



HKETrades

SEHK OCG Trade Capture

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This Document:

HKETrades.pdf – details how to install, configure and run HKETrades

Revision:

10/10/2014 – M.G. – Produced the first version of this manual.

1. Running HKETrades:

You will need a FIX (TCP/IP) connection to the SEHK OCG Drop Copy system to extract trades and orders from SEHK production / test systems.

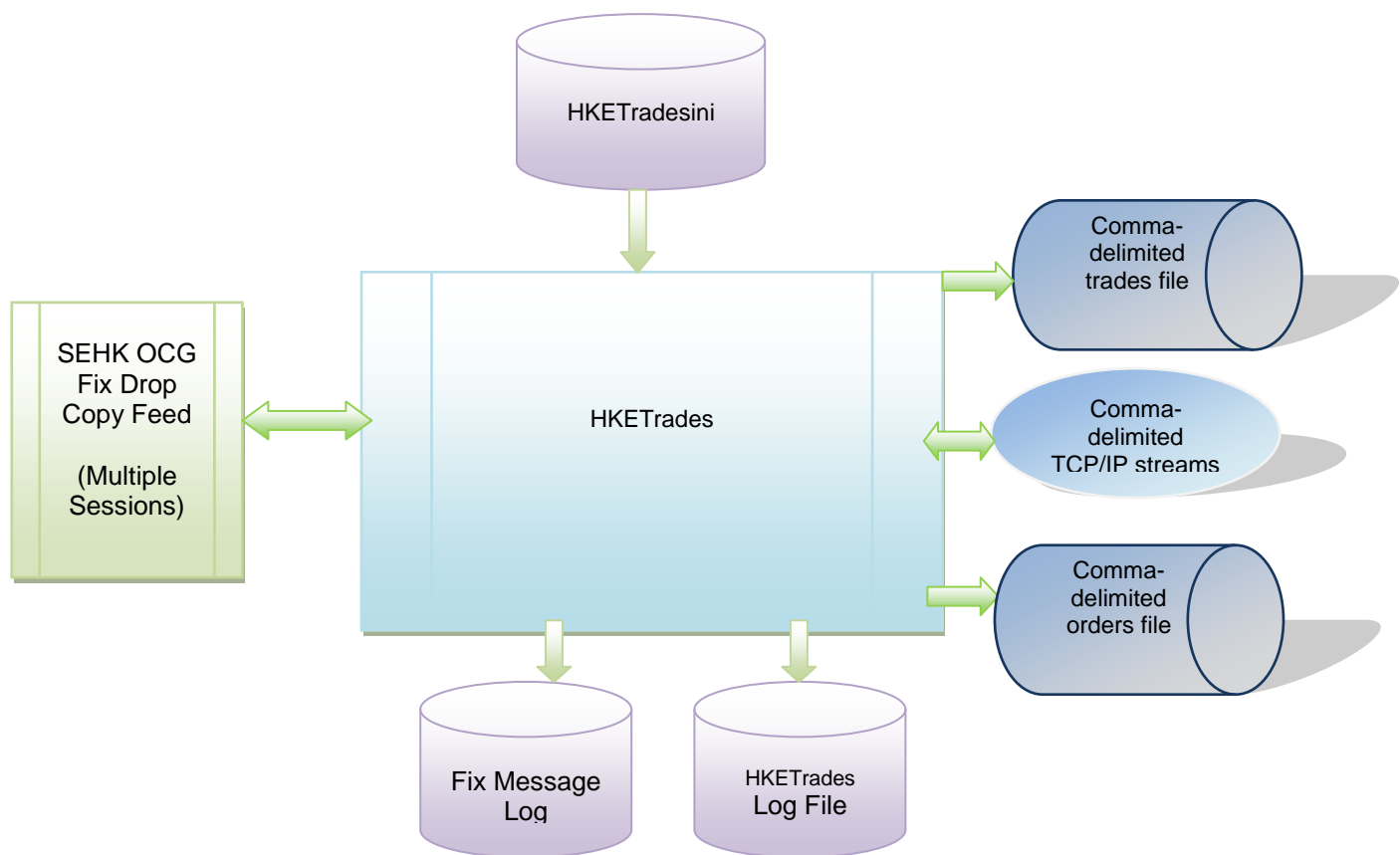


Figure 1. The HKETrades Production System

1.1 Outputs:

Output Data is available as:-

- Comma-delimited file
- Comma-Delimited TCP/IP feed

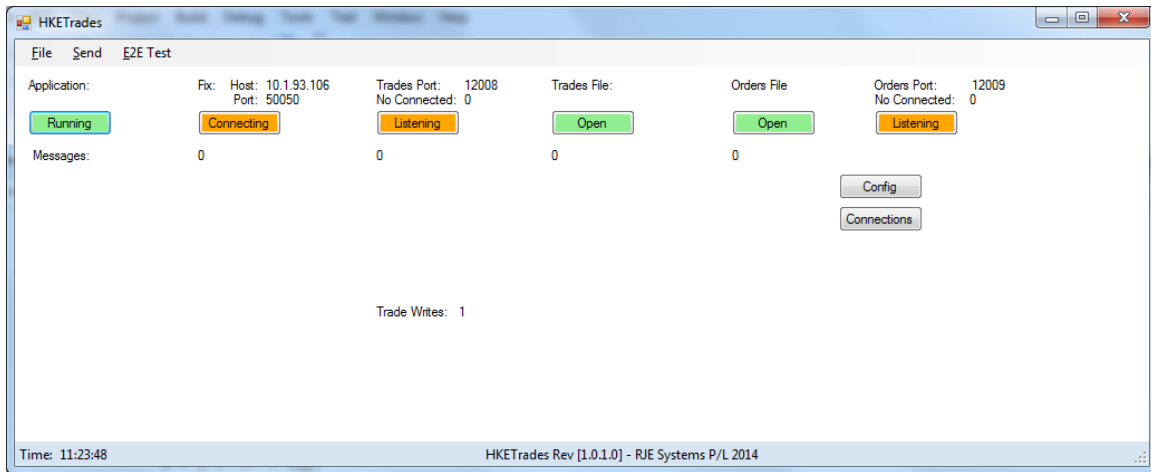
The Comma-Delimited TCP/IP feed is similar to all other MCTrades products.

Production of a Trades or Orders file is dependent on the port being configured.

TRADES_PORT=12008

ORDERS_PORT=12009

1.2 GUI Screen:



The application contains a GUI screen which gives a quick visual indication that everything is working.

Typically, good status values are Green but status values may transit other states during stopping and starting.

Application Status:-

- Starting (Orange)
- Running (Green) – normal
- Stopping (Red)
- Hibernating (Grey) – normal overnight.

FIX Status:-

- Starting (White)
- Recovering (Yellow)
- Connecting (Orange)
- Connected (Green)
- Closing (Grey)

Note: HKETrades supports multiple Drop Copy Sessions; currently the GUI only displays the status of one session.

Trade/Order Port Status:- (if configured)

- Listening (Orange) - accepting connections
- Connected (Green) – one or more clients connected
- Stopping (Grey)

Trades/Order File Status:- (if configured)

- Open (Green)
- Closed (Grey)
- Error (Red)

2. Daily Cycle:

Like HKETrades can be run for multiple days; it shuts down and wakes up at a certain scheduled time each day.

Refer:- [4.6 Daily Cycle Parameters:](#)

WAKE_TIME = time when program wakes up each morning,
SHUT_TIME = time when the program shutdown (hibernation) occurs.

This area functions as per existing MCTrades products.

Note: We currently have no way of detecting Market Closed in SEHK OCG FIX feeds a timed shutdown is the only option. In future we may be able to do more with the Session Status, but it is best to be conservative.

