
Differences Between Trading & Market Data API 2.0 and API 1.0

Document Revision History

Revision History	Revision Status	Change Summaries	Author	Reviewer	Approver	Revision Date
V1.0	Initial Release					

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1. New Features in API 2.0

1.1 Standardized API Return Values

In API 1.0, the same return value could have different meanings depending on the API method. For example, a return value of -2 from the ReqAuthenticate method indicates a duplicate call, whereas a return value of -2 from the ReqOrderInsert method indicates exceeding in-transit transaction flow control. API 2.0 standardizes return values so that the same value always conveys the same meaning. Details are shown in the table below:

Return Value	Description
0	Success
-1	Not logged in
-2	Exceeded in-transit flow control
-3	Exceeded request flow control
-4	File not found or file read/write failure
-5	Already logged in or duplicate call
-6	Required field is empty
-7	Authentication enabled but failed
-8	Exceeded maximum number
-9	Not initialized
-10	Already initialized
-11	Local ID not incremented
-12	Not connected to the front-end
-13	indicates a member ID mismatch
-14	indicates a user ID mismatch

1.2 Initialization Status Validation

Certain interfaces can only be called during specific initialization phases (including before and after initialization). API 2.0 imposes restrictions on these interfaces as detailed in the table below:

Restriction	Method	Remarks
Pre-initialization only	Init	Returns error code -5 (duplicate call)
	RegisterFront	The listed methods can only be called before initialization; otherwise, error code -10 (already initialized) is returned
	RegisterNameServer	
	SubscribePrivateTopic	
	SubscribePublicTopic	
	SubscribeUserTopic	
	SetHeartbeatTimeout	
	SubscribeMarketDataTopic	
Post-initialization only	Release	The listed methods can only be called after initialization; otherwise, error code -9 (not initialized) is returned
	ReqUserLogin	
	ReqAuthenticate	

1.3 Login Status Validation

For certain interfaces, they can only be called during specific login phases (including before and after successful login). API 2.0 imposes restrictions on these interfaces as detailed in the table below:

Restriction	Method	Remarks
Before Successful Login	ReqAuthenticate	These methods can only be called before login; otherwise, error code -5 is returned (already logged in or duplicate call)
	ReqUserLogin	
After Successful Login	Other business requests except ReqAuthenticate and ReqUserLogin	These methods can only be called after login; otherwise, error code -1 is returned (not logged in)

1.4 Field Validation

For certain business requests, API 2.0 performs validation to ensure that specific fields are correctly assigned. If the validation fails, the API returns -6 (indicating that a mandatory field is empty). Definition of an empty string: a string containing only whitespace characters or no characters at all. Detailed as follows:

Request Name	Checked Field(s)	Validation Rule
ReqUserLogin	UserProductInfo	Cannot be an empty string
ReqOrderInsert	OrderLocalID	Cannot be an empty string
ReqOrderAction	OrderLocalID OrderSysID	At least one of the two fields must be non-empty
ReqQuoteInsert	QuoteLocalID	Cannot be an empty string
ReqQuoteAction	QuoteLocalID QuoteSysID	At least one of the two fields must be non-empty
ReqExecOrderInsert	ExecOrderLocalID	Cannot be an empty string
ReqExecOrderAction	ExecOrderLocalID ExecOrderSysID	At least one of the two fields must be non-empty
ReqAbandonExecOrderInsert	AbandonExecOrderLocalID	Cannot be an empty string
ReqAbandonExecOrderAction	AbandonExecOrderLocalID AbandonExecOrderSysID	At least one of the two fields must be non-empty
ReqQuoteDemand	QuoteDemandLocalID	Cannot be an empty string
ReqOptionSelfCloseUpdate	OptionSelfCloseLocalID	Cannot be an empty string
ReqOptionSelfCloseAction	OptionSelfCloseSysID OptionSelfCloseLocalID	At least one of the two fields must be non-empty

1.5 Local ID Increment

API 2.0 requires that non-empty local IDs must be incremented (continuity is not

required). Requests involving local IDs are listed in the table below:

