Protocol for Drop Copy

Future & Option Market Trading System

Version 1.7

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National Stock Exchange of India Ltd

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Notice

Future & Option Market Trading System Revision History		
Version	Page No	Description
1.7	10, 20, 22	Changes for Additional Streams in equity derivative Segment

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Chapter 1 Introduction

The NSE Drop Copy is the trade data feed of NSE. It disseminates information about members / users trades on a real time basis. The data is sent to clients on a TCP/IP communication protocol. Members need to connect to separate gateways called 'Drop Copy Gateways' using TCP/IP communication protocol. Login access to Drop copy gateway will be via trading system user credentials only.

A Corporate Manager user will get all member firm level trade data while branch manager and dealer users will get only respective user trade data.

Any changes to the login credentials during the day on the trading system will be effective on drop copy gateway on the same trading day.

The login and trades data structures will be same as used in the existing NNF protocol document.

Chapter 2 General Guidelines

Introduction

This chapter provides general guidelines for the designers and programmers who develop Drop Copy API. It also provides information on data types and their size, which can help in understanding various structures.

Message Structure Details

The message structure consists of two parts namely message header and message data. The message header consists of the fields of the header which is prefaced with all the structures.
The message data consists of the actual data that is sent across to the trading system (i.e. host) or received from the trading system (i.e. host).
Transaction code, an important field of the message header, is a unique numeric identifier which is sent to or received from the trading system. This is used to identify the transaction between the user and the host end.

Guidelines for Programmers

1. All time fields are number of seconds from midnight January 1 1980.
2. If your system uses little-endian order, the data types such as UINT, SHORT, LONG and DOUBLE contained in a packet, which occupy more than one byte should be twiddled (byte reversed). Twiddling involves reversing a given number of bytes such that the byte in ‘n’ position comes to the first position; the byte in (n-1) position comes to the second position and so on. For example, if the value to be sent is 1A2B (hexadecimal), reverse the bytes to 2B1A. The same applies while receiving messages. So if the value received is 02BC, the actual value is BC02. So twiddle such data types before sending and after receiving to ensure that correct data is sent and received.

Note: Twiddling is required because of the variety in endian order—big and little. A big-endian representation has a multibyte integer written with its most significant byte on the left. A little-endian representation, on the other hand, places the most significant byte on the right. The trading system host end uses big-endian order.

3. All alphabetical data must be converted to upper case except password before sending to the host. A combination of alphabet, numbers and special characters are allowed in the password. More details on password are explained in later chapters in this document. No NULL terminated strings should be sent to the host end. Instead, fill it with blanks before sending. The strings received from the host end are padded with blanks and are not NULL terminated.
4. All the structures should be defined in the following manner:
   - Items of type char or unsigned char, or arrays containing items of these types, are byte aligned.
   - All structures are pragma pack 2.
   - All other types of structure members are word aligned.
5. All numeric data must be set to zero (0) before sending to the host, unless a value is assigned to it.
6. All reserved fields mentioned, should be mapped to CHAR buffer and initialized to NULL.

Note:

- The values of all the constants and transaction codes given in the document are listed in Appendix.
- The suffix IN in the transaction codes implies that the request is sent from the Client to the Trading Host end whereas OUT implies that the message is sent from the Trading Host end to Client

Data Types Used

Table 2.1 DATA TYPES

Data Type	Size of Bytes	Signed / Unsigned
CHAR	1	Signed
UINT	2	Unsigned
SHORT	2	Signed
LONG	4	Signed
LONG LONG	8	Signed
DOUBLE	8	Signed and Floating Point
BIT	1 bit	NA

Message Header

Each structure is prefaced with a MESSAGE HEADER which is an interactive header. Some data in the header are fixed whereas some data are variable and set differently for each transaction code. The structure of the Message Header is as follows:

Table 2.2 MESSAGE HEADER

Structure Name	MESSAGE HEADER		
Packet Length	40 bytes		
Field Name	**Data Type**	**Size in Byte**	**Offset**
TransactionCode	SHORT	2	0
LogTime	LONG	4	2
AlphaChar [2]	CHAR	2	6
User Id	LONG	4	8
ErrorCode	SHORT	2	12
TimeStamp [8]	LONG LONG	8	14

Structure Name	MESSAGE HEADER		
Packet Length	40 bytes		
Field Name	**Data Type**	**Size in Byte**	**Offset**
TimeStamp1 [8]	CHAR	8	22
TimeStamp2 [8]	CHAR	8	30
MessageLength	SHORT	2	38

Field Name	Brief Description
TransactionCode	Transaction message number. This describes the type of message received or sent.
LogTime	This field should be set to zero while sending messages to host
AlphaChar [2]	It should be set to blank.
ErrorCode	This field should be set to zero while sending messages to the host. In the messages coming from the host, this field describes the type of error. Refer to List of Error Codes in Appendix.
User Id	Member systems must populate relevant User ID
TimeStamp	This field should be set to numeric zero while sending to the host. This is used in host end. For transcodes listed in appendix, time in this field will be populated in nanoseceonds (from 01-Jan-1980 00:00:00). This time is stamped at the matching engine in the trading system.
TimeStamp1	This field should be set to numeric zero while sending. This is the time the message arrives at the trading system host. In TimeStamp1, time is sent in jiffies from host end.
TimeStamp2	This field should be set to numeric zero while sending to the host. For messages coming from the host, this field contains the stream number from which the packet is coming. In TimeStamp2, stream number is sent from host end. This is 8 bytes in host end and CHAR [8] in front end. In front end, stream number will be populated in array index 7th position (which is the last element of the array). Machine / Stream no. should be interpreted as integer value and not as character value. Values will be numeric value 1,2,3, ….,10,11 etc. and can range from 1 to 127
MessageLength	This field should be set to the length of the entire message, including the length of message header while sending to host.

CONTRACT_INFO

Table 2.3 CONTRACT_INFO

Structure Name	CONTRACT_INFO		
Packet Length	28 bytes		
Field Name	Data Type	Size in Byte	Offset
InstrumentName	CHAR	6	0
Symbol	CHAR	10	6
ExpiryDate	LONG	4	16
StrikePrice	LONG	4	20
OptionType	CHAR	2	24
CALevel	SHORT	2	26

ST_ORDER_FLAG

For Small Endian Machines:

Table 2.4 ST_ORDER_FLAGS

Structure Name	ST_ORDER_FLAGS		
Packet Length	2 bytes		
Field Name	Data Type	Size in Bit	Offset
AON	BIT	1	0
IOC	BIT	1	0
GTC	BIT	1	0
Day	BIT	1	0
MIT	BIT	1	0
SL	BIT	1	0
Market	BIT	1	0
ATO	BIT	1	0
Reserved	BIT	3	1
Frozen	BIT	1	1
Modified	BIT	1	1
Traded	BIT	1	1
MatchedInd	BIT	1	1
MF	BIT	1	1

For Big Endian Machines:

Table 2.5 ST_ORDER_FLAGS

Structure Name	ST_ORDER_FLAGS		
Packet Length	2 bytes		
Field Name	Data Type	Size in Bit	Offset
ATO	BIT	1	0
Market	BIT	1	0

SL	BIT	1	0
MIT	BIT	1	0
Day	BIT	1	0
GTC	BIT	1	0
IOC	BIT	1	0
AON	BIT	1	0
MF	BIT	1	1
MatchedInd	BIT	1	1
Traded	BIT	1	1
Modified	BIT	1	1
Frozen	BIT	1	1
Reserved	BIT	3	1

ADDITIONAL_ORDER_FLAGS

Table 2.6 ADDITIONAL_ORDER_FLAGS

Structure Name	ADDITIONAL_ORDER_FLAGS		
Packet Length	1 bytes		
Field Name	Data Type	Size	Offset
For Small Endian Machines			
Reserved	BIT	1	0
COL	BIT	1	0
Reserved	BIT	6	0
For Big Endian Machines			
Reserved	BIT	6	0
COL	BIT	1	0
Reserved	BIT	1	0

Error Message

When the Error Code in the Message Header is having non zero value, ERROR RESPONSE is sent.