3. Installation:

Install HKETrades as follows :-

<Install Directory> :- HKETrades.exe, HKETrades.ini
<Install Directory>/logs :- make a subdirectory for log files
 APP_LOG_DIRECTORY=logs.
<Install Directory>data :- make a subdirectory for data files.
 APP_DATA_DIRECTORY=data

3.1 Password Encryption (.pem file):

The logon password we send to OCG must be encrypted with a public key supplied by OCG.

This file is specified in the following .ini setting:-
 PUBLIC_KEY_FILE=hkex_ocg_public_key.pem

This file must be stored in the data directory.

3.2 Running MCtradesHKE:

To run the program, run HKETrades.exe, provided the configuration in the .ini file is correct no other information is needed.

You must set the following parameters correctly:-

- Parameters – Fix Connection Configuration [4.1 FIX Connection Parameters:](#)
- Parameters – Fix Logon Configuration [4.2 FIX Logon Parameters:](#)

If you wish to run the program without a GUI refer:- [3.2.7 Other parameters:](#)

Note: When upgrade to a new version intra-day you should copy the FIX log file if installing in a new directory.

4 Configuration:

The main configuration parameters are stored in HKETrades.ini

The number of OCG FIX Drop Copy Sessions is specified in the following parameter:-
NO_SESSIONS=(n)

e.g. NO_SESSIONS=1

For each session there is a separate file:- HKETrades_Session(n).ini

e.g HKETrades_Session1.ini, HKETrades_Session2.ini

The purpose of this is to allow gather Order and Trade data for ABN customer EPs.
A single HKETrades program can gather data for multiple EPS.

Note: There is only one order / trade feed will be output regardless of the number of sessions configured.

4.1 FIX Connection Parameters:

Per session in HKETrades_Session(n).ini

FIX_CONNECTION_POINTS=<host1>|<port1>,<host2>|<port2>,,.....

Example:-

FIX_CONNECTION_POINTS=10.1.93.106|50050,10.1.93.107|50051,10.1.93.108|50052,10.1.93.109|50053,10.1.93.110|50054,10.1.93.116|50050,10.1.93.117|50051,10.1.93.118|50052,10.1.93.119|50053,10.1.93.120|50054

This is a list of host|port pairs to be used in the OCG, Hunt Connection Point process, SEHK will supply this information.

4.2 FIX Logon Parameters:

Per session in HKETrades_Session(n).ini

FIX_SENDER_ID = Part of Fix header, a valid value must be specified. SEHK will supply. Example **FIX_SENDER_ID**= CC15550002

FIX_TARGET_ID = Part of Fix header, a valid value must be specified. SEHK will supply. Example **FIX_TARGET_ID**= HKEXCC

FIX_PASSWORD = Password for Fix Logon. Example **FIX_PASSWORD**= Dc140919

SEHK supplies the initial password which will be changed as needed by automatic password changing. Because of the rules for automatic password changing it is recommended the base is one upper case and 1 lower case letter.

FIX_PASSWORD_BASE=Base for automatic password changing (currently date is appended). Example - **FIX_PASSWORD_BASE**=Dc

FIX_CHANGE_PASS=New Password

Set this parameter to manually change the password. Please take note of SEHK password rules.

e.g. **FIX_CHANGE_PASS**=Aa123456

4.3 Optional FIX Parameters:

FIX_HEARTBEAT=<Heartbeat interval> (Seconds) – default = 20

Example **FIX_HEARTBEAT**=10

Note: You should consult SEHK before setting this parameter, the default of 20 seconds is recommended.

4.4 Data Feed Parameters:

These are TCP/IP ports that applications can connect to receive a feed of data.

Trades:-

TRADES_PORT = TCP/IP port for trades.

Example **TRADES_PORT**=12008

Trades:-

ORDERS_PORT = TCP/IP port for orders.

Example **ORDERS_PORT**=12009

Note: Production of a Trades or Orders file is dependent on the port being configured.

4.5 Logging Parameters:

The application log and FIX log are text files that can be used for trouble shooting.