Request Name	Field	Description
ReqOrderInsert	OrderLocalID	All requests listed in this table share a single sequence number.
ReqOrderAction	ActionLocalID	
ReqQuoteInsert	QuoteLocalID	
ReqQuoteAction	ActionLocalID	
ReqExecOrderInsert	ExecOrderLocalID	
ReqExecOrderAction	ActionLocalID	
ReqAbandonExecOrderInsert	AbandonExecOrderLocalID	
ReqAbandonExecOrderAction	ActionLocalID	
ReqOptionSelfCloseUpdate	OptionSelfCloseLocalID	
ReqOptionSelfCloseAction	ActionLocalID	

1.6 Additional Return Values for Interfaces

API 2.0 introduces additional return values for the relevant interfaces. Details are provided in the table below:

Interface Name	Return Value Type
Release	int
Init	
RegisterFront	
RegisterNameServer	
SubscribePrivateTopic	
SubscribePublicTopic	
SubscribeUserTopic	
SubscribeMarketDataTopic	
SetHeartbeatTimeout	

2. Changes in API 2.0 Interfaces

2.1 Changes in Trading API Interfaces

Change Type	Interface Feature	Interface Functions	Remarks
Deletion	Administrator Order	ReqAdminOrderInsert OnRspAdminOrderInert	
	Price Table Query	ReqQryMBLMarketData OnRspQryMBLMarketData	
	Registration Certificate	RegisterCertificateFile RegisterGMCertificateFile	
	Alias Return	OnRtnAliasDefine	
	Non-standard Combo Order	ReqCombOrderInsert OnRspCombOrderInsert ReqQryCombOrder OnRspQryCombOrder OnRtnCombOrder OnErrRtnCombOrderInsert OnRtnInsCombinationLeg OnRtnDelCombinationLeg	
	Information Request	ReqQryInformation OnRspQryInformation	
	Contract Deletion Return	OnRtnDelInstrument	
	Credit Limit Query	ReqQryCreditLimit OnRspQryCreditLimit	
	Encryption Algorithm Registration	RegisterCryptAlgorithm	
Modification	Front-End Address and Name Server Address Registration	RegisterFront RegisterNameServer	Parameter type changed from char* to const char*

2.2 Changes in Market Data API Interfaces

Change Type	Interface Feature	Interface Functions	Remarks
Addition	User Password Update Request	ReqUserPasswordUpdate OnRspUserPasswordUpdate	This feature is currently disabled
	Log Interface	OpenRequestLog OpenResponseLog	
Deletion	Registration Certificate	RegisterCertificateFile RegisterGMCertificateFile	
	Encryption Algorithm Registration	RegisterCryptAlgorithm	
Modification	Front-End Address and Name Server Address Registration	RegisterFront RegisterNameServer	Parameter type changed from char* to const char*

3. Differences Between API 2.0 and API 1.0

3.1 Con File

The API stores the the message sequence numbers of the trading day, the data center ID, and all received reliable data streams into the Con File, thereby maintaining the sequence numbers of retransmitted messages.

There are the following differences between API 2.0 and API 1.0 in managing reliable data streams:

1. Con File Storage Method: In API 2.0, each instance maintains only one Con File. Details are shown in the table below:

	API 1.0	API 2.0
Trading API	TraderApiresume.con File version, trading day, and data center ID	trade.con Trading day and data center ID Topic 1 and the received message sequence number for Topic 1 Topic N and the received message sequence number for Topic N
	Private.con Public.con User.con Communication ID and received message sequence number	
Market Data API	MduserApiresume.con File version, trading day, and data center ID	md.con Trading day and data center ID Topic 1 and the received message sequence number for Topic 1 Topic N and the received message sequence number for Topic N
	[Market Data Topic ID].con Communication ID and received message sequence number	

2. Whether reliable data stream information is recorded in the Con File, as detailed in the table below:

Subscription Flow Type	API 1.0	API 2.0
SubscirbePrivateTopic SubscirbeUserTopic SubscirbePublicTopic SubscirbeMarketDataTopic	Recorded	Recorded
ReqSubscribeTopic	Not Recorded	Recorded

3. Whether the Trading Day (TradingDay) and Data Center ID (DataCenterID) in the login request message use the corresponding values from the Con File, as detailed in the table below:

Subscription Flow Type	API 1.0	API 2.0
SubscirbePrivateTopic	Used	Used
SubscirbeUserTopic		
SubscirbePublicTopic		
SubscirbeMarketDataTopic		
ReqSubscribeTopic	Not Used	Used