The Error Message will describe the error received.

Table 2.7 ERROR_RESPONSE

Structure Name	ERROR RESPONSE		
Packet Length	180 bytes		
Field Name	Data Type	Size in Byte	Offset
MESSAGE HEADER (Refer Table No 2.2)	STRUCT	40	0
Reserved	CHAR	14	40
Error Message	CHAR	128	54

Field Name	Brief Description
ErrorMessage	Stores the error message. Refer to List of Error Codes in Appendix.

Book Types

There are seven books. These books fall in four markets.

Table 2.8 BOOK TYPES

Book ID	Book Type	Market Type
1	Regular lot order	Normal Market
2	Special terms order	Normal Market
3	Stop loss / MIT order	Normal Market
4	Negotiated order (Not used)	Normal Market
5	Odd lot order (Not used)	Odd Lot Market

Book ID	Book Type	Market Type
6	Spot order (Not used)	Spot Market
7	Auction order (Not used)	Auction Market

Heart Beat Exchange

Member systems must exchange heartbeat signals with exchange trading system during periods of inactivity. Trading Host will consider the member system as inactive after missing two heartbeats in succession, and disconnect the socket connection. Heartbeats will carry following data in *MessageData* segment of the message. Heartbeat is to be sent only if there is inactivity for 30 seconds. The format is MESSAGE_HEADER with following detail.

Table 2.9 HEARTBEAT

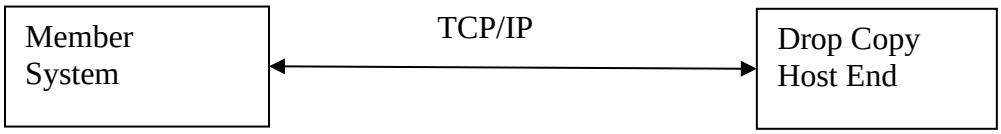
Structure Name	HEARTBEAT		
Packet Length	40 bytes		
Field Name	Data Type	Size in Byte	Offset
MESSAGE HEADER (Refer Table No 2.2)	STRUCT	40	0

Field Name	Brief Description
TransactionCode	The transaction code is HEARTBEAT (23506)

Chapter 3 Drop Copy Communication

Introduction

TCP/IP communication protocol shall be used between Member System and Drop Copy Host end as per the Network setup.



Packet Format

Packet structure for communication between Member System and Host End

This structure is applicable to all messages that flow between Client and Drop Copy Host

Length (2 bytes)	Sequence number (4 bytes)	Checksum(MD5) for Message data (16 bytes)	Message Data (Variable length)

- Max length will be the predefined value of 1024 bytes.

  Length = size of length field (2 bytes) +

  size of sequence number field (4 bytes) +

  size of the checksum field (16 bytes) +

  size of Message data (variable number of bytes as per the transcode).
- Sequence number will start from 1 and will be incremented for every packet.
- Message data will be of variable length and comprises of 40 bytes of message header + variable sized data buffer as per transcode being sent.

- The checksum algorithm used will be MD5. Checksum is applied only on the Message data field and not on the entire packet.
- For more details on MD5 refer: **RFC** 1321 (rfc1321) - The **MD5** Message-Digest Algorithm (http://www.faqs.org/rfcs/rfc1321.html)

Packet Validation

Validation will be done for all requests flowing between Member System and Host End.
Validation will be done through the combination of Checksum, Sequence Number and length field.

