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Introduction

This document provides the Clearing Members of OTC Clear the installation procedures to configure their own PCs for Electronic Communication Platform for Post-Trade (ECP-PT). ECP-PT provides a Secure File Protocol (sFTP) service for OASIS report download Service.

The installation mainly comprises of the followings step:

- | | |
|--|-----------|
| 1. Hardware Setup | *Remarks1 |
| 2. Communication Line Setup | |
| 2.1 Connect the PC to SDNet/2 Routers | *Remarks1 |
| 2.2 Firewall Setup | |
| 3. Window IP Address and Configuration Setup | *Remarks1 |
| 4. Member Key Management | |
| 5. Member Report Location | |
| 6. Member Report Synchronization | |
| 7. Member Report Download | |
| 8. Member Report Housekeeping | |
| 9. Function Available Time | |
| 10. Contingency Handling | |

*Remarks 1:

This is refer to the document of

http://www.hkex.com.hk/-/media/HKEX-Market/Services/Rules-and-Forms-and-Fees/Forms/OTC-Derivatives/Clearing/Operations--a--Technical/Clearing-Operations/OTC_Clear_OASIS_Configuration_Guide.pdf?la=en

Step 1: Hardware Setup

(This part is refer to

http://www.hkex.com.hk/-/media/HKEX-Market/Services/Rules-and-Forms-and-Fees/Forms/OTC-Derivatives/Clearing/Operations--a--Technical/Clearing-Operations/OTC_Clear_OASIS_Configuration_Guide.pdf?la=en

Step 1: Hardware Setup)

Step 2: Communication Line Setup

Step 2.1 Connect the PC to SDNet/2 Routers

(This part is refer to

http://www.hkex.com.hk/-/media/HKEX-Market/Services/Rules-and-Forms-and-Fees/Forms/OTC-Derivatives/Clearing/Operations--a--Technical/Clearing-Operations/OTC_Clear_OASIS_Configuration_Guide.pdf?la=en

Step 2.1)

Step 2.2 Firewall Setup

This section provides the necessary firewall setup information between the Member PC for sFTP Service of ECP-PT and the SDNet/2 routers.

The followings are the IP addresses of the production sFTP servers connecting the Member PC for ECP:

Server	Production IP Address	Site
ECP-PT	10.154.11.141 10.154.11.142	Primary
ECP-PT	10.153.11.141 10.153.11.142	Secondary/DR

The following services should be granted in the firewall.

	Port No.	Protocol	Direction	Descriptions
SFTP	18801	TCP	From Member PC to ECP-PT	Online Traffic

Access to development ECP-PT

Clearing members are required to apply for development SDNet/2 link when there is a need to access development environment of ECP-PT for OASIS reports download Services.

Server	Development IP Address
ECP-PT	10.154.11.141

It is highly recommended to setup a dedicated network segment for testing Member PC for sFTP Service Testing.

Source IP Address

Each Clearing Member is assigned with a pre-defined range of IP addresses. The Clearing Member should ensure that each Member PC for sFTP Service should appear with the same IP address as original in each connection. If there is any Network Address Translation (NAT) being performed, the Clearing member's firewall should translate it back to the original IP address range (assigned by network vendor) otherwise the terminal login authentication will fail. In addition, the NAT should be a one-to-one mapping to the terminal. In another words, the IP address of each Member PC for sFTP Service should be translated to a unique value within the original IP address range.

Step 3: Windows IP Address and Configuration Setup - TCP/IP for SDNet/2 Router & Ethernet Card Connection

(This part is refer to

http://www.hkex.com.hk/-/media/HKEX-Market/Services/Rules-and-Forms-and-Fees/Forms/OTC-Derivatives/Clearing/Operations--a--Technical/Clearing-Operations/OTC_Clear_OASIS_Configuration_Guide.pdf?la=en
Step 3)

Step 4 : Member Key Management

Clearing Members of OTC Clear need to generate a pair of SSH private and public keys, and register the said public keys for each of the SFTP user accounts.

