

Leading Fortune 500 Company Relies on cPacket's cBurst for Accurate, Real-Time Per-stream Millisecond Resolution Monitoring

Business Goals

- Improve profitability by reducing dropped market transactions
- Track lost transactions; identify culpability, minimize business friction
- Reduce CapEx by maximizing resource utilization and optimal allocation

cPacket's Benefits

- Identify exact flows that lost market transactions
- Connect flows to end-user sessions
- Proactively detect service degradation
- Accurately anticipate capacity issues to optimize resource allocation
- Reduce MTTR with complete network visibility

Business Challenge

A network monitoring infrastructure that provides accurate, real-time data is important for any organization looking to maximize ROI. But when financial organizations are involved, achieving this outcome becomes even more critical. With the widespread adoption of computerized trading, an estimated 60% to 70% of daily volume on the NYSE, for example, is comprised of electronic trading. A glitch in the network, such as a burst or a microburst can cause packet loss which results in delayed and/or lost market transactions. This can have serious financial and legal repercussions for all involved. Financially, customer retention is at stake, and the possibility of losing one customer such as an institutional investor can seriously impact revenue. So, when a Fortune 500 company was experiencing dropped market transactions because of increased network congestion and higher latency, there was an immediate need to resolve the issue.

While the client had an architecture in place to ensure low latency trading and faster speeds, their existing monitoring solution was not equipped to handle the ever-increasing network traffic volumes. To overcome degraded monitoring performance, the client turned to cPacket's cBurst to provide the network engineers the tools they needed to ensure real-time monitoring and at speeds up to 100Gbps.

The Customer

As a Fortune 500 company, and pioneer in its industry offering one of the first electronic trading platforms and clearing services for various markets around the world, having direct access to low latency market data is key to their trading success. Furthermore, the number of trading locations around the world and continuous data feed transmission meant that too much time and effort was required to utilize existing tools to monitor hundreds of network links rather than implementing a scalable infrastructure that would provide reliable data for business operations.

To remain competitive under real-world trading conditions and reduce the number of lost transactions, the network engineers needed a real-time monitoring solution and predictive indicator that would allow them to identify unseen microbursts and packet drops at millisecond resolution. In an industry like finance, accuracy and speed are critical, and the need to anticipate and proactively provision additional resources before spurious events escalate into a deluge of missing data can't be ignored.

Why cBurst?

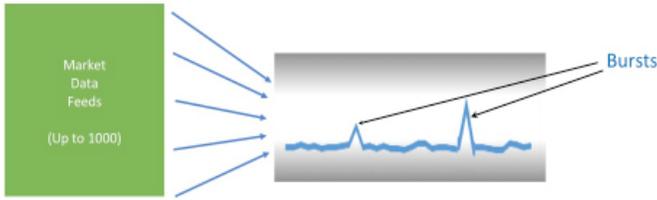
The customer turned to cPacket's cBurst, a feature available on its cVu/Cx traffic monitoring devices at data rates from 1G to 100G, to proactively monitor market data feed for spikes and/or microbursts in their network.

cBurst takes network traffic directly from the wire through passive optical taps and measures, in hardware, traffic utilization of user specified profiles that include IP endpoints, VLAN tags, QoS bits and other L2-L4 parameters. Unlike measurement methods that rely on proxies such as buffer utilization, cBurst will measure for each profile, the network behavior at millisecond resolution. Moreover, it does this in real time for up to one thousand feeds per link regardless of network traffic speed or packet mix. The difference between cPacket's cBurst and traditional technologies is rather than simply detecting that a link is spiking or saturated, cBurst provides the profile or combination of profiles that make up the bursts. Ultimately, this identification allows for reallocation of network traffic to links with more capacity (again, as measured with hardware accuracy by cBurst) and eliminates the trial and error that ensues when only the aggregate traffic behavior is known. In sum, cBurst will identify the specific flows eliminating any guesswork involved in the process.

After implementing cBurst, the customer was able to immediately detect unexplained packet drops, troubleshoot network issues on-demand, and perform in real-time at line rate speeds up to 100Gbps.

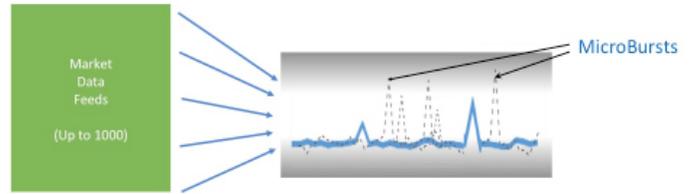
Network engineers needed to deploy a solution that would improve multicast allocation and drastically reduce network congestion and latency issues. By implementing cBurst, network engineers were able to move traffic flows between ports before they caused packet drops. Furthermore, by utilizing cBurst as a predictive behavior tool, they were able to carefully monitor any increase in network traffic and rebalance this traffic in anticipation of increased queues.

Second-level Accuracy can identify few bursts



But it hides the severity of micro-bursts!

cBurst: Millisecond Accuracy identifies these severe microbursts



Improved Analytics for better decision making



Figure 1: Dashboard showing cBurst metrics

Moreover, cBurst’s programmatic API allows for easy access to the data in order to incorporate other forecasting, visualization, and analytics tools seen in Figure 1. With cBurst’s always-on monitoring and accurate measurements at the wire, the customer had access to quality data that enabled them to perform accurate analyses and confidently make strategic business decisions.

Benefits

With the benefits provided by cPacket’s cBurst solution, the customer can now monitor the appropriate granularity and troubleshoot any utilization events on a per-stream basis. The ability to identify the exact feed causing the problem provides actionable insights not available through traditional monitoring methods such as packet capture or inaccurate proxies such as switch buffer utilization. Furthermore, network engineers can carefully observe the appropriate granularity and troubleshoot any high utilization events which could cause packet loss. In addition, cBurst can consolidate real time analysis of the network, on a single dashboard, enabling the network engineers to proactively detect problems before the end user is impacted.



Despite the volatility of market trading and extreme fluctuations in traffic levels, when cBurst was deployed, the network engineers were able to optimize link allocation, reduce time-to-resolution, and reduce overall operational and capital costs.

The combined benefits of cBurst empowered the customer with the real-time visibility and smart data they needed to remain competitive in today's complex and highly fluid trading environment.

Unlock The Advantages With cPacket

cPacket's solutions offer unprecedented performance, deeper levels of insight, and real-time analytics to solve the most complex network challenges faced in market trading. cPacket's advanced distributed intelligence enables network operators to proactively detect problems before they negatively impact end-users using predictive analytics. cPacket provides a unique algorithmic chip that delivers complete packet inspection immediately at the wire for accurate results. cPacket's cBurst allows network operators and engineers the ability to monitor and receive alerts on financial trading behavior in real-time to obtain valuable data needed to make accurate business decisions.

cPacket Networks is committed to achieving quality standards in network performance monitoring and is trusted by network operators worldwide.

Contact Us

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