APP_LOG_FILE = file base for application log, a new log is taken each run; the application log includes the current date and time.

Example **APP_LOG_FILE**= HKETrades ,
The filename produced will be (HKETrades .20110729_150113.log)

APP_LOG_DIRECTORY=Directory where the application log is stored.
Example **APP_LOG_DIRECTORY**=logs

APP_DATA_DIRECTORY=Directory where the Trades file is stored.
Example **APP_DATA_DIRECTORY**=data

APP_DATA_DIRECTORY defaults to **APP_LOG_DIRECTORY** if not specified.

FIX_LOG_FILE = file base for FIX Message Log, the filename always includes the current date. Example **FIX_LOG_FILE**=fix.messages,
The filename produced will be (fix.messages.20011729.log)

FIX_LOG_DIRECTORY=Directory where FIX Message Log is stored.
FIX_LOG_DIRECTORY=logs

If you don't specify these settings, defaults will apply.

Note: In this application the FIX Message Log is important see [7.1 FIX Message Log](#): for more details.

4.6 Daily Cycle Parameters:

Refer:- [2. Daily Cycle](#):

WAKE_TIME = time when program wakes up each morning (hour:min), default 07:00.
Example **WAKE_TIME**=07:30

SHUT_TIME = time when the program shutdown (hibernation) occurs (hour:min)
default 23:30.

Example SHUT_TIME=21:00

4.8 Configuration Files Example :

```
*HKETrades.ini
*****
* RUN WITHOUT GUI      *
*****
*NO_GUI=YES
*
NO_SESSIONS=1

*FIX_HEARTBEAT=16
PUBLIC_KEY_FILE=hkex_ocg_public_key.pem
*
*****
* TCP Clients properties *
*****
* Production of a Trades or Orders file is dependent on the port being configured.
TRADES_PORT=12008
ORDERS_PORT=12009
*
*****
* Application Log File properties *
*****
*
APP_LOG_FILE=HKETrades
APP_LOG_DIRECTORY=logs
*
*****
* Fix Log File properties *
*****
*
FIX_LOG_FILE=fix.messages
FIX_LOG_DIRECTORY=logs
*
*****
* Data (Trades File) Directory *
*****
*
APP_DATA_DIRECTORY=data
*
*****
* WAKE UP/SHUT DOWN      *
*****
*
WAKE_TIME=08:30
SHUT_TIME=23:18
*
*
```



HKETrades

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***** END *****

There is also a separate .ini file for each session.

*HKETrades_Session1.ini

*=====

FIX_PASSWORD=Dc140919

FIX_CONNECTION_POINTS=10.1.93.106|50050,10.1.93.107|50051,10.1.93.108|50052,10.1.93.109|50053,10.1.93.110|50054,10.1.93.116|50050,10.1.93.117|50051,10.1.93.118|50052,10.1.93.119|50053,10.1.93.120|50054

FIX_SENDER_ID=CC15550002

FIX_TARGET_ID=HKEXCC

FIX_PASSWORD_BASE=Dc

*FIX_CHANGE_PASS=Aa123456

*

***** END *****

5 Comma-Delimited Application Development:

One option for developers is to make a TCP/IP connection to HKETrades trade or orders feed ports and receive data in comma-delimited format.

Data is simply sent when it is available; there is no need to request data.

The ports for clients connections are configured in :- [4.4 Data Feed Parameters:](#)

5.1 Comma-Delimited Header:

Most applications would process the header as it gives a list of field names corresponding to field positions.

