



MCTradesSFE

ASX24 Clearing

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Product Information:

Please consult the RJE Web Site www.rje.com.au for the latest information on RJE products.

Similar MCTrades products exist for other exchanges:- e.g. SFE, HKEX, SFE.

This Document:

MCTrades – SFE Secur Trades - this document describes the feed of trades and other data from the ASX24 Clearing System.

Revision:

20/01/2014 – Completely revised manual for Genium version.



1. Overview:

1.0 Program Operation:

There is a separate MCsecuSF E component, which communicates with the ASX24 clearing system via OM API.

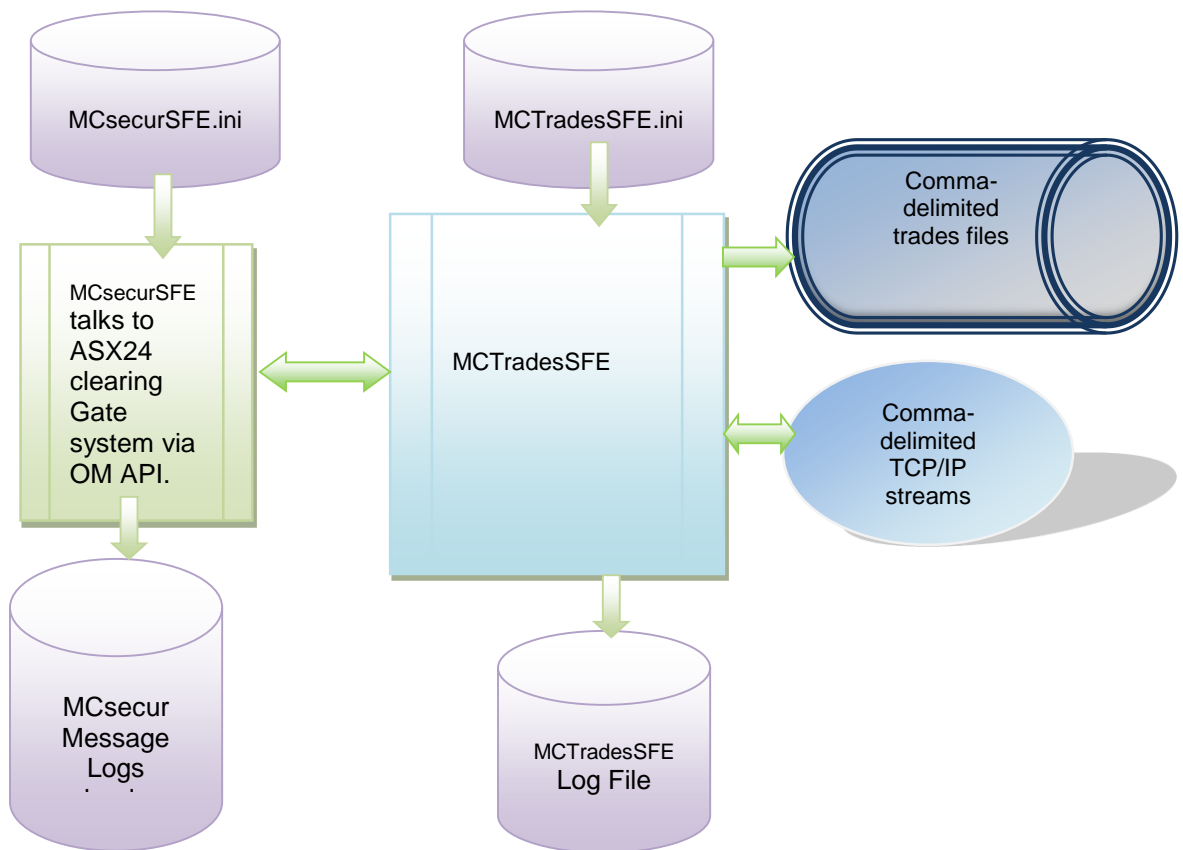


Figure 1. The MCTradesSFE Production System



1.1 MCTradesSFE:

The MCTradesSFE Program:-

- Connects to the ASX24 Clearing system via MC SecurSFE
- Captures and provides a TCP/IP feed of trades.
- Captures and provides a TCP/IP feed of giveups.
- Provides a TCP/IP stream of positions data on request.
- Provides TCP/IP stream of closing prices on request.
- A single copy of MCTradesSFE can collect data for the AU (Sydney), NZ and CD markets.

