



R.J.E. Systems Pty. Limited

(Incorporated in NSW)
A.C.N. 002-954-350
ABN 34 002 954 350

All correspondence to :
P.O Box 320
Chatswood NSW 2067

Related Documents:.....	2
Other Information:.....	2
This Document:.....	2
Revision:.....	2
1. Overview:.....	3
1.0 Program Operation:.....	3
1.1 SGXAccTrades:.....	4
2. Daily Cycle:.....	4
3. Installation/Configuration:.....	5
3.1 Installation:.....	5
3.1.1 SGXAccTrades:.....	5
3.1.2 SGXAccSvr:.....	5
3.2 SGXAccTrades Configuration:.....	6
3.2.1 SGXAccSvr Connection Parameters:.....	6
3.2.2 SGX Access Logon Parameters:.....	6
3.2.3 Broker List Parameter:.....	7
3.2.4 Orders Data:.....	7
3.2.5 Trades Data:.....	7
3.2.6 TCP/IP Feed Parameters:.....	7
3.2.9 Logging Parameters:.....	8
3.2.10 Daily Cycle Parameters:.....	8
3.2.11 Other parameters:.....	8
3.3 SGXAccSvr Configuration:.....	8
3.3.1 Client (SGXAccTrades) Connection Parameters:.....	8
3.3.2 SGXAccess Connection Parameters:.....	9
3.3.3 SGXAccess Connection Options:.....	9
3.3.4 Logging Options:.....	9
3.3.5 Other Configuration Options:.....	10
4. Password Changing:.....	11
5. Recovery Strategy:.....	12
6. Order Fields Mappings SGXAccTrades <-> SGXAccess:.....	13
7. Trade Fields Mappings SGXAccTrades <-> SGXAccess:.....	15



Related Documents:

SGX:-

- SGXAccess DropCopy Technical Specifications
- SGXAccess REACH DROP COPY API Technical Document

These are the most relevant SGX documents but there are others.

Other Information:

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

This Document:

SGXAccTrades – SGXAccess Drop Copy Order and Trade feed – details all issues relating to installation and operation of SGXAccTrades.

Revision:

07/02/2014 – Initial Document – SGXAccTrades Rev 01_01.



1. Overview:

1.0 Program Operation:

There is a separate SGXAccSvr component, similar to MCTradesAT.

