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Related Documents:

MC SecurHK – DCASS Secur system this document details how to install, configure and run MC SecurHK.

Note: MCTradesHK uses MC SecurHK to communicate with the DCASS Secur system.

MCTrades_cmd.doc - Market Connect Trades – Command Strings - describes how to perform OM Secur transactions by sending simple command strings to MCTrades.

This Document:

MCTradesHK.doc – MCTrades for the HKEX DCASS Secur settlement system - this document details how to install, configure and run MCTradesHK.

Revision:

03/09/2007 – M.G. – 191HKE01 – Revised manual for DCASS 19.1.

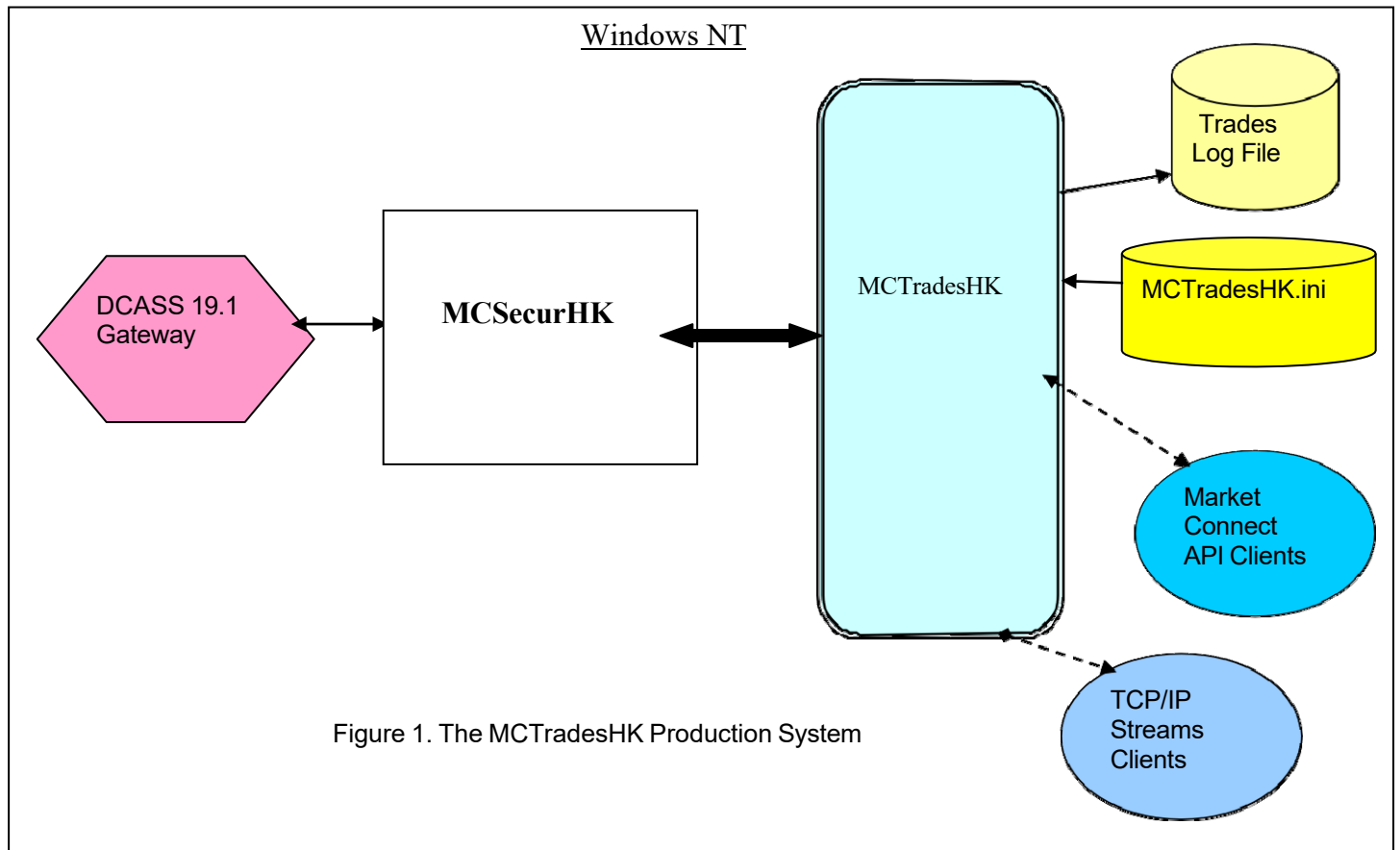
19/07/2021 – C Carroll – Manual Update.

