



# STAC<sup>®</sup> Summit

**June 17, 2013**

Doors open: 9:30am

Meeting starts: 10:00am

**Grand Hyatt New York**

Manhattan Ballroom

Park Avenue at Grand Central Station

New York, NY

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## *Gold Sponsors:*



# AGENDA

## BIG WORKLOADS

### **STAC Update: Big Workloads** [\[slides/video\]](#)

- *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, Managing Partner, Fultech Consulting* [\[slides/video\]](#)

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 Technical Briefing, Paul will assess risk management pain points confronting the 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* [\[slides/video\]](#)

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 Greeks. 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**

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| "Kx Update" <a href="#">[slides/video]</a>                | <i>Simon Garland, Chief Strategist, Kx Systems</i>               |
| "An intro to InterSystems" <a href="#">[slides/video]</a> | <i>Dave Kaaret, Financial Services Sr Engineer, InterSystems</i> |

### **Hadoop trajectories in financial services** [\[video\]](#)

- *Tomer Shiran, VP Product Management, MapR Technologies*
- *Tony Hamilton, Marketing Manager for Big Data and Analytics, Intel*
- *Mark Bloemeke, Senior Analytics Software Architect, DataDirect Networks*
- *Nick Werstiuk, Product Line Executive, IBM*

If what we hear at the [STAC Big Data SIG](#) is any indication, Hadoop is becoming important to more and more financial institutions. Meanwhile, the Hadoop ecosystem is expanding, with software vendors delivering new capabilities and hardware providers moving up the stack. Our panel of Hadoop leaders will help us navigate several questions: What kinds of uses make Hadoop important? What are people learning as they deploy it? What can financial firms learn from industries farther along the Hadoop curve? What are the key developments in the Hadoop ecosystem that will have the greatest implications for financial services companies?

## Networking Luncheon

### Innovation Roundup – Round 2

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| "Enterprise Flash Architectures for Performance Acceleration at an optimized cost" <a href="#">[slides/video]</a> | <i>Rob Benoit, SE Director for Major Accounts, NetApp</i>                        |
| "Tightly coupled storage and computing" <a href="#">[slides/video]</a>  | <i>Joe Landman, Founder and CEO, Scalable Informatics</i>                        |
| "Maximizing the Value of your Multi-Year and Multi-Source Data Sets" <a href="#">[slides/video]</a>               | <i>Bob Gaines, Director, Eastern US Sales, HPC &amp; LS, DataDirect Networks</i> |
| "Moving Data Faster" <a href="#">[slides/video]</a>   | <i>Asaf Wachtel, Director, Global FSI, Mellanox Technologies</i>                 |

### Point of view: Driving business value with NoSQL technology

- *Matt Kalan, Senior Solutions Architect, 10gen (the MongoDB company) [\[slides/video\]](#)*

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, Matt will argue that it is possible to drive big business value with a document database built for modern application requirements.

### Innovation Roundup – Round 3

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| "Where next for Latency Monitoring" <a href="#">[slides/video]</a>                         | <i>Henry Young, CEO, TS Associates</i>  |
| "Preemptive Latency Management: Enabling Automatic Actions" <a href="#">[slides/video]</a> | <i>Tony Pettipiece, Global Head of Sales and Marketing, Cape City Command</i> |
| "Data Capture Story" <a href="#">[slides/video]</a>  | <i>Alex Kramnik, Senior Systems Engineer, DRW Technologies</i>                |

### Panel discussion: The new world of operational intelligence [\[video\]](#)

- *Nikhil Singhvi, Director, Trading Technologies, Credit Suisse*
- *Bruce Peikon, Director of Special Trading, Barclays*
- *Eric Powers, VP of High-Performance Network Architecture, Morgan Stanley*
- *Raymond Russell, CTO, Corvil [\[slides/video\]](#)*
- *Mike Valladao, Sr. Director, Product Line Management, Gigamon [\[slides/video\]](#)*

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** [\[slides/video\]](#)

- *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.