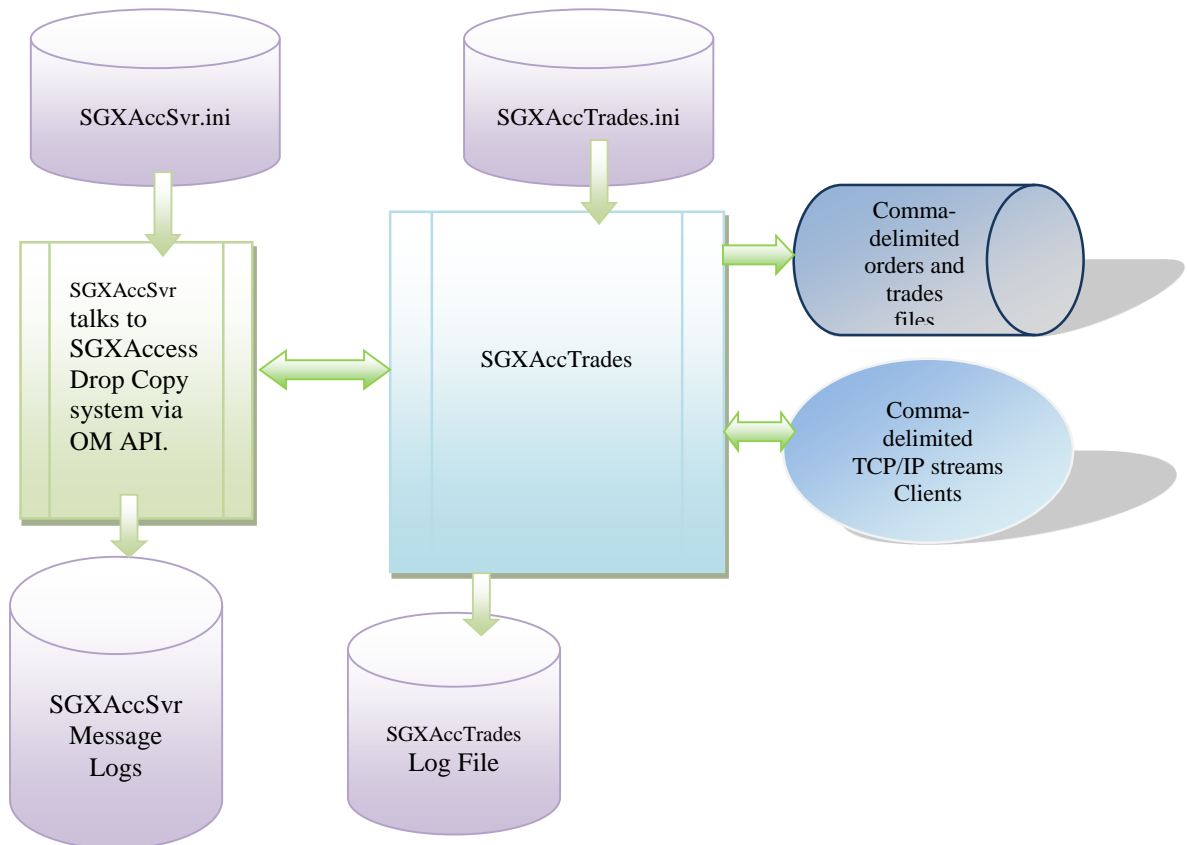


Figure 1. The SGXAccTrades Production System



1.1 SGXAccTrades:

The SGXAccTrades Program:-

- Connects to the SGXAccess Drop Copy system via SGXAccSvr
- Provides TCP/IP stream feeds of orders, transaction and trades information.

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

SGXAccTrades is a replacement for the program SGEQTrades which uses the ODTS system. ODTS is scheduled to be discontinued in 31st March 2014.

2. Daily Cycle:

SGXAccTrades 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.



3. Installation/Configuration:

3.1 Installation:

3.1.1 SGXAccTrades:

Simply install SGXAccTrades as follows :-

<Install Directory> :- SGXAccTrades.exe, SGXAccTrades.ini
<Install Directory>:-au.com.mcx.dll
<Install Directory>/logs :- make a subdirectory for log files.

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

You must set the following parameters correctly:-

- 3.2.1 SGXAccSvr Connection Parameters
- 3.2.2 SGXaccess Logon Parameters
- 3.2.3 Broker List Parameter.

Note: If you wish to run the program without a GUI refer:-[3.2.11 Other parameters:](#)

3.1.2 SGXAccSvr:

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

Simply copy all files as follows;

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



3.2 SGXAccTrades Configuration:

All configuration parameters are stored in SGXAccTrades.ini

3.2.1 SGXAccSvr Connection Parameters:

MC_SERVER_HOST=myhost
MC_SERVER_PORT=7001

MC_SERVER_HOST = Name of Server running SGXAccSvr.
e.g. MC_SERVER_HOST= myhost

MC_SERVER_PORT = Port to connect for SGXAccSvr client connections.
e.g. MC_SERVER_PORT=7001

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

Note: SGXAccTrades always connects to the SGXAccess system via SGXAccSvr.

3.2.2 SGX Access Logon Parameters:

SGX_USER_ID= SGXAccess Logon user supplied by the SGX, this must be a **Drop Copy Readonly** user;
e.g. SGX_USER_ID= 56A24A

SGX_PASSWORD= SGXAccess user password initially supplied by the SGX.
e.g. SGX_PASSWORD=ABCDEF1205G463HIJKLM

SGXAccess user passwords can expire and currently must be changed every 60 days. SGXAccTrades will detect that a password has expired and will automatically change the password to one that is compliant with the SGX rules. The .ini file is updated 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:-

AUTO_PASSWORD_BASE=ABCDEF

CHANGE_PASSWORD_DAYS=10

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



3.2.3 Broker List Parameter:

You must define a list of broker numbers to be monitored by the SGXAccTrades application in this parameter. This setting ensures the SGXAccTrades program does MQ154 orders transaction queries for each broker in the list.

As well, the SGXAccess system must be configured to correctly route orders and trades data for those brokers to the Drop Copy user id.

This should always be tested, both querying existing orders via Broker List at start up and receiving details for any new orders via BO5 broadcasts.

* BROKER_LIST Data Processed for brokers in this list*

BROKER_LIST= 242,243,244,245,24C

3.2.4 Orders Data:

The default behavior is to retrieve orders data and provide a TCP/IP feed of that data,

Set ORDERS=NO if you don't want orders data.

