

### 1.

#### Introduction

This document provides the Clearing Members of OTC Clear the installation procedures to configure their own PCs for OTC Secure File Transfer (sFTP) for OASIS report download Services.

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 Exchange                       |           |
| 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/Connectivity/SDNet-2/OTC-Clear-\(OCASS\)/OTC-Account-Services-Information-System-\(OASIS\)-Configuration-Guide/OTC-Account-Services-Information-System-\(OASIS\)-Configuration.pdf](http://www.hkex.com.hk/-/media/HKEX-Market/Services/Connectivity/SDNet-2/OTC-Clear-(OCASS)/OTC-Account-Services-Information-System-(OASIS)-Configuration-Guide/OTC-Account-Services-Information-System-(OASIS)-Configuration.pdf)

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## Step 1: Hardware Setup

(This part is refer to

[http://www.hkex.com.hk/-/media/HKEX-Market/Services/Connectivity/SDNet-2/OTC-Clear-\(OCASS\)/OTC-Account-Services-Information-System-\(OASIS\)-Configuration-Guide/OTC-Account-Services-Information-System-\(OASIS\)-Configuration.pdf](http://www.hkex.com.hk/-/media/HKEX-Market/Services/Connectivity/SDNet-2/OTC-Clear-(OCASS)/OTC-Account-Services-Information-System-(OASIS)-Configuration-Guide/OTC-Account-Services-Information-System-(OASIS)-Configuration.pdf)

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/Connectivity/SDNet-2/OTC-Clear-\(OCASS\)/OTC-Account-Services-Information-System-\(OASIS\)-Configuration-Guide/OTC-Account-Services-Information-System-\(OASIS\)-Configuration.pdf](http://www.hkex.com.hk/-/media/HKEX-Market/Services/Connectivity/SDNet-2/OTC-Clear-(OCASS)/OTC-Account-Services-Information-System-(OASIS)-Configuration-Guide/OTC-Account-Services-Information-System-(OASIS)-Configuration.pdf)

Step 2.1)

### Step 2.2 Firewall Setup

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

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

Server	Production IP Address
OTC Secure File Transfer (sFTP) for OASIS Reports Download Services	10.154.11.71 (Primary Site) 10.153.11.71 (Secondary Site)
DNS Server	10.154.11.21 (Preferred) 10.153.11.21 (Alternate)

The following services should be granted in the firewall.

	Port No.	Protocol	Direction	Descriptions
SFTP	10022	TCP	From Member PC for sFTP Service to Web Server	Online Traffic
DNS	53	UDP	From Member PC for sFTP Service to DNS Server	Domain Name Service

Access to development OASIS web portal

Clearing member is required to apply for development SDNet/2 link when there is a need to access development environment of OTC Secure File Transfer (sFTP) for OASIS reports download Services.

Server	Development IP Address
OTC Secure File Transfer (sFTP) for OASIS Reports Download Services	10.153.11.12 (Development)

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/Connectivity/SDNet-2/OTC-Clear-\(OCASS\)/OTC-Account-Services-Information-System-\(OASIS\)-Configuration-Guide/OTC-Account-Services-Information-System-\(OASIS\)-Configuration.pdf](http://www.hkex.com.hk/-/media/HKEX-Market/Services/Connectivity/SDNet-2/OTC-Clear-(OCASS)/OTC-Account-Services-Information-System-(OASIS)-Configuration-Guide/OTC-Account-Services-Information-System-(OASIS)-Configuration.pdf)

Step 3)

### **Step 4: Member Key Exchange**

Clearing Members of OTC Clear provide a SFTP Public Key in readable file format for Automation on the OASIS report download.

The Key pair should be generated in Internet-Drafts SSH Fingerprint Format and Generic Message Exchange Authentication for SSH.

Key Type : SSH2 RSA

Key Size : 2048 bits or above

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.

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.

The server provides the following data encryption algorithm and hash for clearing member to initiate the transfer.

Data Encryption:

aes128-ctr, aes192-ctr, aes256-ctr

Hash:

hmac-sha1, hmac-sha1-96, hmac-sha256, hmac-sha256@ssh.com

## 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:**

\PCMs-User-Account-folder-name\yymmdd\OTCF\

### **Client Activity Report:**

\PCMs-User-Account-folder-name\_C\yymmdd\OTCF\

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.

### **Step 6: Member Report Synchronization Schedule**

OASIS report would be replicated to the two folders mentioned in above section in a specific time interval at hh:40 hourly. 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 10022 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 Automation on the OASIS report download sFTP Service is available from 7:30 a.m. HKT to 11:30 p.m. HKT on every OTC Clear Clearing Day, but unavailable from 7:45 p.m. HKT until OCASS EOD process completion (in general, EOD completion time is around 9:45 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 CES Secondary Site**

#### **Scenario 3**

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