

Cboe Global Markets, powered by Bats technology, excels during heavy load and has proven itself on the busiest days in the history of the U.S. equities market. This innovative and technology-leading market center provides the following latency numbers based on order latency and order to quote latency. Cboe offers 1 Gig and 10 Gig access, and latency data is shown for both interface speeds. The term “latency” for each process is defined below.

### Order Acknowledgment Latency

- the time it takes to accept, process, and acknowledge or fill a Member order
- the complete round trip from edge network device to BOE/FIX handler to matching engine and back
- measured from outside the Cboe edge network device
- sustained under heavy load
- measured during the entire day, including open and close.

Order Latency	Complete round-trip in microseconds*	
	Binary	FIX
Average	77.94	91.94
80% of orders within	83.94	93.94
99% of orders within	113.94	113.94
99.9% of orders within	213.94	213.94

### Order to Quote Latency

- the time it takes to accept, process, and deliver a visible Member order via Multicast PITCH
- measured from outside the Cboe edge network device
- sustained under heavy load
- measured during the entire day, including open and close

Order Latency	Complete round-trip in microseconds*	
	Binary	FIX
Average	81.94	92.94
80% of orders within	83.94	93.94
99% of orders within	113.94	113.94
99.9% of orders within	213.94	213.94

Technology professionals at Cboe constantly engineer the Cboe platforms to handle heavier and heavier loads while maintaining industry-leading low and sustained latency.

Other System Statistics		
Messages per second	Average : 25,403	Peak: 643,377
PITCH events per second	Average: 1,599	Peak: 57,612
Max volume to date (millions)	Matched: 449	Touched: 468

Cboe offers world-class system performance via FIX (the only ubiquitous financial protocol in the world) and BOE, which support all Cboe’s features unlike some of Cboe’s competitors.

\*Cboe adds 13.94 microseconds to all latency measurements to account for system design, including latency equalization between NY4 and NY5. Cboe BYX Equities Exchange data for the week of January 1 - January 5, 2018. Data and information is provided for informational purposes only. Data is based on resources Cboe considers trustworthy. However, due to constant upgrades and changes to its system, Cboe does not guarantee the accuracy or completeness of the data. Cboe shall not be liable for any errors in such data, or for any actions taken or not taken in reliance thereon.

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