



STAC[®] Summit

June 11, 2013

Doors open: 9:30am

Meeting starts: 10:00am

Conference Center at UBS Tower

2nd Floor, Michigan Ballroom

One North Wacker Drive

Chicago, IL

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AGENDA

BIG WORKLOADS

STAC Update – Big Workloads [\[slides\]](#)

- *Peter Lankford, Founder & Director, STAC*

Peter will review progress on Council activities related to Big Workloads, including:

- The STAC Backtesting SIG and proposed benchmarks for back-testing architectures
- An update from the STAC Big Data SIG
- A multi-dimensional trip through new STAC-A2 results.

Technical Brief - Managing Risk in Real-Time: Opportunities and Challenges

- *Paul Constantino, Founder and Managing Partner, Fultech Consulting* [\[slides\]](#)

As a former trader and now as a consultant to trading organizations, Paul has developed considerable depth on the most pressing problems in risk management today. In this talk, he will assess risk management pain points confronting the Chicago trading community and discuss how key technology trends provide the opportunity to turn risk management into a profit center by enabling real-time solutions.

Technical Brief - Lessons from options risk computation

- *Zhang Zhang, Technical Consulting Engineer, Intel* [\[slides\]](#)

Thousands of programmers throughout the financial markets write numerically intensive code for x86 platforms, such as derivatives risk and pricing applications. Over the past several months, Intel has been optimizing code that implements the STAC-A2 Benchmark suite, a parallel approach to computing options risk. The improvements between the initial round of optimization and today's version of the code have been dramatic. In this talk, Intel engineers will show some of the key changes that accelerated this code, as well as the diagnostic approach that helped them spot the opportunities.

Innovation Roundup – Round 1

"Maximizing the Value of your Multi-Year and Multi-Source Data Sets" [slides]	<i>Glenn Wright, Systems Architect, DataDirect Networks</i>
"Tightly coupled storage and computing" [slides]	<i>Joe Landman, Founder/CEO, Scalable Informatics</i>
"Kx Update" [slides]	<i>Simon Garland, Chief Strategist, Kx Systems</i>
"Moving Data Faster" [slides]	<i>Kurt Rago, Sr. Systems Engineer, Mellanox</i>

Point of view - Driving Business Value with NoSQL Technology

- *Edouard Servan-Schreiber, Director of Solutions Architecture, 10gen (the MongoDB company)* [\[slides\]](#)

In 10gen's way of thinking, relational databases are still valuable but are limited because they were designed around application requirements that pre-dated OOP, agile, cloud, and big data. 10gen contends that the market is making a mainstream shift to newer approaches that enable rapid change and scale while driving down TCO. Using specific financial-services cases as evidence, Edouard will argue that it is possible to drive big business value with a document database built for modern application requirements.

Networking Luncheon

Panel Discussion - Improving Operational Intelligence

- *Vinod Kutty, Senior Director, CME*
- *Raja Mukerji, President and Co-founder, ExtraHop* [\[slides\]](#)
- *Rony Kay, CEO, cPacket* [\[slides\]](#)
- *Anoop Kartha, Product Manager, Gigamon* [\[slides\]](#)

The past two decades have seen an extraordinary build-out of distributed systems in trading organizations. Countless servers, networks, and applications are now critical to trading in nearly every market. But have our operational management systems kept up? Can we heuristically tune system performance, mitigate operational and security risks, and leverage operational data for business advantage? Regulatory and audit scrutiny are inspiring a new generation of internal technologists and vendors to bring new capabilities to trading operations. What strategies for capture, pre-processing, correlation, aggregation, and storage will take us from vanilla "monitoring" to "telemetry" and "visibility"? A panel of experts will offer their views.

FAST WORKLOADS

STAC Update – Fast Workloads [\[slides\]](#)

- *Peter Lankford, Founder & Director, STAC*

STAC will review progress on Council activities related to Fast Workloads, including hot-off-the-presses benchmark results and what the STAC Network I/O SIG has been up to with RDMA and Linux versions.

