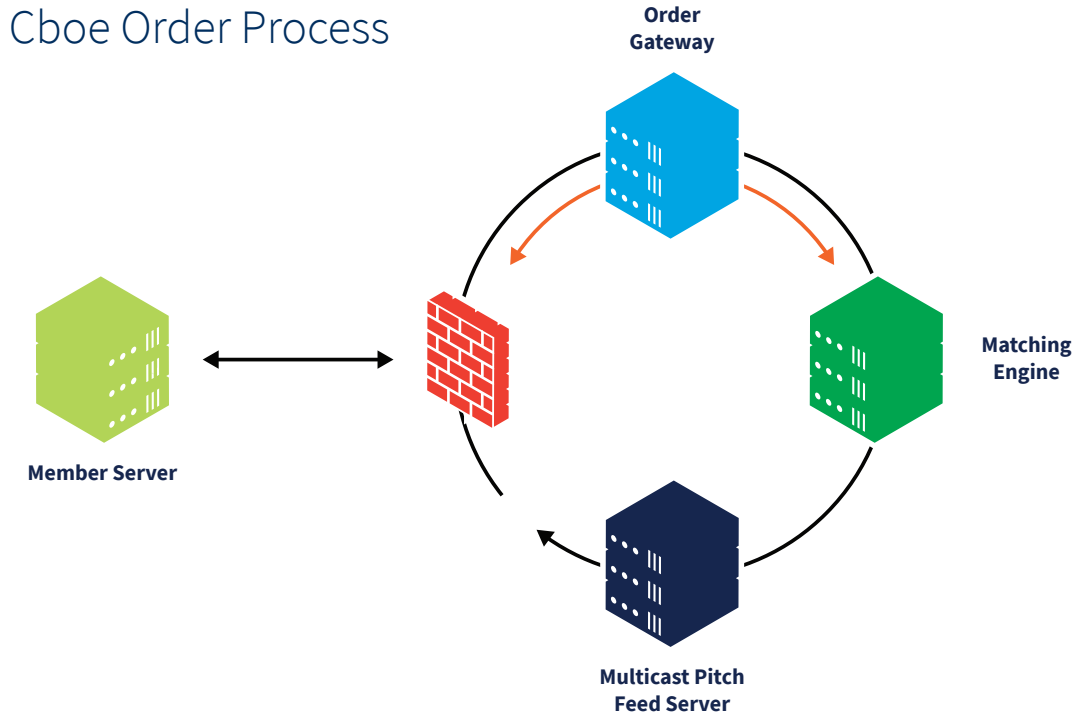


Cboe Real-Time Latency Monitoring is an innovative Web tool designed to provide customers with real-time latency statistics for each order entry port. The overall order latency is broken down to show customers detailed latency figures at a microsecond level for each section of the Cboe order process. All measurements start and end at the outside edge of the Cboe network (indicated by the red brick wall).



Latency Data

This detailed information—updated every minute—includes the order count, average minimum latency, average latency and standard deviation statistics. Statistics can be downloaded in CSV format.

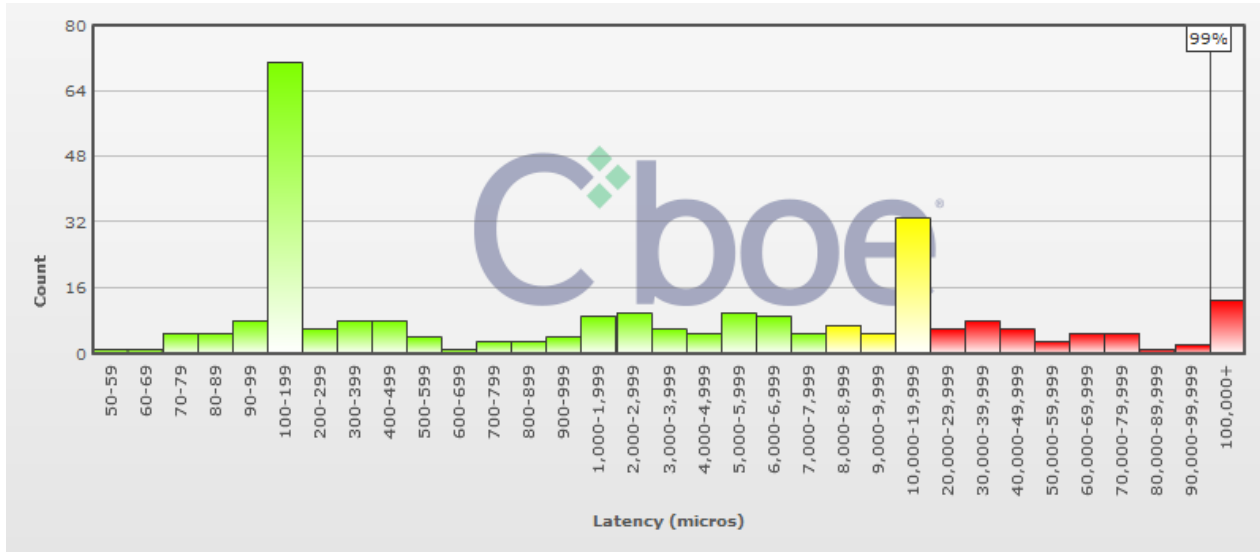
Latency Statistics * All latency numbers are in microseconds