The configuration settings for the system are found in MCTradesSFE.ini

2. Daily Cycle:

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

Refer:- [3.2.6 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 RJE products.

This topic is covered in more detail in [6. Daily Operations:](#) below.



3. Installation/Configuration:

3.1 Installation:

3.1.1 MCTradesSFE:

Simply install MCTradesSFE as follows :-

<Install Directory> :- MCTradesSFE.exe, MCTradesSFE.ini
<Install Directory>/logs :- make a subdirectory for log files.
<Install Directory>/data :- make a subdirectory for data files.

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

To connect to ASX24 Clearing MCsecurSFE must also be running.

You must set the following parameters correctly:-

- 3.2.1 MCsecurSFE Connection Parameters
- 3.2.2 ASX24 Genium Logon Parameters.

3.1.2 MCsecurSFE:

Typically, this would be in a separate directory but could be on the same machine.

Simply copy all files as follows;

<Install Directory> :- MCsecurSFE.exe, MCsecurSFE.ini
<Install Directory>:- libeay32.dll, oapimtdll.dll, ssleay32.dll, zlib1.dll
<Install Directory>/logs :- make a subdirectory for log files.
<Install Directory>:- plogSFE.exe – utility for converting log file extracts to text.*

* Messages to/from ASX24 are recorded in raw binary format. For some difficult to solved problems we may need to run this utility to view the actual data transmitted.



3.2 MCTradesSFE Configuration:

All configuration parameters are stored in MCTradesSFE.ini

3.2.1 MCsecurSFE Connection Parameters:

MC_SFE_SERVER =myhost
MC_SFE_PORT_NO=7001

MC_SFE_HOST = Name of Server running MCsecurSFE.
MC_SFE_SERVER =localhost

MC_SFE_PORT_NO = Port to connect for MCsecurSFE client connections.
MC_SFE_PORT_NO =7002

This corresponds to a port setting in MCsecurSFE.ini:-
CLIENTS_PORT =7001

Note: MCTradesSFE always connects to the J-Gate system via MCsecurSFE.

3.2.2 ASX24 Genium Logon Parameters:

SFE_USER_ID= ASX24 logon user supplied by the ASX.
e.g. **SFE_USER_ID** =OOO_AS001

SFE_PASSWORD= ASX@4 user password initially supplied by the ASX.
e.g. **SFE_PASSWORD** =+password04

*=====

* ASX24 Logins - can specify multiple login sessions here.

*=====

*User Password

SFE_USER_ID =OOO_AS001

SFE_PASSWORD =+password04

SFE_PASS_BASE =AS001

***SFE_USER_ID** =OOO_AC001

***SFE_PASSWORD** =+password01

***SFE_PASS_BASE** =AC001



*SFE_USER_ID =OOO_AN001
*SFE_PASSWORD =+password01
*SFE_PASS_BASE =AN001

ASX24 clearing user passwords can expire and must be changed periodically. MCTradesSFE will detect that a password has expired and will automatically change the password. An .ini file is created/updated in the data directory with the new password; this is a full automated process and should not need manual intervention.

The following parameters can be set for automatic password handling:-
SFE_PASS_BASE=ABCDEF

Note: when multiple logins are used each one should have a different password base.

PASSWORD_DAYS=10

PASSWORD_DAYS=n – change the password ‘n days’ before expiry.