Processing by Host

Before sending the request to Host, Member System will have to generate a sequence number and checksum value. All the requests being sent from Front-End will be sent in the format described above.
If validation of sequence number, checksum value & length fails at Host End then the disconnection of the socket connection between Member System and Host End will happen.

Processing By Member System

On receiving the response from Host, Member software is expected to validate sequence number, checksum value & length field.
Sequence number must be in sequential order. For any fresh connection the number should start from 1. Checksum field and the checksum recalculated on the data field must match. Length field must be less than or equal to 1024.
If any one of these validations fails, the Member System needs to drop the connection and reestablish a fresh connection**.**

Chapter 4 Logon Process

Introduction

This section describes how a user logs on to the trading system. It covers the log-on request and the system responses.

The trader, after issuing a sign-on request, waits for the system response. The response could be a successful logon or an error message.

Order of Events to Be Followed During Logon for Drop Copy Feed

The following sequence explains the order in which transaction codes are sent and received during log-on process.

Sequence No	Transaction Code	Sent By	Received By
1	SIGN_ON_REQUEST_IN (2300)	Client	Host End
2	SIGN_ON_REQUEST_OUT (2301)	Host End	Client
3	DC_DOWNLOAD_REQUEST (8000)	Client	Host End

Logon Request & Response

When the user wants to establish a connection with the host, he sends SIGN_ON_REQUEST_IN (2300) request. In response to this request SIGN_ON_REQUEST_OUT (2301) is sent from host.

Table 4.1 SIGNON_IN

Structure Name	SIGNON IN		
Packet Length	278 bytes		
Transaction Code	SIGN_ON_REQUEST_IN (2300) SIGN_ON_REQUEST_OUT (2301)		
Field Name	Data Type	Size in Byte	Offset
MESSAGE HEADER(Refer Table No 2.2)	STRUCT	40	0
UserId	LONG	4	40
Reserved	CHAR	8	44
Password	CHAR	12	52
Reserved	CHAR	4	64
Reserved	CHAR	38	68
BrokerId	CHAR	5	106
Reserved	CHAR	119	111
Reserved	CHAR	16	230
Reserved	CHAR	16	246
Reserved	CHAR	16	262

Field Name	Brief Description
TransactionCode	The transaction code is SIGN_ON_REQUEST_IN (2300) in login request and SIGN_ON_RESPONSE_OUT (2301) in login response
AlphaChar [2]	In SIGN_IN_RESPONSE_OUT this field contains the number of streams from which the drop copy data feed is sent. User needs to send the DC_DOWNLOAD_REQUEST (8000) for each stream to download the trade data.

Field Name	Brief Description
	Note: This field is present in the Message Header. This is of two bytes. Number of streams will be populated in the first byte of Alphachar (AlphaChar[0]) Machine / Stream no. should be interpreted as integer value and not as character value. Values will be numeric value 1,2,3, ….,10,11 etc. and can range from 1 to 127
UserId	This field should contain User ID of user.
Password	This field should contain the password entered by the user. A combination of alphabet, numbers and special characters are allowed in the password. The user should enter the valid password for a successful Logon.
BrokerId	This field should contain the trading member ID.

Logon Error

In case of any error, the structure returned is:

ERROR RESPONSE (Refer to *Error Message* in Chapter 2)

Field Name	Brief Description
TransactionCode	The transaction code is SIGN_ON_REQUEST_OUT (2301).
ErrorCode	This contains the error number. Refer to List of Error Codes in Appendix.

Chapter 5 Drop Copy Message Download

Introduction

NSE drop copy data feed sends the user intended trade confirmation packets to the connected users, for this user has to send the Drop Dopy Download Request on drop copy gateways. In response to this request the trade packets are sent to the user.

The separate request from user is need to be sent for each stream. The number of stream is obtained in SIGNON_OUT from host during login sequence.