## **Innovation Roundup – Round 4**

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| "Enabling Java in Latency Sensitive Applications" <a href="#">[slides/video]</a>         | <i>Gil Tene , CTO, Azul Systems</i>                                      |
| "Redline Trading Solutions - Intelligent Trading. Faster" <a href="#">[slides/video]</a> | <i>Al Maillet, VP of Sales, Redline Trading Solutions</i>                |
| "TIBCO Software Bringing Messaging into the Network" <a href="#">[slides/video]</a>      | <i>John Page, Global Director Messaging, TIBCO Software</i>              |
| "Achieving sub-100 Nanosecond Messaging Latency" <a href="#">[slides/video]</a>          | <i>Matt Meinel , VP, Sales Strategy, Financial Services, Informatica</i> |

## **Coffee Break**

## **Technical Brief: Using hardware to transform how applications use networks**

- *Steve Pope, CTO, Solarflare Communications* [\[slides/video\]](#)

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 5**

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| "Nexus 3000 – High Performance, Low Latency, Open" <a href="#">[slides/video]</a> | <i>Rich Grayson, Technical Solutions Architect, Cisco Systems</i> |
| "Event based trading" <a href="#">[slides/video]</a>                              | <i>Nikolaj Hermann, CTO, Fiberblaze</i>                           |

## **Technical Brief: Tuning systems to take advantage of FPGA**

- *Olivier Baetz, COO, NovaSparks* [\[slides/video\]](#)

A number of firms today use FPGA-based market data feed handlers. A recent [STAC Report](#) quantified the latency of one such solution from NovaSparks. But applications that consume market data from FPGA systems are usually written in software, and software-based systems require tuning to minimize latency. NovaSparks will offer several tips on diagnosing and tuning systems to minimize latency.

### ***Technical Brief: Low latency in the example of STAC-N***

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

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.

### ***Networking Reception***

## Speaker Biographies

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**Olivier Baetz, COO, NovaSparks.** Olivier joined NovaSparks in April 2011, bringing over ten years of experience selling and implementing low latency technology solutions for the financial industry. In 2000, Olivier was part of the original team at Radianz, the first global Extranet for the financial industry. At Radianz, Olivier successfully designed the solution for the original “proof of concept” customer which established the value of the Radianz community model. He also ran the North American Sales Engineering team for five years and was instrumental in the creation of the Radianz ULTRA service which provides ultra-low latency exchange connectivity to high-frequency trading firms. In 2009 and 2010, Olivier built and led the global technical convergence project team to integrate the Radianz platform into the global BT Network. Olivier started his career in telecoms, designing and selling managed network solutions for large multinational firms. Olivier holds a MS in

Telecom Engineering from ENST Paris and an MBA from Wharton with a major in Finance. When he is not working, Olivier enjoys sailing, surfing, skiing and all good wines from around the world.

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**Mark Bloemeke, Senior Analytics Software Architect, DataDirect Networks.** Mark has worked both on designing analytic platforms and infrastructure and on applying those same to real world problems in industries like Retail, Cellular Telephone and Insurance. Before joining DDN he was a co-founder at LogicBlox which built a cloud-based analytics platform for optimization, forecasting, and business scenario modeling. He joined DDN 1 year ago to work on applying DDN's industry leading HPC technology to the big data analytics problems that are emerging in every industry.

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**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

wife and three children.

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**Tony Hamilton, Marketing Manager for Big Data and Analytics, Intel.** Tony is one of Intel's leading evangelists for data base evolution and solution architecture as it pertains to in-memory computing. He has a passion for all things digital and in the last few years has been working with leading and emergent solution providers in the Big Data and Analytical Domain. Tony views this recent focus and interest around Big Data and Analytics as important to Business and Society as the Invention of the Internet and will share some of his perspective and consideration around technical metrics, planning and strategies to allow the attendees to embarking on a successful approach to embracing the era of Analytical solutions. Tony is also the current Board Member for the International Institute for Analytics. IIA is a leading industry body that promotes education, guidance

and understanding around the Analytical and Big Data Conversation. Tony resides in Austin Texas and has been an Intel employee for 17 years.

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**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 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).



**Matt Kalan, Senior FS Solutions Architect, 10gen.** Matt is a Senior FS Solutions Architect at 10gen based in New York, with extensive experience helping more than 200 customers in financial services and other industries solve business problems with technology. Before 10gen, Matt grew Progress Software's Apama Algorithmic Trading and Complex Event Processing (CEP) Platform business in North America and later sold broader operational intelligence solutions to FS firms. He previously worked for Caplin Systems selling solutions to stream real-time market data over the web to FX and FI portals, and for Sapien providing consulting services to Global 2000 clients.