Panel Discussion - Directions in exchange technology

- *Craig Mohan, Managing Director Co-Location and Data Center Services, CME Group*
- *Saro Jahani, Chief Information Officer, Direct Edge*
- *Ian Jack, Global Head of SFTI Infrastructure, NYSE*
- *Rodney Burt, Director of Infrastructure, BATS Global Markets Inc. (BATS)*

The exchange landscape continues to be a dynamic place. Exchanges are both driving and responding to changes in market structure, regulation, technology, and competition among high- and low-frequency trading firms. What technical implications will these forces have on the exchanges and their members? In the short term and long term, what should member firms be thinking about with respect to location, connectivity, technology, and services?

Innovation Roundup – Round 2

"Redline Trading Solutions - Intelligent Trading. Faster" [slides]	<i>Lee Fisher, VP of Marketing, Redline Trading Solutions</i>
"Enabling Java in Latency Sensitive Applications" [slides]	<i>Gil Tene, CTO, Azul Systems</i>
"Where next for Latency Monitoring" [slides]	<i>Henry Young, CEO, TS-Associates</i>
"TIBCO Software Bringing Messaging into the Network" [slides]	<i>William McLane, Director Product Architecture, Messaging, TIBCO Software</i>

Coffee Break

Technical Brief - Using hardware to transform how applications use networks.

- Martin Porter, VP Software Development, Solarflare Communications [\[slides\]](#)

At previous STAC Summits, Solarflare have presented their point of view on the future of sockets in financial applications. This includes the inevitable expansion of hardware acceleration up the stack into functionality that is traditionally in the application domain. In this talk, Solarflare will provide preliminary data to support these views.

Innovation Roundup – Round 3

"Nexus 3000 – High Performance, Low Latency, Open" [slides]	Lucien Avramov, Technical Marketing Engineer, Cisco Systems
"Event based trading" [slides]	Nikolaj Hermann, CTO, Fiberblaze
"Light: The Ultimate Low-Latency Interconnect" [slides]	Jay Brandon, Vice-President, Lightfleet Corporation

Technical Brief – Low-latency in the example of STAC-N

- Troy Leedberg, Director of Technical Sales, Chelsio [\[slides\]](#)

Chelsio will explore latency optimizations for applications using the latest 10G and 40G networks. The context of the talk will be STAC-N, the benchmark suite for latency-sensitive network I/O that is under the direction of the STAC Network I/O SIG. Chelsio will also discuss the recent contributions that they have made to the STAC-N test suite.

Cocktail Reception

Speaker Biographies



Rodney Burt, Director Of Infrastructure, BATS Global Markets, Inc. (BATS). Rodney is the Vice President of infrastructure at BATS Exchange, a division of BATS Global Markets – the third largest stock market operator in the world. He has been an integral member of the technology team at BATS since joining the company in January 2008. While at BATS, he has played a leading role in the system's infrastructure that has made BATS a technology leader in the exchange industry. Prior to joining BATS, he held various systems and network management roles at regional banks. For the majority of his career, he has been involved in architecting, building and maintaining state-of-the-art data centers and technology infrastructures.



wife and three children.

Paul Constantino, Founder and Managing Partner, Fultech Consulting. Paul is the Founder and Managing Partner of Fultech Consulting, a capital markets advisory services company. He is a former arbitrage and derivatives trader and has developed trading algorithms in the fixed income space. Paul also led the development of eBondUSA.com, a fixed income ECN, Reg ATS and Broker Dealer. Over the course of his consulting career, Paul has developed high-frequency trading, order management, prime brokerage and risk solutions for numerous global capital markets clients and recently released a risk prototype using new technologies to enable real-time calculation of portfolio exposure and other risk measurements. He received his bachelor's from Duke University and MBA from the University of Notre Dame Mendoza School of Business. Paul lives in Hinsdale IL with his



development of the colocation and liquidity center connectivity solutions throughout the Americas, Europe and Asia not only in support of the existing NYSE Euronext members and customers but by seeking new opportunities to connect non-NYSE market centers and their members. Ian has a background in financial telecommunications, having previously held positions at BT Radianz, Colt and Logica.

