

Interactive Brokers TWS API error codes reference

The TWS API uses a numeric error code system delivered through the `EWrapper.error()` callback. **Connection errors** span codes 500-530 (client-side) and 1100-2158 (server/data farm status), while **order errors** concentrate in the 100-449 and 10000+ ranges. Understanding these codes is essential for building robust trading applications that handle failures gracefully.

Client-side connection errors (500 range)

These errors originate from the API client and are **never sent by TWS**—they indicate local connectivity issues before a connection is established.

Code	Message	Cause	Resolution
501	Already Connected	Application called <code>eConnect()</code> while already connected	Check connection state before connecting; disconnect first if needed
502	Couldn't connect to TWS	TWS/Gateway not running, API disabled, wrong port, or firewall blocking	Enable "Enable ActiveX and Socket Clients" in TWS settings; verify port (7496 live TWS, 7497 paper TWS, 4001 live Gateway, 4002 paper Gateway); check firewall; add IP to Trusted IPs for remote connections
503	The TWS is out of date and must be upgraded	TWS/IB Gateway version incompatible with API	Upgrade TWS/Gateway to latest version (API 9.72+ requires TWS 952.x+)
504	Not connected	API request made without active connection	Establish connection before making requests; implement connection monitoring
505	Fatal Error: Unknown message id	Unknown message identifier received	Indicates API/TWS version mismatch; update to compatible versions
506	Unsupported version	API client version incompatible during handshake	Update either TWS/Gateway or API client
507	Bad message length	EOF exception while reading socket	Often caused by duplicate client ID, TWS locked, or TWS closed unexpectedly; implement reconnection logic
508	Bad message	Malformed or corrupted message	Protocol or version mismatch; verify compatibility
509	Exception caught while reading socket	Socket read exception occurred	TWS closed unexpectedly or network disconnection; implement proper exception handling
520	Failed to create socket	OS unable to create socket	Check system resources and network stack functionality
530	SSL specific error	SSL/TLS connection failure	Verify SSL certificates and TLS version compatibility

Error 502 is the most common connection failure. The full error message provides detailed troubleshooting steps including correct ports for each environment.

Server connection status codes (1100-1300 range)

These codes report connectivity between TWS/IB Gateway and Interactive Brokers servers—critical for understanding data availability.

Code	Message	Type	Action Required
1100	Connectivity between IB and the TWS has been lost	Warning	Wait for automatic reconnection; do NOT disconnect from TWS
1101	Connectivity restored - data lost	Warning	Resubscribe to all market data feeds; subscriptions were lost
1102	Connectivity restored - data maintained	Info	No action needed; subscriptions automatically recovered
1300	TWS socket port has been reset; reconnect on new port	Warning	Reconnect using the new port number specified in message

The **1100** → **1101/1102** sequence is normal during IB's nightly server reset (typically around 11:45 PM ET). Applications should handle this gracefully without attempting to reconnect—TWS automatically restores connectivity.

Data farm connectivity notifications (2100 range)

These messages indicate the status of connections to IB's market data and historical data servers. **Codes 2104, 2106, and 2158 are NOT errors**—they confirm successful connections.

Code	Message	Type	Notes
2103	A market data farm is disconnected	Warning	ISP connectivity issue outside nightly reset; wait for auto-reconnect
2104	Market data farm connection is OK	Info	Normal startup notification—connection successful
2105	A historical data farm is disconnected	Warning	Wait for automatic reconnection
2106	A historical data farm is connected	Info	Normal startup notification
2107	Historical data farm inactive but available on demand	Info	Normal dormant state; reactivates when needed
2108	Market data farm inactive but available on demand	Info	Safely ignore; normal behavior
2110	Connectivity between TWS and server is broken	Warning	Usually during nightly reset; will restore automatically
2158	Sec-def data farm connection is OK	Info	Security definition data server connected

Client ID and authentication errors

Code	Message	Cause	Resolution
326	Unable to connect as the client id is already in use	Another API application connected with same client ID	Use unique client ID (valid range: 0-32); ensure previous connections closed properly
327	Only API connections with clientId 0 can set auto bind TWS orders property	Using non-zero client ID with auto-bind feature	Use client ID 0 to receive order status for manually placed TWS orders
100	Max rate of messages per second has been exceeded	Exceeded 50 messages/second limit	Implement rate limiting; TWS may disconnect the client

Order submission and ID errors (100-149 range)

These errors occur when basic order parameters are invalid or order IDs conflict.