Drop Copy Message Download Request

Table 5.1 DROP COPY MESSAGE DOWNLOAD

Structure Name	DROP COPY MESSAGE DOWNLOAD		
Packet Length	48 bytes		
Transaction Code	DC_DOWNLOAD_REQUEST (8000)		
Field Name	Data Type	Size in Byte	Offset
MESSAGE HEADER(Refer to Table)	STRUCT	40	0
SequenceNumber	DOUBLE	8	40

Field Name	Brief Description
TransactionCode	The transaction code is DC_DOWNLOAD_REQUEST (8000).
AlphaChar	This contains the stream number of the host to which it has to send the DC_DOWNLOAD_REQUEST. The alpachar is the character array of size 2. The stream number of the host is sent in the first byte of the alphachar. The number of streams is obtained in SIGN_ON_REQUEST_OUT from host during login sequence.

Field Name	Brief Description
	Machine / Stream no. should be send in the first byte (AlphaChar[0]) of this field and should be of type integer value and not as character value. Values to be sent should be numeric value 1,2,3, ….,10,11 etc. and can range from 1 to 127.
SequenceNumber	This contains the time last message was received by the user. This can be obtained from the Time Stamp1 of the last received trade confirmation packet's MESSAGE HEADER. To retrieve the messages from the beginning of the trading day, this field should be set to '0'.

Trade Confirmation

In response to DC_DOWNLOAD_REQUEST the below mentioned trade confirmation packets are sent to user. The trades happened after the timestamp, sent in Sequence Number field of DC_DOWNLOAD_REQUEST are only downloaded to the user. After recovering the old messaged the trades happening in online market are also sent in the same packet structure.

Table 5.2 TRADE_CONFIRMATION

Structure Name	TRADE_CONFIRMATION		
Packet Length	296 bytes		
Transaction Code	TRADE_CONFIRMATION (2222)		
Field Name	Data Type	Size in Byte	Offset
MESSAGE HEADER (Refer to *Table 2.2*)	STRUCT	40	0
ResponseOrderNumber	DOUBLE	8	40
BrokerId	CHAR	5	48
Reserved	CHAR	1	53
TraderNum	LONG	4	54
AccountNum	CHAR	10	58

Structure Name	TRADE_CONFIRMATION		
Packet Length	296 bytes		
Transaction Code	TRADE_CONFIRMATION (2222)		
Field Name	Data Type	Size in Byte	Offset
BuySell	SHORT	2	68
OriginalVol	LONG	4	70
DisclosedVol	LONG	4	74
RemainingVol	LONG	4	78
DisclosedVolRemaining	LONG	4	82
Price	LONG	4	86
ST_ORDER_FLAGS (Refer Table No 2.4 for small endian machines and Table No 2.5 for big endian machines)	STRUCT	2	90
Gtd	LONG	4	92
FillNumber	LONG	4	96
FillQty	LONG	4	100
FillPrice	LONG	4	104
VolFilledToday	LONG	4	108
ActivityType	CHAR	2	112
ActivityTime	LONG	4	114
OpOrderNumber	DOUBLE	8	118
OpBrokerId	CHAR	5	126
Token	LONG	4	132
CONTRACT_DESC (Refer to Order Entry Request in Chapter 5)	STRUCT	28	136
OpenClose	CHAR	1	164

Structure Name	TRADE_CONFIRMATION		
Packet Length	296 bytes		
Transaction Code	TRADE_CONFIRMATION (2222)		
Field Name	Data Type	Size in Byte	Offset
OldOpenClose	CHAR	1	165
BookType	CHAR	1	166
NewVolume	LONG	4	168
OldAccountNumber	CHAR	10	172
Participant	CHAR	12	182
OldParticipant	CHAR	12	194
ADDITIONAL_ORDER_FLAGS	STRUCT	1	206
ReservedFiller	CHAR	1	207
GiveUpTrade	CHAR	1	208
ReservedFiller2	CHAR	1	209
PAN	CHAR	10	210
OldPAN	CHAR	10	220
Algo ID	LONG	4	230
Algo Category	SHORT	2	234
LastActivityReference	LONG LONG	8	236
Reserved	CHAR	52	244