Trades:-

```
country|S:2,exchange|S:4,market|S:4,trade_date|D,firm_id|S,trader_id|S,msg_no|N,orderId|S,clOrderId|S,exec_id|N:10,execRefID|N:10,execTransType|N:1,OrdStatus|N:1,LastCapacity|N:1,Account|S,quantity|N:9,sec_code|S,price|N:12.7,value|N:18.2,time_trade|T,utc_timestamp|TS,Side|C,OrderQty|N,AvgPrice|N:12.7,CumQty|N,TransactTime|TS,ExecBroker|S,ClientID|S,ExecType|C,LeavesQty|N:10,OrdType|S,TimeInForce|S,OrderCapacity|S,SecurityID|S,IDSSource|N:10,SecurityExchange|S,OrderRestrictions|S,MaxPriceLevels|S,PositionEffect|S,Text|S,Loftype|S,CopyMsgIndicator|S,OrigClOrdID|S,ExecRestatementReason|S,MatchType|S,ContraFirm|S,ClearInstr|S,OrderCat|S,TradeRptID|S,TradeID|S,TRTransType|S,TRType|S,HandInstr|S,TrdType|S,TRStatus|S,ExTradeType|S,TrdMatchID|S,~
```

Orders:-

```
country|S:2,exchange|S:4,market|S:4,trade_date|D,firm_id|S,trader_id|S,msg_no|N,orderId|S,clOrderId|S,exec_id|N:10,execRefID|N:10,execTransType|N:1,OrdStatus|N:1,LastCapacity|N:1,Account|S,quantity|N:9,sec_code|S,price|N:12.7,time_trade|T,utc_timestamp|TS,Side|C,OrderQty|N,AvgPrice|N:12.7,CumQty|N,TransactTime|TS,ExecBroker|S,ClientID|S,ExecType|C,LeavesQty|N:10,OrdType|S,TimeInForce|S,OrderCapacity|S,SecurityID|S,IDSSource|N:10,SecurityExchange|S,OrderRestrictions|S,MaxPriceLevels|S,PositionEffect|S,Text|S,Loftype|S,CopyMsgIndicator|S,OrigClOrdID|S,ExecRestatementReason|S,MatchType|S,TrdMatchID|S,ContraFirm|S,~
```

5.2 Comma-Delimited Data:

Trades:-

HK,HKEX,HKE,20140919,HKEXCC,CC15550002,123,16385,1734,N.yb.S.+V3Ev98,,,1,,,200,700,124,24
800.00,13:55:15,20140919-03:55:15,2,4000,,200,20140919-
03:55:15.000,2558,,F,3800,2,0,,700,8,XHKG,,,,,2,Y,,,4,9956,,,,,,,,,700000000064,~

This feed includes trades from Trade Capture Reports and from order matching
(Execution Reports).

Orders:-

HK,HKEX,HKE,20140919,HKEXCC,CC15550002,71,14801,1718,yb.oD.Fb1,,,0,,,,7,119,13:40:10,20140
919-03:40:10,1,4000,,0,20140919-03:40:10.000,2558,,0,4000,2,0,,7,8,XHKG,,,,,2,Y,,,,,~

This feed includes all execution reports including those for fills.

7 FIX Session Sequence Numbers:

Typically FIX session sequence numbers start from 1 each day.

By default when reconnecting/restarting the sequence numbers at both ends continue on from their previous values and any missing messages are recovered.

Hence, on a restart the application reprocesses the FIX Message log to reestablish from/to sequence numbers.

7.1 FIX Message Log:

Typically the FIX session is continued across runs and there is a single FIX Message log for each day. In that mode, traffic sent / received (including trades) is recovered from the FIX Messages log at startup.

Hence all data files/feeds are rebuilt from the message log each start up.

When resuming the FIX session the application typically only receives new trades and orders.

You can specify a filename/ directory for this file in :- [4.5 Logging Parameters:](#)

For HKETrades you should never delete the FIX message log, if the rare event that is corrupted, you should rename the file.

7.2 Reset FIX Message Sequence Number:

HKETrades should automatically recover from all issues relating to message sequence numbers

It is strongly recommend that you use the automatic process where possible, by simply running the program.

In extreme circumstances, it may be necessary to override the next expected message Sequence Numbers, this can be done using program arguments as follows.