Code	Message	Cause	Resolution
103	Duplicate order ID	Order ID \leq previously used ID	Always use <code>nextValidId()</code> to get valid IDs; increment sequentially
104	Can't modify a filled order	Attempting to modify executed order	Check order status via <code>orderStatus()</code> before modification
105	Order being modified does not match original	Basic parameters changed during modification	Only modify price/quantity; don't change fundamental order parameters
106	Can't transmit order ID	Order transmission failure	Verify order parameters and connectivity
107	Cannot transmit incomplete order	Missing required fields	Ensure all required fields specified (symbol, action, quantity, order type)
133	Submit new order failed	General submission failure	Check order parameters and account status
134	Modify order failed	Modification failed	Verify order exists and is modifiable
135	Can't find order with ID	Cancel attempted on non-existent order	Verify order ID exists in system
136	This order cannot be cancelled	Order not in cancellable state	Order may be filled, expired, or already cancelled
140	Size value should be an integer	Invalid type for quantity	Use integer values for order quantity
141	Price value should be a double	Invalid type for price	Use double/float values for price fields
144	Order size does not match total share allocation	FA allocation mismatch	Adjust share allocation to match order size
145	Error in validating entry fields	Syntax error in request	Review and correct field syntax

Price validation errors

Price-related rejections are among the most common order failures.

Code	Message	Cause	Resolution
109	Price out of range defined by Percentage setting	Exceeds TWS precautionary settings	Adjust price or modify TWS Order Precautionary Settings
110	Price does not conform to minimum price variation	Too many decimal places for contract	Use <code>reqContractDetails()</code> to find minimum tick; round price accordingly
125	Buy price must be same as best asking price	Buy price constraint violation	Set buy price equal to best ask
126	Sell price must be same as best bidding price	Sell price constraint violation	Set sell price equal to best bid
163	Price would violate percentage constraint	Price exceeds % settings	Adjust price or modify TWS settings
382	Price violates number of ticks constraint	Price exceeds tick constraint	Adjust price or modify settings
403	Invalid stop price	Stop price validation failed	Adjust stop price for contract

Order type and time-in-force errors

Code	Message	Cause	Resolution
111	TIF and order type are incompatible	Invalid TIF/order type combination	Use TWS order tickets to find valid combinations
113	TIF should be DAY for MOC and LOC orders	Wrong TIF for market/limit-on-close	Set TIF to ' DAY ' for MOC/LOC orders
116	Order cannot be transmitted to a dead exchange	Invalid or inactive exchange	Verify exchange is valid and active
117	Block order size must be at least 50	Block order too small	Increase order size to minimum 50
152	Hidden order attribute may not be specified	Hidden orders not allowed	Remove Hidden attribute

Code	Message	Cause	Resolution
157	Order can be EITHER Iceberg or Discretionary	Conflicting attributes	Remove either Discretionary or DisplaySize
158	Must specify offset amount or percent offset value	TRAIL order missing offset	Add <code>auxPrice</code> or <code>percentOffset</code>
325	Discretionary orders not supported for this combination	Invalid exchange/order type	Use different exchange/order type combination
328	Trailing stop orders can be attached to limit or stop-limit orders only	Invalid parent order type	Attach trail stop to limit or stop-limit only
387	Unsupported order type for this exchange and security type	Order type/exchange incompatible	Check IB Order Types and Algos documentation

Primary order rejection codes (200-203)

These are the core rejection codes indicating IB servers refused the order.

Code	Message	Significance
200	No security definition found for the request	Contract doesn't exist or incorrect parameters; verify symbol, exchange, currency, expiry; use <code>reqContractDetails()</code>
201	Order rejected - Reason: [specific reason]	Primary rejection code —includes specific reason text
202	Order cancelled - Reason: [specific reason]	Active order cancelled by system; includes reason
203	Security not available or allowed for this account	Trading restriction on security; contact IB support

Common Error 201 rejection reasons include:

- **Large Size (LGSZ) Reject:** "Cannot accept Large Limit Orders exceeding X shares. Please submit smaller order or use algorithmic order (IBALGO)" `Interactive Brokers`
- **Order size must be multiple of lot size:** Size doesn't conform to contract specifications
- **Insufficient funds/margin:** Account lacks required margin for the trade

- **Position limit violation:** Exceeds allowed position limits for the account
- **Physical delivery restriction:** Order violates rules for derivatives with physical delivery

Common Error 202 cancellation reasons include:

- **Price Check Failure:** "Cannot accept order at limit price X because it is too far through the market. Please use limit price closer to current market price Y" [Interactive Brokers](#)

Size and quantity errors

Code	Message	Cause	Resolution
355	Order size does not conform to market rule	Size violates contract specifications	Check <code>minSize</code> and <code>sizeIncrement</code> in <code>ContractDetails</code>
383	Size violates size constraint in default settings	Exceeds precautionary settings	Adjust size or modify TWS settings
388	Order size smaller than minimum requirement	Order too small	Check minimum order size in contract details
434	Order size cannot be zero	Zero quantity order	Specify positive quantity
10020	Display size should be smaller than order size	$\text{DisplaySize} \geq \text{TotalQuantity}$	Make display size smaller than total quantity

Trading hours and market status errors

Code	Message	Cause	Resolution
154	Orders cannot be transmitted for a halted security	Security is halted	Wait for trading to resume
351	"Regular Trading Hours only" flag not valid	RTH flag incompatible with order	Remove <code>outsideRth</code> flag or change order parameters
411	"Outside Regular Trading Hours" flag not valid	Extended hours not available	Contract doesn't support extended hours trading