HKEX accepts RSA between 2048 bits and 4096 bits public keys in SSH2 format.

For example:

```
---- BEGIN SSH2 PUBLIC KEY ----  
Comment: SSH KEY  
AAAAB3NzaC1kc3MAAACBAPY8ZOHY2yFSJA6XYC9HRwNHxaehvx5wOJ0rzZdzoSOXxbET  
W6ToHv8D1UJ/z+zHo9Fiko5XybZnDlaBDHtblQ+Yp7StxyltHnXF1YLfKD1G4T6JYrdH  
YI14Om1eg9e4NnCRleaQoZPF3UGfZia6bXrGTQf3gJq2e7Yisk/gF+1VAAAAFQDb8D5c  
vwHWTZDPfX0D2s9Rd7NBvQAAAIEAIN92+Bb7D4KLYk3IwRbXblwXdkPggA4pfdtW9vGf  
J0/RHd+NjB4eo1D+0dix6tXwYGN7PKS5R/FPNwxHPapcj9uL1Jn2AWQ2dsknf+i/FAA  
vioUPkmdMc0zuWoSOEsSNhVDtX3WdvVcGcBq9cetzrtOKWOocJmJ80qadxTRHtUAAACB  
AN7CY+KKv1gHpRzFwdQm7HK9bb1LAo2KwaoXnadFgeptNBQeSXG1vO+JsvphVMBJc9HS  
n24VYtYtsMu74qXviYjziVucWKjjKEb11juqnF0GDIB3VVmxHLmxnAz643WK42Z7dLM5  
sY29ouezv4Xz2PuMch5VGPP+CDqzCM4loWgV  
---- END SSH2 PUBLIC KEY ----
```

Each public key should be saved in a separate file with following requirements:

- File extension must be “.pub”
- Filename must not exceed 128 characters and only contains alphanumeric character plus five other characters, which are ‘.’ (dot), ‘-’ (dash), ‘_’ (underscore), ‘ ’ (blank) and ‘@’ (ampersand)

Clearing Members of OTC Clear should send the generated RSA Public Key for Automation on the OASIS report download to OTC Clear administrator of OTC Secure File Transfer (sFTP) through email.

Upon successful registration, the expiration date of the “Current Public Key” will be automatically set as 2 years from registration date.

Clearing Members of OTC Clear might renew the RSA Public Key for Automation on the OASIS Report Download in a predefined timeline confirmed with OTC Clear administrator of OTC Secure File Transfer (sFTP) and send the renewed RSA Public Key to OTC Clear administrator of OTC Secure File Transfer (sFTP) through email.

Clearing Member can renew their SFTP’s public key by upload it into **/key_management/publickey** folder. The upload has completed, an Acknowledgement Files (.rcvd) or Rejection File (.rej) is generated. File will be generated in sub-folder **/key_management/publickey**.

The submitted public key is processing as following

- Validations:
 - o Reject public key file if:
 - Filename with extension other than “.pub”
 - Filename length exceed 128 characters and contains character not alphanumeric plus five other characters, they are '.' (dot), '-' (dash), '_' (underscore), ' ' (blank) and '@' (at sign)
 - Not in SSH2 format
 - Key length is less than 2048 bits or more than 4096 bits
 - It is same as existing public keys
- Virus Scan
- Persists the Renewed Public key in ECP-PT system
- Generate received file (.rcvd) or rejected file (.rej) accordingly

Please note:

- Received File or Rejected File are per SFTP user based
- Received File and Rejected File are cleanup after 24 hours
- SFTP public keys submitted through SFTP and web interface will be registered in the same way and will have the same expiration date.
- If filename longer than the system length, i.e. 128 characters, operation rejected in SFTP level and there is no .rej file generation.

Step 5: Member Report Location

Each Clearing Member of OTC Clear would be given one user account for login. That user account would be able to access to two folders, one folder is for House Activity Reports and the other one is for Client Clearing Activity Reports.