**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.**



**Bruce Peikon, Director of Special Trading, Barclays.** Bruce currently has global responsibility for Barclays' HFT infrastructure and market data. Prior to Barclays, Bruce held senior technology positions in HFT infrastructure and networks at Deutsche Bank and Morgan Stanley. In addition to low-latency trading, Bruce has a broad range of experience across multiple industries (military/aerospace, utilities, insurance) and multiple technologies (mainframes, distributed systems, high availability computing, optical & microwave, CAD/CAM, manufacturing/engineering systems). He has extensive experience in systems automation and monitoring. Bruce has a BS in Computer Science and an MS in Computer Science and Mathematics from the New York Institute of Technology.



**Eric Powers, VP of High-Performance Network Architecture, Morgan Stanley.** Eric has over 18 years of product development experience in the financial services industry. At Morgan Stanley, Eric has developed a wealth of experience in precision timing, network monitoring and instrumentation. Eric is primarily focused on all internal trading organizations at Morgan Stanley, but he has a secondary focus on the global TELCO organization. Eric has a history of advising venture capital firms, leading industry publications and other organizations.



**Steve Pope, Co-Founder and Chief Technology Officer, Solarflare.** Steve is CTO for controllers at Solarflare. Previously he co-founded Level 5 Networks and prior to that was a post-doctorate researcher in the field of high-speed networks and operating systems at Olivetti Research Labs, which later became AT&T Laboratories Cambridge. Steve holds a PhD in Computer Science from the University of Cambridge.



**Raymond Russell CTO & Co-Founder, Corvil.** Raymond is one of Corvil's founders and co-inventor of its core technology. Since joining Corvil in 2000 as Chief Technology Officer, Raymond has played an instrumental role in building a strong product suite around the core Corvil technology. As CTO, Raymond is focused on driving continued advancement and fulfillment of Corvil's innovations with a focus on applications and infrastructure in capital markets.



**Tomer Shiran, VP Product Management, MapR Technologies.** Tomer heads the product management team at MapR and is responsible for product strategy, roadmap and requirements. Prior to MapR, Tomer held numerous product management and engineering roles at Microsoft, most recently as the product manager for Microsoft Internet Security & Acceleration Server (now Microsoft Forefront). He is the founder of two websites that have served tens of millions of users, and received coverage in prestigious publications such as The New York Times, USA Today and The Times of London. Tomer is also the author of a 900-page programming book. He holds an MS in Computer Engineering from Carnegie Mellon University and a BS in Computer Science from Technion - Israel Institute of Technology.



**Nikhil Singhvi, Director – Trading Technologies, Credit Suisse.** Nikhil manages Client Connectivity and Data Analytics functions across the investment bank. Prior to CS, Nikhil held management positions at Citibank and UBS in New York, London and Tokyo. Nikhil is a CFA charter-holder and holds a Bachelor's Degree in Computer Science.



**Mike Valladao, Sr. Director, Product Line Management, Gigamon.** Mike is Senior Director of Product Management at Gigamon, responsible for all hardware platforms including GigaVUE visibility nodes and gateway TAP product lines. Mike is a hands-on manager with more than two decades building strategic technology solutions with specialties in visibility, application analysis, security, and debugging techniques. He is a patent holder and has held senior leadership positions at Network General, Compuware, and EDS.



**Nick Werstiuk, Product Line Executive, IBM Platform Computing.** Nick is the Product Line Executive for the Platform Computing products within IBM Systems and Technology Group. He and his Product Management team are responsible for the product vision, strategy, direction and roadmap across the portfolio of Platform's distributed computing software. Since joining Platform Computing in 2004 he has worked on a wide range of new product, business development and strategic initiatives, identifying growth opportunities and strategies for Platform Computing. Nick's career in enterprise infrastructure technology spans more than 20 years, having spent the first 10 years of his career in telecom network infrastructure, holding a range of Product Management, Marketing, and Engineering positions at Bell Canada. Over the last 12 years, Nick has helped to drive the product commercialization and the customer adoption of new products at several software companies including Platform Computing, divine Inc, eAssist Global Solutions, and Delano Technology Corp. Nick graduated, with Honours, from the University of Toronto, with a Bachelor of Applied Science in Electrical Engineering.

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**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.

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