3.2.5 Trades Data:

The default behavior is to retrieve trades data and provide a TCP/IP feed of that data,

Set TRADES=NO if you don't want trades data.

3.2.6 TCP/IP Feed Parameters:

This is the TCP/IP port that applications can connect to receive a feed of orders data.

ORDERS_PORT = TCP/IP port for all Orders.

e.g. ORDERS_PORT=12008

This is the primary feed produced by this application, but it also produces a feed of BO5 transactions and trades, this can be configured as follows:-

e.g. ORD_TRANS_PORT=12012

e.g. TRADES_PORT=12014



3.2.9 Logging Parameters:

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

e.g. APP_LOG_FILE= SGXAccTrades
filename= SGXAccTrades.20140207_122456.log

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

LOGGING_LEVEL= Set the level of application message logging; can turn on additional diagnostic messages.

LOGGING_LEVEL=9

3.2.10 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

3.2.11 Other parameters:

NO_GUI=YES – Specify this value to run without a GUI, e.g. as a Windows NT service.

3.3 SGXAccSvr Configuration:

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

3.3.1 Client (SGXAccTrades) Connection Parameters:



As mentioned earlier SGXAccTrades must make a TCP/IP connection to SGXAccSvr which in turn talks to the SGXAccess system via OM API over a TCP/IP transport.

The corresponding settings for SGXAccTrades are:- [3.2.1 SGXAccSvr Connection Parameters](#):

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

3.3.2 SGXAccess Connection Parameters:

SGX_CLICK_GATEWAY = SGXAccess Gateway to connect to – supplied by the SGX.
e.g. SGX_CLICK_GATEWAY = sgxaccDC

*10.37.253.40 sgxaccDC

SGX_CLICK_PORT =Port to use on SGXAccess Gateway – supplied by the SGX.
SGX_CLICK_PORT =23024

3.3.3 SGXAccess Connection Options:

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

The SGX 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)

3.3.4 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 specify 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

3.3.5 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)
The ASX may instruct users to set the poll rate to a particular value.

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



4. Password Changing:

SGXAccess user passwords can expire and currently must be changed every 60 days. SGXAccTrades will detect that a password has expired and will automatically change the password to one that is compliant with the SGX rules. The .ini file is updated with the new password; this is a full automated process and should not need manual intervention.

See [3.2.2 SGXAccess Logon Parameters](#): for more details.



5. Recovery Strategy:

Each order transaction has a unique key:- OrderID+Symbol+Side

A. When the link to SGXAccess Drops out:-

1. Close all client connections (kicking off, connected applications).
2. Reconnect to J-Gate gap fill transactions (MQ154) and trades (CQ10)
3. Clients should be able to reconnect and receive a feed as per normal.

B. Program stopped/started BO5 transactions file retained:-

1. Load transactions and trades files.
2. Reconnect to J-Gate gap fill transactions (MQ154) and trades (CQ10)
3. Clients can reconnect and all feeds should be in the same sequence.

In other words the only difference between a between the SGXAccess link dropping out and a clean restart is that the program keeps running and attempts to recover.

The other advantage of this scenario is that each restart is a clean restart if things seem to be going wrong you can just restart.

If SGXAccTrades detects any serious problem, it will just stop running.

6. Order Fields Mappings SGXAccTrades <-> SGXAccess:

SGX Orders Field Name	Quest DT Field Name
firm_id	trading_code.ex_customer_s
crader_id	trading_code.user_id_s
crder_id	order_number_u
cl_order_id	exchange_info_s
exec_id	(last trade.trade_number)
exec_trans_type	<No Value>
order_status	order_state_u
order_bos_pos	ob_position_u
Account	ex_client_s
exchange_code	<Always "SGX">
Symbol	Series Name – (series.ins_id_s)
Side	bid_or_ask_c
order_qty	mp_quantity_i
Price	premium_i
last_shares	(last trade.quantity)
cum_quantity	<No Value>
transact_time	<No Value>
Text	customer_info_s
order_type	order_type_c
expire_time	time_validity_n.duration
Commodity	<No Value>
Month	<No Value>
Year	<No Value>
ob_class	<RJE Derived field>
block	block_n
change_reason	change_reason_c
combo_mark	combo_mark_c
display_qty	display_quantity_i
exch_ord_type	exch_order_type_n
ex_state	ext_t_state_c
give_up_member	give_up_member
limit_premium	Stop orders – limit_premium_i
max_rand_hidden	mp_max_random_hidden_i
oc_request	open_close_request_c