Code	Message	Cause	Resolution
412	Contract is not available for trading	Contract not tradeable	Verify contract status and trading calendar
392	Invalid order: contract expired	Order for expired contract	Use current/valid contract expiration

Account and permission errors

Code	Message	Cause	Resolution
10015	Trading is not allowed in the API	API trading disabled	Enable API trading in Account Management
426	None of the accounts have enough shares	Insufficient shares for short sale	Cannot short with cash account; verify position
435	You must specify an account	Account not specified	Provide account code for single-account function
436	You must specify an allocation	FA allocation missing	Specify account, group, or profile for Financial Advisor accounts

Algorithm order errors (400s and 439-449)

Code	Message	Cause	Resolution
400	Algo order error	General algorithm order error	Review <code>AlgoStrategy</code> and <code>AlgoParams</code>
439	Algorithm definition not found	Invalid AlgoStrategy specified	Use valid IB algorithm name
440	Algorithm cannot be modified	Algo order modification restricted	Cancel and replace the algo order
441	Algo attributes validation failed	Invalid AlgoParams	Check parameters against IB documentation
442	Specified algorithm not allowed for this order	Algorithm unavailable for contract/account	Use compatible algorithm

Code	Message	Cause	Resolution
443	Unknown algo attribute	Invalid AlgoParams field	Remove or correct unknown parameter

Fractional shares errors (10241-10252)

Code	Message	Resolution
10241	Order in monetary terms; modification not supported via API	Use desktop TWS to modify
10242	Fractional order cannot be modified via API	Use desktop TWS to modify
10243	Fractional order cannot be placed via API	Use desktop TWS for fractional orders
10245	Instrument does not support fractional shares	Use whole share quantities
10247	Only IB SmartRouting supports fractional shares	Route to SMART exchange
10248	Account doesn't have permission for fractional shares	Request fractional trading permission

Conditional and trigger errors

Code	Message	Cause	Resolution
146	Invalid trigger method	Invalid trigger for stop orders	Use valid trigger method (0-8)
147	Conditional contract info incomplete	Missing conditional order info	Complete conditional contract definition
361	Invalid trigger price	Trigger price validation failed	Specify valid trigger price
398	Contract cannot be used as condition trigger	Invalid condition trigger	Use valid contract for condition
402	Conditions not allowed for this contract	Conditional orders not supported	Remove conditions from order

VWAP order errors

Code	Message	Resolution
118	VWAP orders must be routed through VWAP exchange	Route to VWAP exchange
119	Only VWAP orders may be placed on VWAP exchange	Use order type 'VWAP' when routing to VWAP
120	Too late to place VWAP order for today	Wait for next trading day
129	VWAP must be submitted at least 3 minutes before start	Set start time at least 3 minutes in future
137	VWAP can only be cancelled up to 3 minutes before start	Cannot cancel within 3 minutes of start
167	VWAP order time must be in the future	Set future start time

Combo and bracket order errors

Code	Message	Cause	Resolution
312	Combo details are invalid	Invalid combination contract	Verify combo leg specifications
313	Combo details for leg invalid	Combo leg incorrectly defined	Check individual combo leg parameters
314	Security type 'BAG' requires combo leg details	BAG order missing combo legs	Add ComboLegs to contract definition
315	Stock combo legs restricted to SMART routing	Stock combo not SMART routed	Set exchange to ' SMART ' for stock combos
10006	Missing parent order	Parent order ID not found	Add 50ms delay before placing child orders; verify parent exists
429	Delta neutral orders only supported for combos	Delta neutral on non-combo	Use BAG security type for delta neutral

Best practices for error handling

Building robust TWS API applications requires proper error handling infrastructure. Always implement the `EWrapper.error()` callback to capture all errors, warnings, and informational messages. Monitor `orderStatus()` for status changes including "Cancelled" and use `nextValidId()` to ensure valid order IDs before placement.

Pre-submission validation prevents most order rejections: use `reqContractDetails()` to verify contracts before ordering, and consider the **WhatIf flag** to check margin impact. For bracket orders, add a **50ms delay** after parent order submission before placing child orders—this prevents error 10006.

Connection management should handle the 1100→1101/1102 sequence gracefully during IB's nightly reset without unnecessary reconnection attempts. Implement rate limiting below **50 messages per second** to avoid error 100 disconnections.

Conclusion

The TWS API error system distinguishes between client-side errors (500s), connection status notifications (1100s, 2100s), and order-specific rejections (100-449, 10000+). **Error 502** dominates connection troubleshooting and points to port/configuration issues, while **Error 201** serves as the primary order rejection code with specific reason text. Many 2100-range codes are informational—particularly 2104, 2106, and 2158 which confirm successful connections rather than problems. Applications should treat the 1100→1101/1102 sequence as normal maintenance behavior and implement appropriate reconnection logic only for true connection failures.