Similar MCTrades Products:

The MCTradesASX system supports extracting trade information from the ASX ITS system and similar MCTrades products exists for other exchanges:- SFE, SGX.

1. Running MCTradesHK:

You will need a connection to HKEX DCASS 19.1 system.



1.1 Requirements:

To run MCTradesHK you will need the following:-

1. A Windows NT computer to run the application and a running copy of MC SecurHK. The MCTradesHK application can run on the same computer as your MC SecurHK or it can be run on a different computer.
2. To request DCASS data you need a connection to HKEX DCASS and a DCASS User ID and Password. (The relevant gateway/port must be configured in MC SecurHK.ini)

This version of MC Secur / MCTrades is for use with the DCASS 19.1 only. Other exchanges such as ASX, SFE and SGX are supported via similar products.

1.2 MC SecurHK:

Details of how to install and configure MC SecurHK are found in MC SecurHK.doc.

1.3 Install Process:

You should receive the following files:-

Windows MCsecrHK.exe, MCsecrHK.ini
 MCTradesHK.exe, MCTradesHK.ini

These files need to be copied to the directory where you want to run MCTrades and this can be any directory.

1. Edit MCsecrHK.ini, install MCsecrHK as per MC SecurHK.doc.
2. Edit the MCTradesHK.ini file to set 'site specific' parameters.
(See 2. *MCTrades Configuration* below).
3. Ensure that the Market Connect Server is running. (MCsecrHK.exe)
4. Run: MCTradesHK or MCTradesHK <filename.ini>
When not supplied, <the filename.ini> defaults to MCTradesHK.ini.

Note: If for any reason MCTrades is stopped and restarted during the day. It will recover previous captured trades from the local log file before it requests missing or additional trades from the DCASS.

2 MCTradesHK Configuration File:

Example – Lines starting with an asterisk are comment lines

```

* MCTradesHK.ini
=====
CLIENTS_PORT    =9010
=====
* Command String Clients -> MCtrades_cmd.doc
CMD_CLIENTS_PORT =9011
CMD_DEFAULT_ACCT =HK|CMPF|
=====
* Data Directory / Logging
=====
LOG_PATH        =logs\
DATA_PATH       =data\
*DIAGNOSTIC_LEVEL =3
*
PASSWORD_DAYS   =10
* Automatic password changing.
*MAX_LOGON_ATTEMPTS =7
* Optional limit on unsuccessful log on attempts.
=====
* DCASS System Parameters
=====
* MC_SECUR_SERVER - MCsecrHK process for DCASS Gateway connection.
*
MC_SECUR_SERVER =rjecom4
MC_SECUR_PORT_NO =7002
=====
* DCASS Logins - can specify multiple login sessions here.
=====
*DCASS_USER_ID   =BO_CMPFAT901
*DCASS_PASSWORD =OAPITEST
*DCASS_PASS_BASE =USER1
DCASS_USER_ID    =BO_CMPFAT902
DCASS_PASSWORD   =OAPITEST
DCASS_PASS_BASE  =USER2
=====
* FILTERS
=====
* Filters don't apply to DCASS all outputs include all trades.
=====
* OUTPUTS
=====
OUTPUT=[TYPE:CF|FILE:data\HKTRADE.@DATE....OUT|PORT:9012|HEADER:YES|
*
*Previous Version >> OUT:CF:data\HKTRADE.@DATE.....OUT:9012/K/H
=====
* QUERIES
=====
QUERY=[TYPE:CM|DATA:POSITIONS|PORT:9003|HEADER:YES|
QUERY=[TYPE:CM|DATA:CLOSEPRICE|PORT:9004|HEADER:YES|
QUERY=[TYPE:CM|DATA:CLOSEPRICE|PORT:9006|HEADER:YES|ENTER_DATE:YES|
QUERY=[TYPE:CM|DATA:POSITIONS|PORT:9007|HEADER:YES|ENTER_DATE:YES|
QUERY=[TYPE:CM|DATA:MARGINS|PORT:9009|HEADER:YES|ENTER_DATE:YES|
QUERY=[TYPE:CM|DATA:MARGINACC|PORT:9013|HEADER:YES|ENTER_DATE:YES|
QUERY=[TYPE:CM|DATA:MARGINMEM|PORT:9014|HEADER:YES|ENTER_DATE:YES|
*
*Previous Version >> QUERY:CM:MARGINMEM:9014/H/D