order_no_bin	order_number_u
Party	Party
sequence_no	sequence_number_u
Series	Series
stop_condition	stop_condition_c
stop_series	Stop Orders – stop_series
stop_series_name	Stop Orders -(stop_series.ins_id_s)
time_val_type	time_validity_n.type
total_volume	total_volume_i
trading_code	trading_code
transaction_no	Transaction_number_n
user_code	ex_user_code
trans_ack	(Txstat from last BO5 transaction)
active	<RJE Derived field>
unique_key	<RJE Derived field>
created	timestamp_in
modified	execution_timestamp
created_utc	timestamp_in
modified_utc	execution_timestamp
txn_type	<RJE Derived field>
omx_txn_code	e.g. MA154, BO5
omx_click_code	e.g. MO31 (transaction_no)
trd_report	“Y” if order originates from trade report
external_user	sge_exchange_info
party_user	sge_exchange_info
amalgamation	sge_exchange_info
currency_code	sge_exchange_info
Cpf	sge_exchange_info

7. Trade Fields Mappings SGXAccTrades <-> SGXAccess:

SGXAccTrades Field Name	SGXAccess Field Name
country	"SG"
exchange	"SGX"
Market	"EQ"
inst_group	Country market Instrument group – part of series
trade_date	created_date_s
seq_no	sequence_number_i
trade_no	trade_number_i
rec_type	T=trade, C=Cancellation, V=Replacement
Complete	"T"
Status	RJE – generally empty
value	Trade value calculated
price	deal_price_i
order_id	order_number_u
Quantity	trade_quantity_i
order_id	order_number_u
Tsnumber	<No Value>
can_tsn	<No Value>
trade_time	created_time_s
as_at_date	asof_date_s
Symbol	Series Name – (series.ins_id_s)
Comment	customer_info_s
strike_price	Part of series
cont_size	Contract Size -
deal_no	deal_number_i
gl_deal_no	global_deal_no_u
cont_size	Contract Size -
gl_deal_no	deal_number_i
trade_type	trade_type_c
Series	Binary series code
Account	Account
party	Party
deal_src	deal_source_c
oc_request	<No Value> - Wrong



open_close	open_close_req_c
time_received	<No Value>
time_processed	<No Value>
price_quot_ft	Price Quotation Factor -
sycom_deal_no	<No Value>
side	bought_or_sold_c
ex_trd_typ	<No Value>
trading_code	trading_code
user_code	user_code
as_at time	asof_time_s
Instigant	<No Value>
cab_price_ind	<No Value>
clearing_date	clearing_date_s
ext_trade_fee	<No Value>
passthrough	<No Value>
user_id	From trading_code
session_no	RJE
orig_trade_no	orig_trade_number_i
Commission	<No Value>
residual	<No Value>
csign_code	<No Value>
orig_series	orig_series
new_series	<No Value>
pos_account	<No Value>
ext_seq_nbr	<No Value>
ext_status	<No Value>
ord_quantity	trade_quantity_i
rem_quantity	<No Value>
orig_tt	<No Value>
mod_date	modified_date_s
mod_time	modified_time_s
trade_state	trade_state_c
Attention	attention_c
account_type	<No Value>
nbr_held	<No Value>
nbr_written	<No Value>
tot_held	<No Value>
tot_written	<No Value>
date_last_trad	Date Last Trading- from series
give_up_no	<No Value>



und_nom_val	<No Value>
und_nom_dec	<No Value>
unique_key	<RJE Derived field>
t_plus_1	Always "N" at present
external_user	sge_exchange_info
party_user	sge_exchange_info
amalgamation	sge_exchange_info
currency_code	sge_exchange_info
Cpf	sge_exchange_info
acc_int	accrued_interest_value_q
consideration	consideration_q
yield_price	corresponding_yield_price_i
sge_trade_no	sge_trade_number_i
base_cur_s	base_cur_s from instrument class
big_attent	big_attention_u
give_up_member	give_up_member
give_up_state	<No Value>
le_state	le_state_c
le_state	le_state_c
instance	instance_c
client	<No Value>
trade_venue	trade_venue_c