Field Name	Brief Description
TransactionCode	The transaction code is TRADE_CONFIRMATION (2222).
ResponseOrderNumber	This field contains the order number of the trader's order taking part in the trade.
BrokerId	This field contains the Trading Member ID.
TraderNum	This field contains the trader's or user ID.
AccountNum	This field contains the Account Number or Client code.
BuySell	This field contains one of the following values based on Buy or Sell. '1' for Buy '2' for Sell.
OriginalVol	This field contains the Original traded volume.
DisclosedVol	This field contains the quantity to be disclosed to the market.
RemainingVol	This field contains the volume remaining after trade(s).
DisclosedVolRemaining	This field contains the disclosed volume remaining after trade(s).
Price	This field contains the order price.
OrderFlags	Refer to Table No 2.4 Note : Preopen Indicator will be set as 0 for the trades happening in Normal Market session for Normal Market orders and pre-open carried forward orders Preopen indicator will be set as 1 for trades happening in the call auction 2 market.
Gtd	This field contains the number of days for a GTD Order.
FillNumber	This field contains the trade number.
FillQty	This field contains the traded volume.
FillPrice	This field contains the price at which order has been traded which should be divided by 100 to get actual price in rupees

VolFilledToday	This field contains the quantity traded today.
ActivityType	This field contains the activity type. 'B' for Buy 'S' for Sell
ActivityTime	This field contains the time when the activity took place.
OpOrderNumber	This field contains the order number of the counter order taking part in the trade.
OpBrokerId	This field contains the Trading Member ID of the counter party taking part in the trade.
SEC_INFO	This structure contains the following fields: Instrument Name, Symbol, Strike Price, Option Type and CA Level for the contract.
BookType	This field contains the book type—RL/ ST/ SL/ NT/ OL/ SP/ Auction. Refer to Table no 2.8
NewVolume	This field is always set to zero for trade confirmation. In case of Trade Modification Approval, it contains the modified trade quantity.
OpenClose	This field contains either 'O' for Open or 'C' for Close.
OldOpenClose	For trade confirmation both Open Close and Old Open Close fields are same.
Participant	This field contains the participant name. For trade confirmation, both participant and old participant fields are same.
OldParticipant	In the case of order modification that involves participant change, this field contains the old participant name.
ADDITIONAL_ORDER_FLAGS	This filed is reserved for future use and any value in this field should be ignored (Refer to Table No 2.6)
ReservedFiller	This filed is reserved for future use and any value in this field will be ignored

ProCliFlag	This field contains one of the following values: • '1' for client's order • '2' for broker's order (same as Pro/Client/ Warehouse indicator)
PAN	This field shall contain the PAN
OldPAN	In case of trade modification this field shall contain the old PAN else it will be blank
Algo ID	This field shall contain the Algo ID
Algo Category	This field shall contain the Algo Category
LastActivityReference	This field will contain a unique value for current activity. Currently the same shall be in nanoseconds. Changes if any shall be notified.

Trade Modification Confirmation Response

The trade modification is confirmed and the new trade data is sent.

TRADE_CONFIRMATION *(*Refer to Table No 5.2 discussed earlier in this section*)*

Field Name	Brief Description
TransactionCode	The transaction code is TRADE_MODIFY_CONFIRM (2287).
LogTime (of MESSAGE_HEADER)	This will contain the activity Time i.e. the latest modified time.

Trade Modification Rejection Response

The trade modification is rejected by NSE-Control.

TRADE_CONFIRMATION *(*Refer to Table No 5.2 discussed earlier in this section*)*

Field Name	Brief Description
TransactionCode	The transaction code is TRADE_MODIFY_REJECT (2288).

