

EXECUTIVE OVERVIEW

LATENCY CAPTURE, STORAGE AND ANALYSIS IN FINANCIAL MARKETS

In order to fix latency problems, you first need to know what and where they are.

This third report in our low-latency series examines the tools used to understand where latency arises. It highlights vendors that provide tools to analyze latency; financial services vendors, for which latency can be a differentiator; and traders, for which low latency can deliver more profit than low prices.

ICE | INFRASTRUCTURE COMPUTING FOR THE ENTERPRISE

4 FINDINGS

- Network TAPs are more appropriate than SPAN ports for measuring network performance in latency-sensitive situations. **PAGE 6**
- GPS is the only way to synchronize remote clocks if nanosecond resolution is required. **PAGE 9**
- Many latency-monitoring deployments to date are more focused on the monitoring of networks than messaging or transactions. **PAGE 12**
- Latency-analysis products are becoming much more sophisticated. **PAGE 18**

5 IMPLICATIONS

- Data compression can minimize the cost of storage required to support the capture of 10Gb network traffic. **PAGE 9**
- Vendors support a mix of variants of market data and messaging protocols – select carefully. **PAGE 9**
- There are too many vendors and different formats of latency data – is there scope for standardization? **PAGE 12**
- Latency-analysis vendors will continue to fill out their product lines with new development or partnerships. **PAGE 18**
- Complexity could well get out of hand – software must make analysis easy to understand. **PAGE 18**

1 BOTTOM LINE

- The goal for many suppliers and users is real-time, multihop, multiprotocol latency analysis. Many of the components are in place – but users driven by low latency have not kept pace with vendor capabilities. We expect that to change soon.

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SECTION 1:

Executive Summary

For the majority of traders, latency is not a major issue. If shares are being bought for a pension fund, it doesn't usually matter if they are bought now, in five minutes or even tomorrow. Indeed, there's a good chance that the price will improve if you wait. But some classes of market participants live or die by their latency. Computer-driven trading strategies rely as much on the latency of a trade as the price of the financial instruments being traded.

Low latency is important not only to traders and brokers, but also to market data vendors, messaging subsystems, trading platforms, colocation and proximity facilities, and execution venues. In today's ever-more competitive and financially constrained environment, latency is one of the important differentiating factors. And if a firm finds that its competitor regularly pulls the trigger before it does, then it's time to start dodging bullets.

To win the low-latency arms race, a firm must first understand its latency and how it accrues. Only then can decisions be made about which application should be optimized and whether messaging infrastructure needs to be accelerated. There is no point in reducing the latency of one component from 100 to 10 microseconds (10^{-6} seconds), if another component takes 10 milliseconds (10^{-3} seconds). This report examines such latency issues. It includes a number of case studies, and it maps out the vendors that provide tools that capture, store and analyze latency.

1.2 METHODOLOGY

To complete this detailed and comprehensive research report on latency monitoring, measurement, storage and analysis, The 451 Group conducted in-depth interviews with the main constituents and vendors in the industry. While these interviews produced valuable data, this report is also based on our regular conversations with end users. This research was supplemented by additional primary research, including attendance at a number of trade shows and industry events.

Reports such as this one represent a holistic perspective on key emerging markets in the enterprise IT space. These markets evolve quickly, though, so The 451 Group offers additional services that provide critical marketplace updates. These updated reports and perspectives are presented on a daily basis via the company's core intelligence service – the 451 Market Insight Service. Perspectives on strategic acquisitions and the liquidity environment for technology companies are updated regularly via the company's forward-looking M&A analysis service – 451 TechDealmaker – which is backed by the industry-leading 451 M&A KnowledgeBase.

The emerging-markets picture is further complemented from the end-user/customer perspective via a growing group of adoption research services – including the 451 Infrastructure Computing for the Enterprise (ICE) service and the 451 Commercial Adoption of Open Source (CAOS) Research Service. All of these 451 services, which are accessible via the Web, provide critical and timely analysis specifically focused on the business of enterprise IT innovation.

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