3.2.3 Trades Data:

MCTradesSFE will capture trades information CQ10/BD6 and provide a separate trades feed.

SFE Trades are single-sided, in view of this we have developed a simplified SFE Specific Comma-Delimited view.

You should process this data rather than the .trades file which has 2-sided trades data for historical reasons.

An example of how to configure the trades data output follows below:-

```
OUTPUT=|TYPE:CF|FILE:data\SFETRADE.@DATE....OUT|PORT:9012|HEADER:YES|
```

Example: OUTPUT=|**TYPE:CF**|**FILE:**data\SGXTRADE.@DATE....OUT|**PORT:**9012|**HEADER:**YES|
 OUTPUT=|**TYPE:CM**|**FILE:**data\SGXTRADES.@DATE....OUT|**PORT:**9005|**HEADER:**NO|

TYPE: Output types are:-

- CM – Comma-Delimited format.
- CF - Single side comma-delimited – refer 2.4.3 below.

FILE: Identifies the directory location and output filename that will receive the output data stream. To produce an output filename containing the current date use “@DATE...” as part of the file name.

Example: **FILE:**data\SGXTRADE.@DATE....OUT|

PORT: **Optional, Identifies** the TCP/IP port to which a client program can connect to and receive the output data stream.

HEADER: **Optional,** to include the data record layout headers at the start of the output file, use the **HEADER: YES** option. The default is **NO** headers.

3.2.4 GiveUps Data:

MCTradesSFE will capture giveups information CQ76/BD29 and provide a separate giveups feed.

```
OUTPUT=|TYPE:CM|PORT:9117|DATA:GIVEUPS|HEADER:YES|
```

At present we can only provide a TCP/IP stream of giveups, logic to write a file can be added later if required.



3.2.5 Positions /Closing Price Data:

You can define a number of additional outputs which make data available in various formats via an output filename and/or a TCP/IP port.

These are queries which make a request to ASX24 for the data when a client application (or telnet) connects to a TCP/IP port.

```
QUERY=[TYPE:CM|DATA:POSITIONS|PORT:9003|HEADER:YES|  
QUERY=[TYPE:CM|DATA:CLOSEPRICE|PORT:9004|HEADER:YES|
```

We use the current business date for the queries above.

As a result the Closing Prices query will not supply any data until closing prices are available for the current business date.

```
QUERY=[TYPE:CM|DATA:CLOSEPRICE|PORT:9006|HEADER:YES|ENTER_DATE:YES|  
QUERY=[TYPE:CM|DATA:POSITIONS|PORT:9007|HEADER:YES|ENTER_DATE:YES|
```

Both of the above queries must supply a date field; we use the current business date. As a result the Closing Prices query will not supply any data until closing prices are available for the current business date.

POSITIONS = Position Information (CQ3) – obtains position information for all clients for all configured SFE Secur users.

CLOSEPRICE = Closing Prices – Query Fixing Value (CQ8) – Obtains fixing value information for all configured SFE Secur users.

****END**** is sent at the end of all query data, this is also sent if data is not currently available (system starting up etc).

3.2.6 Daily Cycle Parameters:

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

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

SHUT_TIME = time when the program shutdown (hibernation) occurs (hour:min)
default 23:30.
e.g. SHUT_TIME=21:00



3.2.7 Directory Parameters:

Controlling the directories to which log and data output files are written, these are optional, but it is a good idea to specify these settings.

DATA_PATH=<directory> - location where MCTradesSFE data files are stored.

Example: DATA_PATH=data\

LOG_PATH=<directory> - location where MCTradesSFE log files are stored.

Example: LOG_PATH=logs\

3.2.8 Logging Parameters:

DIAGNOSTIC_LEVEL =<number>

e.g. DIAGNOSTIC_LEVEL =3

Controls the amount of information logged to the MCTradesSFE log, higher numbers log more information.

Our current recommendation is to ignore this parameter and just use the default.