OASIS report would be replicated to the above two folders in specific time interval for Clearing Members to download.

The report folder format is as below:-

House Activity Report:

\download\OTC_HOUSE\yyyymmdd\

Client Activity Report:

\download\OTC_CLIENT\yyyymmdd\

Three zip files would be able to download in the above two folders:-

Zip file Type	File Name	OASIS report to be included in the Zip file	Mode
SOD	SOD_yymmdd.zip	07:30 to 08:45	Append
Intraday	INT_yymmdd.zip	08:46-20:00	Append
EOD	EOD_yymmdd.zip	20:00-24:00	Append

Notes: EOD zip file would be ready for download after 21:45.

The report filename format in the ZIP files as below:

House Activity Report:

reportname_99999999_yyyy-mm-dd hh-mm-ss AM.csv or
reportname_99999999_yyyy-mm-dd hh-mm-ss PM.csv

Client Activity Report:

reportname_C_99999999_yyyy-mm-dd hh-mm-ss AM.csv or
reportname_C_99999999_yyyy-mm-dd hh-mm-ss PM.csv

where 99999999 is the sequence number generated by OCASS.

Note:

1. The above report structure is **ONLY** available in production environment. For Member Testing environment, the content will be provided on request basis.
2. After getting the login profile, Clearing Member can setup their own schedule job, to connect secure file transfer server and retrieve OASIS reports based on their need.

Clearing member would be able to access its Sponsored Settlement Member (SSM) Client Activity Reports

SSM Client Activity Report:

\\download\OTC_SSM\yyyymmdd

Three zip files would be able to download in the above folder:-

Zip file Type	File Name	OASIS report to be included in the Zip file	Mode
SOD	SOD_yymmdd_<SSM_ User-Account-folder-name >.zip	07:30 to 08:45	Append
Intraday	INT_yymmdd_SSM_ User-Account-folder-name.zip	08:46-20:00	Append
EOD	EOD_yymmdd_SSM_ User-Account-folder-name.zip	20:00-24:00	Append

Notes: EOD zip file would be ready for download after 20:30.

Step 6: Member Report Synchronization Schedule

OASIS report would be replicated to the two folders mentioned in above section in a specific time interval in hourly based. The time of report publication in the Automation on the OASIS Report Download sFTP Service will be indicative and subject to actual business volume and system run time.

Step 7: Member Report Download

Clearing Members of OTC Clear are able to download the House Reports and Client Reports through SSH File Transfer Protocol at TCP port 18801 with the SFTP Private Key which had been imported to the user account by OTC Clear Administrator of OTC Secure File Transfer (sFTP), plus corresponding user account ID. Clearing Members of OTC may download the report by self-managed script, self-managed program or key in the command in the command prompt according to their own preference.

Step 8: Member Report Housekeeping

Reports would perform the housekeeping in daily basis. The reports in the Automation on the OASIS report download sFTP Service will remain available to PCMs user account for maximum eighteen calendar days.

*Quoted from OASIS (OASIS) Report Usage Guide :
The OASIS report will remain available to the OASIS user for twelve OTC Clear Clearing Days from the date it is first made available on OASIS*

Step 9: Function Available Time

The service windows of ECP-PT is Sunday 06:00 – next Sunday 01:30. EOD report will be ready after 10:30 p.m. HKT).

Step 10: Contingency Handling

Local Fail-over within TKO Primary Site

Scenario 1

The Automation on the OASIS report download sFTP Service in TKO Primary Server is out of service, the Clearing Members of OTC Clear should connect to OASIS Web Portal for manually report download until further notice by OTC Clear.

Scenario 2

All TKO Primary Servers are out of service, TKO Secondary Servers will be up with the Automation on the OASIS Report Download sFTP Service online which would be informed by OTC Clear.

Site Fail-over from TKO Primary Site to EQX Secondary Site

Scenario 3

Both TKO Primary Servers and Secondary Servers are all out of service, EQX Disaster Recovery Servers will be up with the Automation on the OASIS Report Download sFTP Service online.