Trade Cancellation Confirmation Response

When NSE-Control approves the trade cancellation request the structure sent is:

TRADE_CONFIRMATION (Refer to Table No 5.2 discussed earlier in this chapter)

Field Name	Brief Description
TransactionCode	The transaction code is TRADE_CANCEL_CONFIRM (2282).
LogTime (of MESSAGE_HEADER)	This will contain the activity Time i.e. the latest modified time.

Trade Cancellation Rejection Response

When NSE-Control rejects the trade cancellation alert the structure sent is:

TRADE_CONFIRMATION (Refer to Table No 5.2 discussed earlier in this chapter)

Field Name	Brief Description
TransactionCode	The transaction code is TRADE_CANCEL_REJECT (2286).

Giveup Approve/Reject Confirmation Response

Successful Give up Approval Confirmation is sent to the terminal of trading member who had put the participant order (buy/sell). The message sent is as follows

Structure Name	GIVEUP_RESPONSE		
Packet Length	122 bytes		
Transaction Code	GIVEUP_APP_CONFIRM_TM (4506) GIVEUP_REJ_CONFIRM_TM (4507)		
Field Name	Data Type	Size in Byte	Offset
MESSAGE_HEADER (Refer Table 2.2))	STRUCT	40	0
ReasonCode	SHORT	2	40
OrderNumber	DOUBLE	8	42
FillNumber	LONG	4	50
InstrumentName	CHAR	6	54
Symbol	CHAR	10	60
ExpiryDate	LONG	4	70
StrikePrice	LONG	4	74
OptionType	CHAR	2	78
CALevel	SHORT	2	80
FillVolume	LONG	4	82
FillPrice	LONG	4	86
BrokerId	CHAR	5	90
Filler	CHAR	1	95
BuySell	SHORT	2	96
BookType	SHORT	2	98
LastModifiedDateTime	LONG	4	100
InitiatedByControl	CHAR	1	104
OpenClose	CHAR	1	105
ReservedFiller	CHAR	1	106
Participant	CHAR	12	107

GiveupFlag	CHAR	1	119
Deleted	CHAR	1	120

Field Name	Brief Description
TransactionCode	The transaction code is GIVEUP_APP_CONFIRM_TM (4506).
OrderNumber	This field will contain the Order Number for the approved Individual order.
FillNumber	This field contains the trade number
InstrumentName	This field contains the Instrument Name
Symbol	This field should contain a valid Security Name
ExpiryDate	This should contain valid Expiry Date of the contract
StrikePrice	This field will contain a valid strike for Options Contract and for Futures Contract it will be -1.
OptionType	This field contains the OptionType identifier. Valid values are: CE -- CALL OPTION PE -- PUT OPTION XX -- FUTURES Contract
CALevel	This field should contain the Corporate Action Level. It should be zero.
FillVolume	This field contains the quantity of security traded.
FillPrice	This field contains the price at which order has been traded.
BrokerId	This field contains the Trading Member ID.
BuySell	This field should contain one of the following values to specify whether the order is a buy or sell order: '1' denotes Buy order '2' denotes Sell order
BookType	This field contains the book type Refer to Table No 2.8

LastModifiedDateTime	This should contain time of last activity done on that order. Last activity could be order entry, order modification or last trade time of that order. It is in number of seconds from midnight of January 1, 1980.
InitiatedByControl	This field should contain the value Y/N based on approval initiated by Control or not. Host should send N in this field.
OpenClose	This field contains either 'O' for Open or 'C' for Close.
Participant	This field contains the participant name. For trade confirmation
GiveupFlag	This field should contain Give up flag. If giveup is approved, Host should send 'A'.
Deleted	Host should send N is this field.