```

2.1 Required Parameters - DCASS

MC_SECUR_SERVER =<hostname> - Name of host computer running the MCsecurHK process. It can be run on the same machine as MCTrades.

MC_SECUR_PORT_NO=<Port No> - TCP/IP Port number on which MCsecurHK is accepting client connections, must match MCclickASX configuration parameter CLIENTS_PORT.

DCASS_USER_ID =<DCASS User name> will be supplied by DCASS.

DCASS_PASSWORD =<Password> - Your Password for the above DCASS user ID.

e.g.

```
MC_SECUR_SERVER      =ourMachine
MC_SECUR_PORT_NO     =7002
DCASS_USER_ID        =ourUser
DCASS_PASSWORD       =$password1
```

See also 5.1 Automatic Password Changing, 5.2 Automatic Password Changing - Common Problems (below).

2.2 Additional DCASS Users:

The system supports a number of DCASS sessions, but currently it is unlikely any customer will need to use this facility.

```
DCASS_USER_ID      =<user2>
DCASS_PASSWORD     =<password2>
```

Note: When additional users are configured sessions are number 0..n in the order they appear in the .ini file. In that situation RJE recommends using user name rather than the session no to direct commands to particular sessions.

2.3 Client Parameters – MC API :

CLIENTS_PORT = <Port no> - The TCP port MC API clients will use to connect to MCTrades. (Legacy Trades only – optional but should be specified otherwise it will default to 9000)

2.4 Client Parameters – Command Strings :

Refer: *6.1 DCASS Secur Transactions* (below) and *MCTrades_cmd.doc* - Market Connect Trades – Command Strings.

CMD_CLIENTS_PORT = <Port no> - The TCP port command string clients will use to connect to MCTrades.

CMD_DEFAULT_ACCT = <account prefix> - allows accounts to be sent in an abbreviated form.

CMD_CLIENTS_PORT =9011
CMD_DEFAULT_ACCT =HK|CMPF|

Alternative:- (Not currently used by any customer.)

CMD_API_PORT - legacy-> MCTrades_client5.c replaced by **CMD_CLIENTS_PORT** for comand string clients.

CMD_API_PORT =9011

2.3 Other Additional 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 MCTrades data files are stored.

Example: **DATA_PATH**=data\

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

Example: **LOG_PATH**=logs\

2.4 Filters and Outputs:

2.4.1 Filters:

Filters don't apply to DCASS all outputs include all trades.

2.4.2 Outputs:

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.

Example: `OUTPUT=[TYPE:CF|FILE:data\HKTRADE.@DATE....OUT|PORT:9012|HEADER:YES|`
`OUTPUT=[TYPE:CM|FILE:data\ASXTRADES.@DATE....OUT|PORT:9005|HEADER:YES|`

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\HKTRADE.@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.

2.4.3 CF – Single Sided Secur Trades:

DCASS Trades are single-sided; in view of this we have developed a simplified single sided comma-delimited view.

In the MCTradesHK.ini config line looks as follows:-

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

(i.e the main difference is "CF" instead of "CM".