Ian Jack, Global Head of SFTI Infrastructure, NYSE Technologies. Ian is the Global Head of SFTI Infrastructure at NYSE Technologies, the commercial technology business of NYSE Euronext. Based in New York, Ian is responsible for the global SFTI business, focusing on the growth of the SFTI infrastructure footprint and associated community content across multiple asset classes and geographies. The SFTI business unit has two core functions, providing low-latency market access for exchange members and also connecting customers to colocation, value added services and content applications. Ian has spent the last 5 years extensively developing the Secure Financial Transaction Infrastructure (SFTI ®) business in Europe and Asia. Most recently he has focused on enhancing the infrastructure offering with innovative low latency technologies and rollout of new radio wave services from Basildon and Mahwah Liquidity Centers. Ian's responsibilities also include



recognizing "the industry's most innovative technology leaders." Prior to Direct Edge, Saro served as Chief Information Officer at the National Stock Exchange; Global Head of Infrastructure, Operations and Facilities at Townsend Analytics; Executive Vice President of IT Operations at SunGard; and held various IT positions at CAP Gemini, Swedish Telecom, and Crosfield Electronics. He holds a Master's of Science degree in Electrical Engineering from the University of Uppsala (Sweden).

Saro Jahani, Chief Information Officer, Direct Edge. Saro joined Direct Edge in April 2011. He is responsible for driving technological innovation and reinforcing the systemic integrity of the firm's information technology. Saro implemented the Direct Edge Latency and Stability Roadmap which leverages an Information Technology Infrastructure Library (ITIL). He also established the Extended Architectural Committee, bringing together the expertise of Hewlett Packard, Microsoft, Informatica/29 West, Intel and Cisco to develop effective software solutions that meet the risk tolerance specifications of an exchange. In 2012, Saro was named to the Institutional Investor Trading Technology 30 ranking of the "leading system architects and innovators who keep markets humming, accurately and dependably," and the 2012 Wall Street & Technology Gold Book



Anoop Kartha, Product Manager, Gigamon. Anoop is a Product Manager responsible for advanced software products at Gigamon. He focuses on products designed to provide intelligent visibility on complex networks so that organizations can better analyze, secure, and monitor those networks in the age of Big Data. Prior to joining Gigamon, Anoop was a product line manager for the Security Business Unit at Juniper. He has worked in the networking and IT industry for 10 years. He holds a Masters Degree in Electrical Engineering from the University of Southern California and a Bachelor of Engineering Degree from the University of Mumbai.



Dr. Rony Kay, CEO, cPacket Networks. Rony combines unique expertise in high performance hardware-software design and algorithms. Rony founded cPacket Networks and is the chief architect of the company's hardware and software technology. Prior to this, Rony worked for Intel's Enterprise Platform Group, where he managed engineering teams working on multicore high-end server processors. Previously, he spent five years with IBM where he was a research fellow and a manager of cutting edge software and hardware development; he brought several innovations from inception, through conceptual design and product development, to execution of successful customer deployments. Earlier he held positions in R&D, operations management, and IT optimization consulting. Rony is the author of multiple technical papers and eight patents. He earned his Ph.D. in Computer & Electrical Engineering from Carnegie Mellon University.



Vinod Kutty, Senior Director, CME Group. Vinod is a key architect of the server platform technology that handles electronic trading and clearing for CME Group. His responsibilities include leading Distributed Computing/Open Systems Research and Development activities as well as internal Linux Support. Performance, scalability, reliability, openness and cost effectiveness are constant challenges in this environment. He works closely with various application development teams to cater to their needs and optimize applications for the underlying platform. He also drives performance and functionality requirements with Linux and server technology vendors and has served on various vendor customer advisory boards to align their roadmaps with user needs. Vinod is active in the Linux community via the Linux Foundation and is also an active member of Webmonsters.