3.2.9 Other Parameters:

MAX_LOGON_ATTEMPTS =<no>

Example: MAX_LOGON_ATTEMPTS =7

Optional limit on unsuccessful log on attempts, it may be required by SGX.

Recommended – don't set this parameter, just used the default (3).

DATED_DELTA_FILES=YES/NO

*=====

* DATED_DELTA_FILES - Series/Underlyings/Instrument Classes

* No = (Default)

* YES = Include the date in the delta filename

* YES - will trigger a full query each day

*=====

DATED_DELTA_FILES=NO

Refer :- [7. Delta Queries:](#)

RUN_ON_WEEKENDS=YES/NO

Set YES to run on weekends. (e.g. special test runs)

LOG_QUERY_OUTPUT=YES/MO

Set YES to capture the output from queries to files, usually used for Qualification Testing.

3.2.10 Alerts:

There are a number of parameters which launch an alert process when a particular conditions occur, this is a legacy feature of our software which is not commonly used.

*=====

* Alerts - launch a process when an alert is triggered

*=====

LA_PROCESS=link.bat

3.3 MCsecurSFE Configuration:

These are similar to parameter settings for similar components e.g. MCclickASX.ini, MCclickSGX.ini.

3.3.1 Client (MCTradesSFE) Connection Parameters:

As mentioned earlier MCTradesSFE must make a TCP/IP connection to MCsecurSFE which in turn talks to the J-Gate system via OM API over a TCP/IP transport.

The corresponding settings for MCTradesSFE are:- [3.2.1 MCsecurSFE Connection Parameters:](#)

CLIENTS_PORT = TCP/IP port that clients (in this case MCTradesSFE) connect to.
CLIENTS_PORT =7001

3.3.2 ASX24 Clearing Connection Parameters:

SFE_SECURE_GATEWAY = ASX24 Gateway to connect to – supplied by the ASX.
e.g. **SFE_SECURE_GATEWAY** =vpnSFE
e.g. **OSE_CLICK_GATEWAY** =oseClick

SFE_SECURE_PORT =Port to use on ASX24 Gateway – supplied by the ASX.
SFE_SECURE_PORT =32024

3.3.3 ASX24 Clearing Connection Options:

These control the use of encryption or compression on the OM API link.

The ASX will advise if Compression or Encryption is to be used and our settings must match theirs.

e.g. **OMNIAPI_COMPRESS** =NO (YES)
e.g. **OMNIAPI_ENCRYPT** =NO (YES)

3.3.5 Logging Options:

These control the amount of information being logged.

DIAGNOSTIC_LEVEL =1 - controls how much information is logged in text diagnostics messages. Higher number mean more information is logged. Just use the default value unless otherwise instructed by RJE support personnel.

LOG_MESSAGES =A - controls amount of info logged

A=All, C=Client, X=Exchange, T=Text, W=Warning, E=Error, N=None

Can specific a single type or multiples (e.g. C+T)

A=C+X+T

T -> All Text messages includes warnings & errors.

W - > Warnings includes errors

Lowest setting is E -> Error messages only.

Error messages are always logged if logging is enabled.

N -> Turns logging off

Log files can get big quickly but logged info gives us the ability to diagnose problems.

LOG_FILTER - further control on amount of info logged for Exchange & MC API messages

D = log deals

5 = log BO5's

When the filter is set no other query response/broadcast message types are logged.

By default the filter is not set and all message types are logged.

Example – the recommended settings for MCTrades are:-

- LOG_MESSAGES =C+W
- LOG_FILTER =D5



3.3.6 Other Configuration Options:

TCPIP_CONNECTIONS =n Allow 'n' concurrent TCP/IP connect attempts (backlog),
Default = 5.

BCAST_POLL_RATE=n - Broadcast Poll Rate - Polls per second (default = 10)
BCAST_HBEAT_POLL=n – Special poll rate for order entry apps not subscribed to
any broadcasts (default = 1).