-so {sequenceNumberOut} – HKETrades->OCG

-si {sequenceNumberIn} – OCG->HKETrades.

Note: This is to support a one-off run rather than adding parameters to the .ini file.

In even more extreme circumstances you can request that SEHK resets the sequence numbers. But hopefully you will never need to do that and it is best to avoid it as some data may be lost (not received).

9 Field Mappings Trades <-> FIX:

HKETrades Field Name	FIX Field Name	FIX Field No
Country	RJE	"HK"
Exchange	RJE	"HKEX"
Market	RJE	"HKE"
trade_date	From TransactTime localtime	60
firm_id	SenderCompID	49
trader_id	TargetCompID	56
msg_no	MsgSeqNum	34
orderId	OrderID	37
clOrderId	ClOrdID	11
exec_id	ExecID	17
execRefID	ExecRefID	19
execTransType	ExecTransType	20
OrdStatus	OrdStatus	39
LastCapacity	LastCapacity	29
Account	Account	1
Quantity	LastShares	32
sec_code	SecurityID	48
Price	Price	44
Value	RJE	Calculated
time_trade	TransactTime localtime	60
utc_timestamp	TransactTime utctime	60
Side	Side	54
OrderQty	OrderQty	38
AvgPrice	AvgPx	6
CumQty	CumQty	14
TransactTime	TransactTime	60
ExecBroker	PartyID (PartyRole_ExecutingFirm = "1")	448
BSUserID	PartyID (PartyRole_LocationID =	448

	"75")	
ExecType	ExecType	150
LeavesQty	LeavesQty	151
OrdType	OrdType	40
TimeInForce	TimeInForce	59
OrderCapacity	OrderCapacity	528
SecurityID	SecurityID	48
IDSOURCE	IDSOURCE	22
SecurityExchange	SecurityExchange	207
OrderRestrictions	OrderRestrictions	529
MaxPriceLevels	MaxPriceLevels	1090
PositionEffect	PositionEffect	77
Text	Text	58
LotType	LotType	1093
CopyMsgIndicator	CopyMsgIndicator	797
OrigClOrdID	OrigClOrdID	41
ExecRestatementReason	ExecRestatementReason	378
MatchType	MatchType	574
ContraFirm	PartyID (PartyRole_ContraFirm = "17")	448
ClearInstr	ClearingInstruction	577
OrderCat	OrderCategory	1115
TradeRptID	TradeReportID	571
TradeID	TradeID	1003
TRTransType	TradeReportTransType	487
TRType	TradeReportType	8181
HandInstr	TradeHandlingInstr	1123
TrdType	TrdType	828
TRStatus	TrdRptStatus	939
ExTradeType	ExchangeTradeType	5681
TrdMatchID	TrdMatchID	880

10 Field Mappings Orders <-> FIX:

HKETrades Field Name	FIX Field Name	FIX Field No
Country	RJE	"HK"
Exchange	RJE	"HKEX"
Market	RJE	"HKE"
trade_date	From TransactTime localtime	60
firm_id	SenderCompID	49
trader_id	TargetCompID	56
msg_no	MsgSeqNum	34
orderId	OrderID	37
clOrderId	ClOrdID	11
exec_id	ExecID	17
execRefID	ExecRefID	19
execTransType	ExecTransType	20
OrdStatus	OrdStatus	39
LastCapacity	LastCapacity	29
Account	Account	1
Quantity	LastShares	32
sec_code	SecurityID	48
Price	Price	44
Value	RJE	Calculated
time_trade	TransactTime localtime	60
utc_timestamp	TransactTime utctime	60
Side	Side	54
OrderQty	OrderQty	38
AvgPrice	AvgPx	6
CumQty	CumQty	14
TransactTime	TransactTime	60
ExecBroker	PartyID (PartyRole_ExecutingFirm = "1")	448
BSUserID	PartyID (PartyRole_LocationID = "75")	448
ExecType	ExecType	150
LeavesQty	LeavesQty	151