3.2 Log

The differences between request log and response log in API 2.0 and API 1.0 are shown in the table below:

	API 1.0	API 2.0
Market Data API	Log functionality is not supported	Log functionality is supported
Request Log and Response Log Query	Querying of request logs and response logs is not supported	Querying of request logs and response logs is supported
Confidentiality	Login and terminal authentication requests and responses are not recorded	Login and terminal authentication requests and responses are recorded. The password field in login requests and the authentication token field in terminal authentication requests are intentionally left blank in the logs

Differences in log format between API 2.0 and API 1.0:

Request Message	
API 1.0	Date Time, Name, Request Result, [Domain Name, Request Parameter Name, Request Parameter Content]
API 2.0	Timestamp, Request Name, Request Parameter Name="RequestParameterContent"

Example of API 2.0 request message:

20250326083628275,ReqOrderInsert,OrderSysID="" ParticipantID="0001" ClientID="00010001" UserID="0001c1c" InstrumentID="ag1908" OrderPriceType="2" Direction="0"...

Response Message	
API 1.0	Date Time, Response Name, Response Code, Response Message, [Domain Name, Response Parameter Name, Response Parameter Content]
API 2.0	Timestamp, Response Name, Response Code, Response Message, Response Parameter Name="Response Parameter Content"

Example of API 2.0 response message:

20250326083628276,OnRspOrderInsert,0,Correct,OrderSysID="000000000001" ParticipantID="0001" ClientID="00010001" UserID="0001c1c" InstrumentID="ag1908" OrderPriceType="2" Direction="0"...

Return Message	
API 1.0	Date Time, Return Name, [Domain Name, Return Parameter Name, Return Parameter Content]
API 2.0	Timestamp, Return Name, Return Parameter Name="Return Parameter Content"

Example of API 2.0 return message:

20250326083628276,OnRtnOrder,TradingDay="" SettlementGroupGroup="" SettlementID="0" OrderSysID="000000000001" ParticipantID="0001" ClientID="00010001" UserID="0001c1c" InstrumentID="ag1908" OrderPriceType="2" Direction="0"...

3.3 Instance Release

Differences in API instance release are shown in the table below:

API 1.0	API 2.0
The Release Function releases the API instance	The Release function should be invoked first, followed by the Join function, to ensure the safe termination of the API instance.

3.4 Disconnection Reasons

API 2.0 provides more detailed categorization of disconnection reasons, as shown in the table below:

Error Code	API 1.0	API 2.0
0x1001	Network Read Failure	
0x1002	Network Write Failure	
0x2001	Heartbeat Timeout	
0x2002	——	Message Encryption Failure
0x2003	Received Invalid Message	Message Decryption Failure
0x2004	——	Unsubscribed Topic Message
0x2005	——	Message Sequence Discontinuity
0x2006	——	Illegal Message Length
0x2007	——	Message Conversion Error
0x2008	——	Login Failure (Front-End)

3.5 Library Names

	API 1.0		API 2.0	
	Windows	RHEL	Windows	RHEL/Kylin
Trading API	traderapi.dll traderapi.lib	libtraderapi.so	ftdtraderapi.dll ftdtraderapi.lib	libftdtraderapi.so
Market Data API	mduserapi.dll mduserapi.lib	libmduserapi.so	ftdmdapi.dll ftdmdapi.lib	libftdmdapi.so

3.6 Data Stream Subscription after Reconnection

After a disconnection, the API automatically subscribes to data streams upon login. The default subscription mode for data streams differs between API 2.0 and API 1.0.

	Subscription Interface	Initial Subscription Mode	Default Subscription Mode after
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Differences Between Trading & Market Data API 2.0 and API 1.0

			Reconnection	
			API 1.0	API 2.0
Trading API	SubscribePrivateTopic SubscribePublicTopic SubscribeUserTopic	Resend	Resend	Continue
		Continue	Continue	Continue
		Snapshot	Snapshot	Snapshot
	ReqSubscribeTopic	User-specified Sequence	Not Subscribed	Not Subscribed
Market Data API	SubscribeMarketDataTopic	Resend	Resend	Continue
		Continue	Continue	Continue
		Snapshot	Snapshot	Snapshot
	ReqSubscribeTopic	User-specified Sequence	Not Subscribed	Not Subscribed