QUIT_DELAY= 'n' milliseconds - time to wait before closing client socket after sending
quit response. Default = 200 M/S. (You should not need to use this.)

Performance Statistics:

BCAST_STATS=n - Output Broadcast Stats every 'n' seconds - zero default = no stats

Controlling the directories to which log and data output files are written, these are
optional, but it is a good idea to specify these settings.

DATA_PATH=<directory> - location where MC SecurSFE data files are stored.

Example: DATA_PATH=data\

Note: No data files are currently output.

LOG_PATH=<directory> - location where MC SecurSFE log files are stored.

Example: LOG_PATH=logs\



4. Expiry of ASX24 User password:

Customers should be aware:-

- 1) When the SFE sets up a new ASX24 CLEARING user for you, the password will probably be pre-expired.
- 2) The ASX24 CLEARING Password can expire.

4.1 Automatic Password Changing:

Common Parameters:

PASSWORD_DAYS =10 (Default 5 days)

This option sets the days to the expiry limit applies to automatic password changing for all program users. Default is 5 days. Passwords are automatically changed when 'Days To Expiry' is <= this setting.

ASX24 CLEARING Parameters:

SFE_PASS_BASE =user1

Specifying an SFE_PASS_BASE enables automatic password changing.

Passwords are stored in :- [data]\MCTradesSFE_password_<username>.ini..

The **SFE_PASSWORD** is only used when the password.ini file does not exist, however this configuration setting must remain in the file.

Automatically generated passwords are in the form BASE_<date>_<time> and the password base will be truncated if longer than 16 characters.

Additional ASX24 CLEARING Users: - You should set SFE_PASS_BASE to a different value for each user.



4.2 Automatic Password Changing - Common Problems:

Once automatic password changing is established, passwords are created as required and stored in a password (**[data]\MCTradesSFE_password_<username>.ini**) file.

MCTradesSFE will use the user ID password stored in this password file if it exists. If this password file doesn't exist, MCTradesSFE will use the parameters setting (and SFE_PASSWORD) stored in MCTradesSFE.ini file.

Therefore if you need to change a logon user or password then you have a number of options:

If you are USING the automatic password option you have 2 options:

1. Edit the password file (e.g. **[data]\MCTradesSFE_password_<username>.ini**) file to contain the new SFE_PASSWORD. Restart the application and MCTradesSFE will then use the new settings in this password file and will continue to create and store new passwords in this password file as required.
2. Delete the password file (e.g. **[data]\MCTradesSGX_password_<username>.ini**) file and change the appropriate parameters settings(SFE_PASSWORD) in MCTradesSFE.ini file. Restart the application and MCTradesSFE will use these new settings in the MCTradesSFE.ini file to logon and automatically create a new password file and will continue to create and store new passwords in this password file as required.

If you are NOT USING the automatic password option refer to 5.3 Manual Password changing (below):



4.3 Manual Password Changing:

If a password is expired MCTradesSFE will be unable to get ASX24 CLEARING data, it will stop running raising a fatal error alert.

You need to change the ASX24 CLEARING user password to restart the process.

You should also periodically monitor 'Days To Expiry' for your ASX24 user password or institute some other procedure to avoid nasty surprises.

If required, RJE can supply a program which can be used for password changing, but we recommend using automatic password changing above.



5.SFE Secur Field Mappings:

The following table details the SFE Secur Field names and the corresponding MC Trades Field names.