Appendix

List of Error Codes

Error Code ID	Error Code Value	Description of Error Code
ERR_INVALID_USER_TYPE	16001	Invalid User Type
ERR_USER_ALREADY_SIGNED_ON	16004	User already signed on.
ERR_INVALID_SIGNON	16006	Invalid sign-on, Please try again.
ERR_SIGNON_NOT_POSSIBLE	16007	Signing on to the trading system is restricted. Please try later on.
ERR_INVALID_BROKER_OR_BRANCH	16041	Trading Member does not exist in the system.
ERR_USER_NOT_FOUND	16042	Dealer does not exist in the system.
ERR_PROGRAM_ERROR	16056	Program error.
ERR_SYSTEM_ERROR	16104	System could not complete your transaction - ADMIN notified.
ERR_CANT_COMPLETE_YOUR_REQUEST	16123	System not able to complete your request. Please try again.
ERR_USER_IS_DISABLED	16134	This Dealer is disabled. Please call the Exchange.
ERR_INVALID_USER_ID	16148	Invalid Dealer ID entered.
ERR_INVALID_TRADER_ID	16154	Invalid Trader ID entered.
ERR_BROKER_NOT_ACTIVE	16285	The broker is not active.

List of Transaction Codes

Transaction Code	Code	Structure
SIGNON IN	2300	SIGN_ON_REQUEST_IN
SIGN ON OUT	2301	SIGN_ON_REQUEST_OUT
DROP COPY MESSAGE DOWNLOAD	8000	DROP_COPY_DOWNLOAD_REQUEST
TRADE_CONFIRMATION	2222	TRADE_CONFIRMATION
TRADE_MODIFY_CONFIRM	2287	TRADE_CONFIRMATION
TRADE_MODIFY_REJECT	2288	TRADE_CONFIRMATION
TRADE_CANCEL_CONFIRM	2282	TRADE_CONFIRMATION
TRADE_CANCEL_REJECT	2286	TRADE_CONFIRMATION
GIVEUP_APP_CONFIRM_TM (4506)	4506	GIVEUP_RESPONSE
GIVEUP_APP_CONFIRM_TM (4506)	4507	GIVEUP_RESPONSE

List of Transaction Codes Containing Timestamp in Nanoseconds

The trascation codes that will contain timestamp in nanoseconds from 01-Jan-1980 00:00:00 are listed in following table:

Transaction Code	Code
TRADE_CONFIRMATION	2222

FAQs

Q – What do I need to do before I try connecting directly to Exchange trading system?

You will have to inform Member Services Team, They will help you with the workflow.

Q – Where to connect?

Exchange shall provide a list of addresses, IP address and Port numbers, that member systems must connect to. Member systems must initiate a TCP socket connection to this address.

Q – How to connect?

Member systems must initiate a TCP socket connection to the address given by the exchange. After TCP socket connection, member systems has to follow the login process mentioned in this document

Q – How to Logoff?

Member system has to shut down his TCP connection properly.

Q – What User Ids / Passwords to be used for login to drop copy?

Trading user ID and password should be used.

Q – How to reset the password through drop copy?

Through drop copy user can't reset the password but the password change done on trading system will be get reflected in drop copy system. New login on drop copy, after password reset on trading system, should be done with new password.

Q – With the same user id can we take simultaneously login on Interactive channel for order entry and on Drop Copy channel?

Yes. Drop copy channel is independent of the Interactive channel.

Q – What information shall be provided in the drop copy?

Following information will be sent through Drop Copy system

- Trade confirmation
- Trade modification confirmation
- Trade modification reject
- Trade cancel confirmation
- Trade cancel reject

Q – Will clearing member also get trade data?

Yes. All the trades related to him will be available.

Q – How shall we know that we have received all the trades (End of Day)?

No explicit message will be sent to indicate end of messages.

Q – What happens if I login late or miss receiving some trade in the drop copy channel?

During download request user needs to specify the time from where the messages download should start.

Q – Time from which login available to the system?

Details shall be clarified through a circular.

Q – Can I connect to the drop copy channel after close of market?

Details shall be clarified through a circular.

Q – Till when I can connect to the drop copy channel?

Details shall be clarified through a circular.