The header of this format looks as follows :-

```
country|S:2,exchange|S:4,market|S:4,inst_group|N:4,trade_date|D,seq_no|N:9,f_trade_no|N:9,rec_type|C,complete|C,status|S:4,value|N:18.2,price|N:10.4,order_id|N:20,quantity|N:9,tsnumber|N:9,can_tsn|N:9,time_trade|T,as_at_date|D,sec_code_1|S:33,comment|S:15,c_strike_price|N:10.4,c_cont_size|N:9,c_deal_num|N:9,c_gl_deal_num|N:9,c_trade_type|N:2,c_series|G:SERIES,f_account|G:ACCOUNT,f_party|G:PARTY,f_deal_src|N:3,f_oc_req|N:3,f_open_cl|N:3,time_received|T,time_processed|T,f_price_quot_ft|N:9,f_sycom_deal_no|N:9,f_buy_sell|C,f_ex_trd_typ|N:3,f_trading_code|G:USERCDE,f_user_code|G:USERCDE,f_as_at_time|T,f_instigant|N:3,f_cab_price_ind|N:3,f_clearing_date|D,f_ext_trade_fee|C,f_passthrough|S:32,f_user_id|S:32,f_session_no|N:3,f_orig_trade_no|N:9,f_comission|N:9,f_residual|N:9,f_csign_code|G:USERCDE,c_orig_series|G:SERIES,c_new_series|G:SERIES,f_pos_account|G:ACCOUNT,f_ext_seq_nbr|N:9,f_ext_status|N:9,f_ord_quantity|N:9,f_rem_quantity|N:9,f_orig_tt|N:3,f_mod_date|D,f_mod_time|T,f_trade_state|N:3,f_attention|N:3,f_account_type|C,f_nbr_held|N:20,f_nbr_written|N:20,f_tot_held|N:20,f_tot_written|N:20,f_last_trad_date|D,f_give_up_no|N:9,f_big_attent|N:9,f_give_up_mem|G:PARTY,f_give_up_state|N:3,f_le_state|N:3,f_instance|N:3,*
```

2.5 Optional Parameters:

SHUT_TIME = <HH:MM>: -

Overrides shutdown time this is the time at which MCTrades shuts down to facilitate overnight rollover. Refer -3 *Daily Operations*: below for more details.

If this parameter is not set the default shutdown is 23:30.

SHUT_TIME=hour: min (e.g. SHUT_TIME:23 30 = default)

Note: You should be careful when setting shutdown / wake up times, the system date should change between shutdown and wake up. When shut hour == 23; the program will wait for a change of date before commencing processing for the next day. Test very carefully if using any other value and/or contact RJE.

WAKE_TIME=<HH:MM>: -

Overrides wake up time this is the time at which MCTrades wakes up following an overnight rollover. Refer -3 *Daily Operations*: below for more details.

If this parameter is not set the default wake-up is 07:00.

WAKE_TIME=hour min (e.g. WAKE_TIME=07:00 = default)

NO_PASSWORDS=YES

Suppresses the writing of user passwords to MCTrades*.log files.

2.6 Optional Alert Parameters:

Optional Alert parameters: - Refer 3.5 Alerts for more details.

MA_PROCESS=<process>

MA_ARG=<arg>

Example:

```
MA_PROCESS=mirror_test.sh
```

```
MA_ARG=arg1
```

This option runs this ‘Mirror Alert’ process when mirroring is configured and your mirror process has stopped running. This option should be used if you are running a mirror process, as data is forwarded to the mirror process first before it is made available to output files/TCP/IP ports and if the mirror process is not running no data will be sent to your outputs.

When triggered by an alert, mcmirror should always be started with the `-x` option to ensure that it only runs for 1 day, refer 2.4 Alerts.

RJE provides an example of automatically starting mcmirror in `mirror_test.sh`, but we don’t recommend this approach. A far safer approach is to have your alert process inform someone that something has gone wrong.

SA_PROCESS= <process>

SA_ARG= <arg>

This option runs this ‘Server alert’ process when it cannot connect to the MCclickASX.

FA_PROCESS=<process>

FA_ARG=<arg>

This option runs this ‘Fatal alert’ process when it is about to exit with a fatal error. (ITS password invalid)

LA_PROCESS= <process>

LA_ARG=<arg>

This option runs this ‘Link alert’ process when the link to a particular market Goes down.(New Solaris example link_alert.sh). This ‘Link alert’ is activated once per hour until the link comes back up.