Peter Lankford, Founder & Director, Securities Technology Analysis Center. Peter has overseen STAC since its birth in 2006. Before that, Peter was SVP of Information Management Solutions at Reuters, where he led the \$240M market data systems business. Peter's team led Reuters into the business of low-latency direct feeds and catalyzed the widespread adoption of Linux on Wall Street by making RMDS available on that platform. Prior to Reuters, Peter held management positions at Citibank, First Chicago Corp., and operating-system maker IGC. Peter has an MBA, Masters in International Relations, and Bachelors in Chemistry from the University of Chicago.



Troy Leedberg, Director of Technical Sales, Chelsio.



Craig Mohan, Managing Director Co-Location and Data Center Services, CME Group. Craig has served as Managing Director, Co-Location and Data Center Services of CME Group since May 2010. He is responsible for the strategic development, management and overall execution of the company's co-location and data center hosting business, including sales, product development and client services. Prior to joining CME Group, Mohan most recently served as Director, Global Infrastructure at Citadel Investment Group, where he was responsible for managing the firm's networking, technical architecture and global operations. His background also includes technology and operations management positions with ShopperTrak RCT, Accenture and Blue Meteor Inc. He holds a bachelor's degree in electrical engineering, with honors, from the University of Illinois at Urbana-Champaign.



Raja Mukerji, President and Co-founder, ExtraHop. Raja is the President and co-founder of ExtraHop Networks, where he is responsible for Customer Services, Systems Engineering, and Solutions Architecture. Raja ensures customer success, leveraging his background in the financial-services industry. Raja co-founded ExtraHop after a seven-year tenure at F5 Networks where he was a Senior Software Architect and co-inventor of the TMOS platform. He was one of the lead developers behind the BIG-IP v9 product and the major-accounts liaison for critical issues within Product Development. Prior to F5, Raja worked as a Technology Architect at Strong Capital Management.



Martin Porter, Vice President, Software Development, Solarflare Communications. Martin is responsible for all software, firmware and customer support activities at Solarflare. He joined the company through its merger with Level 5 Networks where he served as Software Director for three years. Martin spent the previous five years in the same role at Conexant where he managed the software development group for ADSL silicon, leading to shipments of over 13 million units. Previous roles include lead software architect of the iconic SADiE Digital Audio Workstation. He holds a first class degree in mathematics from Nottingham University and a master's with distinction from York University.



Edouard Servan-Schreiber, Director of Solutions Architecture, 10gen As Director for Solution Architecture, Edouard advises customers on how to make MongoDB make their business simpler, faster, and better. Previously, Edouard was director for cross-channel analytics at Teradata, leading projects in advanced analytics and predictive modeling with customers in all heavily data-driven industries such as finance, telco, retail, and high tech manufacturing. Edouard's specialty is helping customers extract business value from their data through the effective use of technology and analytics. He began practicing artificial intelligence and statistical learning models at Carnegie Mellon University for his bachelor's degree, before going to UC Berkeley for his PhD in Computer Science.



Zhang Zhang, Technical Consulting Engineer, Intel. Zhang is a Technical Consulting Engineer in the Developer Products Division within the Software and Services Group. He provides technical support for Intel® Math Kernel Library (Intel® MKL). He focuses on enabling customers to adopt Intel® MKL and helping them to get the performance advantages of the library. Zhang came from a background of high performance computing and parallel programming tools design and implementation. Before joining Intel, Zhang worked for Cadence Design Systems and AOL, where he developed and optimized distributed computing frameworks for large-scale engineering applications and big data analytics. Zhang holds a Ph.D. in Computer Science from Michigan Technological University.