U.S. BZX Equities		U.S. BYX Equities		U.S. EDGX Equities		U.S. EDGA Equities		U.S. BZX Options		U.S. EDGX Options		U.S. C2 Options		U.S. CFE Futures	
Port ID	IP Port	count	avg(min)	avg	stdev	count	avg(min)	avg	stdev	count	avg(min)	avg	stdev	TCP Ack from Member	
Direct Connection (52)															
0378		1,111M	50	69	25	210,778	42	55	11	213,272	59	76	26	30	
0379		775,059	49	69	29	138,715	41	54	14	140,605	59	76	30	29	
0380		910,753	49	69	33	151,070	41	55	30	153,777	59	77	42	29	
0400		210,949	47	65	15	209,536	32	47	12					96	
0402		414,607	44	63	15	405,585	32	45	15					28	

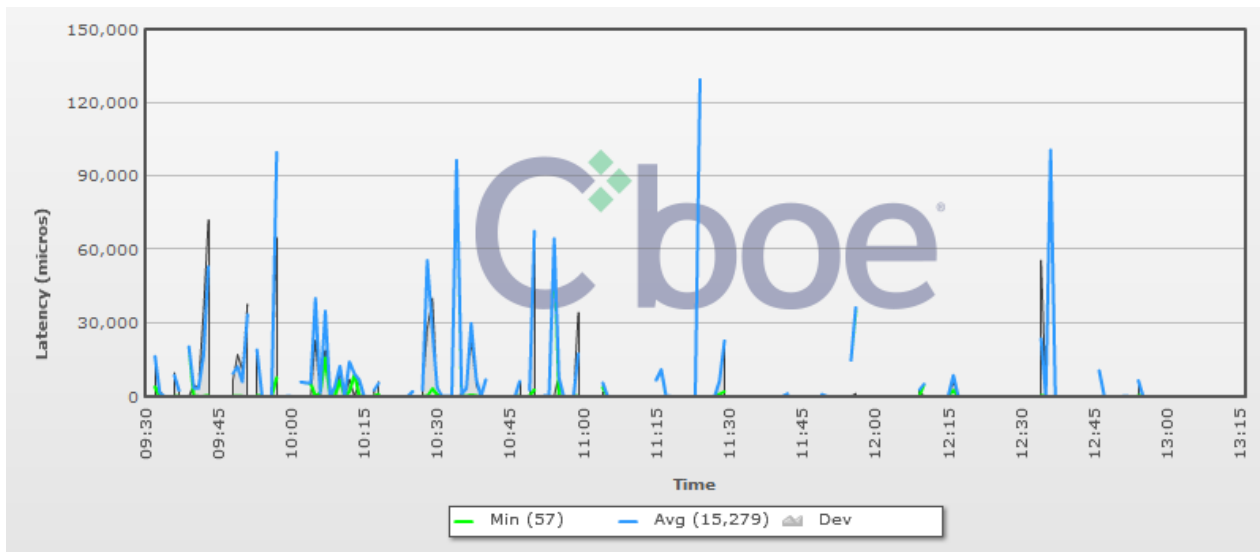
Overall latency statistics for the current day on the Cboe platforms are provided so customers can compare their order latency to the average order traded on the given Cboe platform. Definitions of these units of measurement can be found by clicking on the “About these stats” link seen in the image to the left

Histogram charts display the distribution of orders in time buckets so customers can see the time frames in which their order acknowledgements take place. Colored bars indicate where order latencies align with the weighted average latency on the given Cboe Exchange in a 30-minute snapshot.

	avg(min)	avg
Order to Ack	35	74
Cancel to Out	31	56
Order to Quote	42	80



Line charts provide data in time slices so customers know when they're hitting their minimum, maximum and average latency speeds throughout the trading day in a 30-minute snapshot.



Accessibility

Real-Time Latency Monitoring is a free service accessible through the Cboe Customer Web Portal. It is available for the Cboe U.S. Equities Exchanges, Cboe Futures Exchange, and three of our U.S. Options Exchanges — BZX Options, C2 Options and EDGX Options. Real-Time Latency Monitoring appears under the “Latency Stats” section of the Web Portal and permission to view requires a special privilege. Your firm’s Account Administrator may use the User Management tool to create new accounts or make privilege changes to existing Web Portal accounts. Please contact the Cboe Trade Desk, 913.815.7001 or tradedesk@cboe.com, with any questions.

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