new/ additional RAP user account(s) and workstation(s)?

Before submitting the information through e-service, TechS 8, below are the preparations for registering a new RAP user account:

- Participants should generate a pair of **SSH public and private keys** for each user account. Please ensure that private keys are **NOT** included in the zip file sent to Client Connect.

  Public Key file name (DCXXX001.pub; DCXXX002.pub; DCXXX003.pub; DCXXX004.pub)

✓ The RAP is only accessible from the Securities and Derivatives Network/2 (SDNet/2) or HKEX Service Network (HSN). IP addresses of RAP server or client workstations must be within the same subnet (first 3 octets) of SDNet/2 or HSN.

04 | **Preparation Arrangements**
What is the use of e-Service TechS 8 in the Enhancement?

What is TechS 8?

- The e-Service TechS 8 on Client Connect[1] is designed for HKSCC, HKCC, SEOCH Participant, and HKSCC Designated Banks to **register** or **maintain** Report Access Platform (RAP) user accounts.

- This e-Service is available 24 hours a day, except during regular system maintenance.

- This e-Service will be updated on 12 May 2025 to support the Enhancement.

What is the key information you need to provide in TechS 8?

✔	Public key generated from a pair of Secure Shell (SSH) keys
✔	SSH public key fingerprint
✔	IP addresses for the designated RAP server or client workstations
✔	Types of reports or data files to be configured for the account

Stakeholders <u>SHOULD NOT</u> submit their private keys in Client Connect and shall keep their private keys confidential.

04 | Preparation Arrangements

When can we apply **new/ additional** user account(s)?

New or Additional RAP User Account Registration

- The Stakeholders may submit new registration requests for facilitating the Enhancement through the **e-Service, TECHS 8** in Client Connect **starting from 12 May 2025**.

- For new accounts to be effective before the optional Practice Session, the Stakeholders must submit new registration requests with remark "for CCASS and CCMS Reports Practice Session" **on/ before 30 May 2025**.

- For new accounts to be effective before the rollout of the Enhancement, the Stakeholders must submit new registration requests with remark "for the rollout of CCASS and CCMS Reports Enhancement" **on/ before 20 Jun 2025**.

The Stakeholders can refer to the below documents regarding to the RAP installation and technical setup

HKSCC

- HKSCC CCASS/ VaR Online/ RAP Installation Procedures
- HKSCC Report Access Platform (RAP) Technical Guide

HKCC & SEOCH

- HKCC and SEOCH CCASS (CCMS) Terminal / RAP Installation Procedures
- HKCC and SEOCH Report Access Platform (RAP) Technical Guide

04 | Preparation Arrangements

How can we prepare the Enhancement for the **existing** RAP user accounts?

New CCASS and CCMS Report Folders Automatically Enabled for Stakeholders

- Under this arrangement, the Stakeholders with the existing RAP user accounts will be **automatically enabled** to receive CCASS and CCMS reports upon the rollout of the enhancement.

- If the Stakeholders do not wish the existing RAP user accounts to be enabled for CCASS and/ or CCMS report retrieval, please return the feedback through the questionnaires via "Event" section in Client Connect **on/ before 30 May 2025**.

Maintenance of RAP User Accounts e.g. update of workstations

- The Stakeholders may submit maintenance requests through the **e-Service, TECHS 8** for facilitating the Enhancement in Client Connect **starting from 12 May 2025**.

- For maintenance requests to be effective before the optional Practice Session, the Stakeholders must submit maintenance requests with remark "for CCASS and CCMS Reports Practice Session" **on/ before 30 May 2025**.

- For maintenance to be effective before the rollout of the Enhancement, the Stakeholders must submit maintenance requests with remark "for the rollout of CCASS and CCMS Reports Enhancement" **on/ before 20 Jun 2025**.

The Stakeholders are reminded to renew the existing RAP user accounts' Secure Shell (SSH) key before they expires (i.e. every two years).

Technical Set-up and Tips

05 | Technical Set-up
How to access RAP via SFTP Facility?

Upon registration of public keys and IP addresses, the Stakeholders can access HKEX RAP with the assigned user accounts via one of the registered RAP server or client workstations.

- Under normal circumstances, Stakeholders should connect to RAP using the HKEX Primary data centre RAP IP addresses.

- In the event of a contingency requiring RAP activation in its HKEX secondary data centre, the RAP connection will be interrupted. Once RAP service is resumed, Stakeholders will need to change the IP address for RAP connection to its HKEX secondary data centre:

	HKSCC RAP IP Addresses and Port	HKCC & SEOCH RAP IP Addresses and Port
HKEX Primary data centre	10.243.2.141 port 18801 10.243.2.142 port 18801	10.151.14.141 port 18801 10.151.14.142 port 18801
HKEX Secondary data centre	10.243.66.141 port 18801 10.243.66.142 port 18801	10.152.14.141 port 18801 10.152.14.142 port 18801

The **same** as existing for accessing VaR Platform reports

The **same** as existing for accessing DCASS reports

- Participants are not required to perform additional technical setup to connect to RAP if they already have access to VaR and DCASS reports via SFTP.

05 | Technical Set-up
Technical Tips

Concurrent login is not allowed

- A user account is allowed to log on through up to 4 pre-registered IP address(es). However, concurrent login is not allowed.

Self-service Renewal of Public Keys

- Stakeholders are required to renew their public keys at least **every 2 years**. Stakeholders should re-register their keys with HKEX immediately if the corresponding private keys are being compromised.

- After generating new SSH public and private keys, Stakeholders should renew their SSH public keys with HKEX by submitting the keys to the /key_management/publickey folder. After submission, an Acknowledgement or Rejection file will be generated and available for retrieval in the /key_management/publickey folder.

- Public Key Expiry Warning File ("SSHKeyExpireWarning.txt") will appear in /key_management/publickey folder if the public key is going to expire within 14 days.

RAP User Account Format

- RAP user accounts are CASE-SENSITIVE, and Stakeholders should input their RAP user accounts in CAPITAL LETTERS.

05 | Technical Set-up
Technical Tips

Reports Format

- Reports/ data images are formatted into **zip** files. These files should be decompressed to extract the reports, which are identical to the reports currently downloaded via CCASS Terminal.

File Retention Period

- All CCASS and CCMS reports and data files will be available via RAP for retrieval for **10** calendar days after generation. Stakeholders should retrieve and save their reports/files in a timely manner.

Stakeholders should refer to the **RAP Technical Guide** for details.

Enquiries / Thank you

For HKSCC Participants and Designated Banks, please contact the CCASS Hotline at 2979-7111 or email clearingps@hkex.com.hk

For HKCC & SEOCH Participants, please contact the DCASS Hotline at 2979-7222 or email clearingpsd@hkex.com.hk