PA_PROCESS=<process>

PA_ARG= <arg>

This option runs this ‘Password alert’ process when the ITS Password is about to expire (DaysToPasswordExpiry <= 5). Setting <arg> to TEST will trigger this alert regardless of DaysToPasswordExpiry.

For Solaris sites password_alert.sh provides an example of how to generate a mail message in response to this alert.

Note: the general considerations in relation to alerts outlined to 2.4 Alerts.

2.7 Optional Parameters – Specific to DCASS:

MAX_LOGON_ATTEMPTS =<no>

Example: MAX_LOGON_ATTEMPTS =7

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

2.8 Processing Data for Previous Days:

2.8.1 Processing a .Trades file:

Processing a dated .trades file into signal files D=<date>.

Example: D=20061205

This facility is only available as a command-line option.

```
MCTradesHK D=20061205
```

```
MCTradesHK <iniFile> <dir> D=20061205
```

This facility is used to achieve a rerun of MCTrades for a particular date, including testing/rerunning client programs. All data is taken from the .trades file, it can be run for any date provided you have a .trades file for that data. It does not connect to the ITS system.

2.9 Command Line Arguments:

You may use the following command line arguments to override the settings specified in the .ini file. This is intended for use when testing or in unusual circumstances.

Usage: MCTradesHK <iniFile> <dir> -v [-dp path] [-lp path] [D=date]

: -v Verbose mode
: -dp Data Path
: -lp Log Path
: -d=date rerun previous days trades

Verbose Mode – causes MCTrades to output/log a message when storing each DCASS trade, it may slow MCTrades down (very slightly if at all).



3. Advanced Topics:

3.1 Alerts:

You can configure MCTrades to run particular processes .bat files, shell scripts, and executables of your choosing when an unexpected or erroneous situation occurs.

Refer 1.4.3 Optional Parameters above.

The use of alerts is entirely optional and is best used to inform someone that something has gone wrong.

Alerts can be configured for:

1. Fatal error within MCTrades
2. Link error where the connection to a market is lost
3. Password error, where a password is about to expire

RJE recommends careful testing of alert processes before using them in a production environment. This is particularly true in a Solaris environment where alert processes that do not terminate may cause problems for MCTrades on the following morning. The solution is to kill the errant alert process, the problem is best avoided by ensuring your alert processes always terminate. (Contact RJE for more details.)

4 Daily Operations:

Once started MCTrades continues to run unless stopped manually.

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

MCTrades 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 MCTrades 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 MCTrades detecting that it has received all trades for all markets. However, MCTrades will also shutdown at particular shutdown time, this can be varied via the SHUT_TIME: parameter.

MCTrades 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 MCTrades 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 MCTrades should be correct to a reasonable level of accuracy (e.g. + or - 10 minutes).

However, once is started MCTrades 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. (e.g. expiry of the SEATS OI password.)

MCTrades should continue to run if and or when the market connect server (/MCseucrHK) is shutdown and restarted.

5. Expiry of the DCASS Password:

Customers should be aware:-

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

5.1 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.

DCASS Parameters:

DCASS_PASS_BASE =user1

Specifying an DCASS_PASS_BASE here enable automatic password changing.
Passwords are stored in :- [data]\MCTradesHK_password_<username>.ini..

DCASS_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 DCASS password base will be truncated if longer than 16 characters.

Additional DCASS Users: - You should set DCASS_PASS_BASE to a different value for each user.

5.2 Automatic Password Changing - Common Problems:

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

MCTradesHK will use the user ID and password stored in this password file if it exists. If this password file doesn't exist, MCTradesHK will use the parameters settings (DCASS_USERID and DCASS_PASSWORD) stored in MCTradesASX.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]\MCTradesHK_password_<username>.ini) file to contain the new DCASS_PASSWORD. Restart the application and MCTradesHK 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]\MCTradesHK_password_<username>.ini) file and change the appropriate parameters settings (DCASS_USERID and or DCASS_PASSWORD) in MCTradesHK.ini file. Restart the application and MCTradesHK will use these new settings in the MCTradesHK.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):



5.3 Manual Password Changing:

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

You need to change the DCASS user password to restart the process.