Trade Number External =

SYCOM Deal Number * 100 + 10 + [0 for original registration of Buy side]

SYCOM Deal Number * 100 + 20 + [0 for original registration of Sell side]

SYCOM Deal Number * 100 + 10 + [1 for reversing of Buy side]

SYCOM Deal Number * 100 + 20 + [1 for reversing of Sell side]

SYCOM Deal Number * 100 + 10 + [2 for overtaking of Buy side]

SYCOM Deal Number * 100 + 20 + [2 for overtaking of Sell side]

<u>SFE Secur Field Name</u>	<u>SYCOM Field Name</u>	<u>MC Common Trade Field Name</u>
Trade Number External (Derived)	Derived From DealNumber DealNumber	tsnumber f_sycom_deal_no
Bought or Sold -	-	f_buy_sell *1. f_sfe_trade_type
Series (Name) Series (Binary)	DisplayCode "	security_code_1 c_series_x
Trading Code User Internal	Exchange/Firm/Operator Country/Customer/User	f_trading_code_x f_user_code_x
Timestamp Date Timestamp Time	TradeDateTime TradeDateTime	as_at_date f_as_at_time
Client	AccountCode	c_account_buy/c_account_sell (+ trading_code_x)
Price, Deal Quantity, Trade Customer Information	Price Volume Comment	price quantity buy_cross_reference/ sell_cross_reference;
Deal Source	-	c_deal_source_buy/ c_deal_source_sell
Open Close Request	-	c_open_close_req_buy/ c_open_close_req_sell
Party Order Number Instigant	- Order No*10 + Ord Part No TradeTrigger	c_party_buy/c_party_sell buy_order_id/sell_order_id f_instigant_u
Cab Price Format Original Trade No External Clearing Date	- - -	f_cab_price_ind_u cancelled_tsnumber f_clearing_date
External Trade Fee Type Passthrough Information ->Identifying Multiple User Sessions ->Identifying Multiple User Sessions	TradeType Account	f_ext_trade_fee_type f_passthrough_s f_user_id; f_session_no;



6. Daily Operations:

Once started MCTradesSFE continues to run unless stopped manually.

MCTradesSGX detects that it has retrieved all data from the configured markets.

MCTradesSGX detects that all data has been received from all markets and clients that have retrieved the last trade for today for their set of data, will be informed that all trade data for today has been received .

Clients would be expected to close their connection to Market Connect when they have received all trades for today. After a reasonable time period (5 minutes) has expired MCTradesSFE will close connections to any clients that remain active. (This does not apply to clients accessing the system via files).

Shutdown/rollover is normally driven by MCTradesSFE detecting that it has received all trades for all markets. However, MCTradesSFE will also shutdown at particular shutdown time, this can be varied via the SHUT_TIME: parameter.

MCTradesSFE then waits for a wake up time when it will commence processing data for the following day. However, if the wake up hour is set to zero MCTradesSFE will exit after the nightly shutdown.

Note: trades are stored in a dated “. trades” file and only one day’s trades are kept (in memory) at any given time. Hence, it is necessary to clear out trades for the previous day. Because of this, it is important that the wake up occurs in the morning of each day (after midnight) or the system will process data for the wrong date.

For the reasons above, the date & time on the computer running MCTradesSFE should be correct to a reasonable level of accuracy (e.g. + or - 10 minutes).

However, once is started MCTradesSFE does not need to be run each day, it will keep running unless it or the computer is shutdown, or some other serious problem arises.



7. Delta Queries:

With the migration to Genium we now use delta queries for Series, Underlyings and Instrument Groups as a result new files are present in the data directory:-

- <username>_series.*
- <username>_underlying.*
- <username>_instr_class.*

You can delete these files at any time. But doing so will cause MCTradesSFE to do a full download of this data.

Some exchanges require a full download do done at the start of each day if that is required it can be achieved by setting DATED_DELTA_FILES=YES

– see [3.2.9 Other Parameters:](#)

8. Clearing Transaction Processing:

Our software retains the ability to execute a number of clearing transactions in response to simple messages sent over a TCP/IP connection.

As this logic is not in use at customer sites we do not routinely test or qualify those transactions.

Should a customer require this facility at a future date, it is easily re-enabled.

However, we would need to repeat the Qualification Test before a customer could use this in a production environment.