

# The Exegy Ticker Plant Benchmark Performance

» **breakthrough processing speed**



» *“At Exegy, we’ve always prided ourselves on being conservative in citing performance data. So when a third party with the highest quality benchmark methodologies demonstrates that our ticker plant is even faster than we’ve claimed, has massive capacity to spare, and offers an extremely low total cost of ownership, well, it’s gratifying to say the least.”*

– Scott Parsons, Exegy’s Chief Scientist and Architect

## **Benchmark Performance Tests of the Exegy Ticker Plant**

Released in the early spring of 2007, the Exegy Ticker Plant was the first of its kind. A 3U appliance based on reconfigurable hardware and AMD Opteron processors, the ticker plant offered market data feed normalization and delivery with extremely low latency, high throughput, and outstanding advantages in total cost of ownership. Today, the Exegy Ticker Plant continues to lead the market as the first ticker plant independently benchmarked (by the Securities Technology Analysis Center) at 80 microseconds end-to-end latency, while processing 2 million exchange messages per second.

## **Independent Testing by STAC**

The Securities Technology Analysis Center (STAC) tested the Exegy Ticker Plant 1.2 in a variety of use cases to measure throughput and latency in real world scenarios, as well as under extreme load. (Testing was carried out during the spring of 2007.) In the tests, OPRA data was replayed from a dedicated computer and fed into the ticker plant to simulate a live data feed, while still maintaining control of message delivery rate. OPRA was chosen as a widely accepted market data feed with a high message rate.

With the OPRA data flowing, the Exegy Ticker Plant performed all of its default ticker plant functions, including exchange connectivity, line arbitration, normalization, caching, request management, inline analysis, and entitlement checking. Transaction updates were then distributed to clients via the Exegy Client API.

STAC and Exegy both define “end-to-end latency” as the time elapsed between a message hitting the incoming wire, processing it through the Exegy Ticker Plant appliance, and the API making that message available to the client application at the other end. In one benchmark test, STAC set the OPRA data replay rate at 2 million updates per second, and attached six clients which, combined, were subscribed to every OPRA exchange. For this test, the mean latency for all updates was measured at 80 microseconds, with 99 percent of the updates occurring in less than 150 microseconds.

STAC also attempted to measure the maximum ingress (throughput) for the ticker plant, but found that their test system wasn’t yet capable of reproducing the extreme data rates required to “max out” the appliance. While STAC’s final report states that “a single [Exegy] server can handle 2.4 times OPRA’s projected rate for January 2008,” they add that “our [STAC’s] approach to maximizing load on the box fell short of the Exegy Ticker Plant’s potential.”

It is worth noting that OPRA’s highest peak to date is 432,328 mps attained in March 2008. STAC’s verified throughput for the Exegy Ticker Plant — 3.4 million updates per second aggregate, across redundant lines — offers more than adequate headroom on one appliance for maximum data rate days well into the foreseeable future.

### **More in Less Space**

“What most people tend to do with software-only solutions is add more servers to their farm. So they increase capacity by essentially saying, ‘I have one box that can handle 100,000 messages per second,’” explains Scott Parsons, Exegy’s Chief Scientist and Architect.

“If they want to double their capacity, they’ll get two boxes and send half the messages to each box,” he continues. “It’s possible to scale like that, but the downside is that when you add boxes, it takes more space while increasing power usage and the need for cooling.”

With the Exegy Ticker Plant, Parsons adds, “We can get much higher throughput per box, so the need to split the message flow in two doesn’t occur.”

### **Lower Total Cost of Ownership**

Perhaps most impressive considering its high level of performance is that the Exegy Ticker Plant 1.2 with AMD processors and InfiniBand also has a very low total cost of ownership.

“In addition to its extremely low latency and high throughput,” says Peter Lankford, STAC Director, “the Exegy Ticker Plant was highly efficient with respect to cost drivers such as power consumption, an increasingly important factor for capital markets customers.”

Under extreme load, STAC found the ticker plant capable of handling 6,710,000 aggregate updates per second inbound plus outbound, while consuming only 670 Watts of power per second. At this load, the ticker plant performed 10,014 updates per second per watt, or 2,237,000 updates per second per rack unit.

### **About Exegy**

Exegy, Inc. provides the financial services industry extremely fast and flexible solutions to search, analyze and process massive amounts of market data. Exegy’s patented ultra-low latency market data systems use reconfigurable hardware and software to process data at record speeds, providing customers with the insight to make quicker decisions and the ability to act on them faster. Exegy’s market data systems process significantly more data faster and require less space and IT oversight, thereby reducing the cost of ownership. All Exegy products are very flexible, easily accommodating changes as organizational data requirements evolve.

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