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

We recommend that you consider using the Password Alert facility Refer 1.4.3 Optional Parameters above.

You can run the RJE supplied MC_password program to change the DCASS user password, if you have no other means of doing so.

See MC SecurHK.doc for more details. 6. Expiry of the DCASS Password.)

If you ask the DCASS for a new user or password, the DCASS will supply you with a pre-expired password. Therefore you must change the password before running MCTrades

1. Use our MC_Password application to create a new password and edit the DCASS_USERID and DCASS_PASSWORD parameters stored in the MCTradesHK.ini file. Restart the application and MCTradesHK will use these new settings to logon.



6. Product Extensions – DCASS Secur:

MCTradesHK allows customers to develop applications to perform various OM secure settlement transactions these are detailed in *6.1 DCASS Secur Transactions* below.

As well, customers can connect to various ‘Query Ports’ to retrieve additional types of settlement information, this is detailed in *2.2 SFE Secur Queries* below.

6.1 DCASS Secur Transactions:

A number of OM Secur transactions are currently available including:-

- Close Out
- Exercise
- Deny Exercise
- Transfer
- Give up

Full details can be found in **Market Connect Trades – Command Strings – *MCTrades_cmd.doc***

6.2 DCASS Secur Queries:

MCTrades can also be configured to issue particular queries on behalf of a client when that client connects to a particular port.

The results of the query are forwarded to the client with/without a comma-delimited header as per the current TCP/IP trades streams.

The best way to understand what your client application will receive is to make a Telnet connection to the port in question and view the results.

The following examples show how to configure the available queries:-

- QUERY=|TYPE:CM|DATA:POSITIONS|PORT:9003|HEADER:YES|
- QUERY=|TYPE:CM|DATA:CLOSEPRICE|PORT:9004|HEADER:YES|
- QUERY=|TYPE:CM|DATA:CLOSEPRICE|PORT:9006|HEADER:YES|ENTER_DATE:YES|
- QUERY=|TYPE:CM|DATA:POSITIONS|PORT:9007|HEADER:YES|ENTER_DATE:YES|
- QUERY=|TYPE:CM|DATA:MARGINS|PORT:9009|HEADER:YES|ENTER_DATE:YES|
- QUERY=|TYPE:CM|DATA:MARGINACC|PORT:9013|HEADER:YES|ENTER_DATE:YES|
- QUERY=|TYPE:CM|DATA:MARGINMEM|PORT:9014|HEADER:YES|ENTER_DATE:YES|

Note: ENTER_DATE:YES means that the client application will supply a query date, where the above queries must supply a date field; we use the current business date.

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

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

MARGINS = Query Margin Ext (RQ6).

MARGINACC = Query Margin Account (RQ21).

MARGINMEM = Query Margin Member (RQ23).

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

7. Troubleshooting:

7.1 Logon Problems:

Refer - 5.2 Automatic Password Changing - Common Problems.

When you get a new user from the ASX or the ASX changes you password, the password will be expired.

Automatic password changing will automatically handle the situation provided a password file with an old password is not present.

7.2 Reprocessing Data From Previous Days:

MCTrades has some ability to process data from previous days refer 2.8 Processing Data for Previous Days.

7.3 Network/Connection Issues:

- Check that MCsecrHK is running.
- Ensure the MCsecrHK version (e.g. 191HKE01) matches the MCTradesHK version (e.g. 191HKE01).
- Try a telnet connection to HK_SECUR_GATEWAY and HK_SECUR_PORT referenced in MCsecrHK.ini.
- Use APITestD.exe to test the DCASS gateway port, user and password.

7.4 General Information:

The MCTrades log file MCTradesHK_<date>_<time>.log provides useful information about the behavior of MCTrades.

RJE Technical support will typically request a copy of this log for logon/startup and network issues.