



STAC[®] Summit

June 24, 2013
Doors open: 9:30am
Meeting starts: 10:00am

Hyatt Andaz Hotel
Great Eastern Room
40 Liverpool Street
London

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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
- An update from the STAC Big Data SIG
- A multi-dimensional trip through new STAC-A2 results.

Hadoop trajectories in financial services

- *Bhasker Allene, Solutions Architect, Intel*
- *Steve Jenkins, Vice President, EMEA, MapR Technologies*
- *Mark Bloemeke, Senior Analytics Software Architect, DataDirect Networks*

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?

Innovation Roundup – Round 1

“Tightly coupled storage and computing” [slides]	<i>Ken Poyd, Sales and Business Development, Scalable Informatics</i>
“Maximizing the Value of your Multi-Year and Multi-Source Data Sets” [slides]	<i>Glenn Wright, Systems Architect, DataDirect Networks</i>
“Moving Data Faster” [slides]	<i>Richard Hastie, Director UK Financial Services, Mellanox Technologies</i>

Point of view - Driving Business Value with NoSQL Technology [\[slides\]](#)

- *Daniel Roberts, Senior Solutions Architect, 10gen (the MongoDB company)*

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

Technical Brief: HPC trends in finance [\[slides\]](#)

- *Andre Nedelcoux, Partner, Excelian*

At the end of 2012, Excelian organised for the second year in a row a study across the investment bank industry in order to determine the state of play in high performance computing, mainly to understand trends around GPGPU adoption, Cloud computing adoption, market share for compute and data grid middleware, as well as maturity in terms of management of these environments. Andre will discuss the key findings.

Networking Luncheon

Technical Brief: Lessons from options risk computation [\[slides\]](#)

- *Stephen Blair-Chappell, Technical Consulting Engineer, Intel*

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, Stephen 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 2

“The Joy of GPUs - Performance without the Programming Cost” [\[slides\]](#)

Hicham Lahlou, CEO, Xcelerit

Panel: Perspectives on heterogeneous computing

- *Philip Beasley-Harling, Independent*
- *Hicham Lahlou, CEO, Xcelerit*

Phil Beasley-Harling has an obsession with developing fast code, whether that means quickly analyzing enormous amounts of data or executing trades in microseconds. That obsession with speed has helped firms like JP Morgan Chase, Marshall Wace, and Bank of America Merrill Lynch take advantage of algorithmic trading opportunities in both equities and FX. Similarly, Hicham Lahlou has built a business (Xcelerit) providing software tools to help firms accelerate compute-intensive tasks like credit and counterparty risk management. In their adventures, Phil and Hicham have gained valuable experience with CPUs, GPUs/many-core, and FPGA. In a free-flowing discussion driven mostly by audience Q&A, we'll ask them for their viewpoints on the evolving roles of those different processors, best practices in coding for them, and a range of other issues important for the development of high-speed programs.

FAST WORKLOADS

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

- *Peter Lankford, Founder & Director, STAC*

STAC will review progress on Council activities related to Fast Workloads such as market data processing, end-to-end trading infrastructure, and direct network I/O.

Panel: Improving Operational Intelligence

- *Rupert Brown, IB CTO Lead Architect, UBS (moderator)*
- *Dr. Rony Kay, CEO, cPacket Networks* [\[slides\]](#)
- *Raja Mukerji, President and Co-founder, ExtraHop* [\[slides\]](#)
- *Fergal Toomey, Chief Scientist & Co-Founder, Corvil* [\[slides\]](#)
- *Trevor Dearing, EMEA Marketing Director, Gigamon* [\[slides\]](#)

The past two decades have seen an extraordinary build-out of distributed systems in capital markets organizations. Thousands of servers, networks, and applications are now critical to trading in every sphere, from low-latency liquid markets to more complex OTC domains. But have our operational management systems kept up? Do we have clear strategies to heuristically tune system performance, mitigate operational and security risks, and optimize business processes for maximum advantage? If so, how well are we executing on those strategies? Regulatory and audit scrutiny seem to be inspiring a new generation of internal technologists and vendors to bring new capabilities to the operational side of trading. How do we evolve our capabilities from vanilla "monitoring" to "telemetry" and "visibility"? A panel of experts will debate some of the key points.

Coffee Break

Panel: Swaps: The next big opportunity?

- Paul Marks, EMEA Head Electronic Execution Listed Derivative Products, Citi
- Don McClumpha, Managing Director, iSwap
- Piers Evans, Director, SEF Product Management, MarkitSERV
- James Davies, COO, GMEX
- Steve Grob, Director of Group Strategy, Fidessa (moderator)

Technologists like those in the STAC community have transformed the equities, futures, options, and FX markets over the last decade. Could the \$600 trillion swaps market be next? By driving this over-the-counter market to electronic trading through central counterparties, Dodd-Frank is forcing the creation in just months of an entirely new market ecosystem--the sort of thing that has taken longer to evolve for other instruments. Huge questions abound: What market models should swaps execution facilities (SEFs) adopt? What role should credit hubs play? How will the buy-side manage margin requirements in a fragmented market? Will proprietary trading shops flood into this new market and drive similar trends to equities, futures, and FX? Are futures on swaps the future of swaps? What are the technical implications of these potential outcomes? Who will supply the technology to connect this ecosystem and manage its risk? What technical disciplines will firms need to draw on? Our cross-functional panel will provide their views.

Innovation Roundup – Round 3

"Where next for Latency Monitoring" [slides]	<i>Henry Young, CEO, TS Associates</i>
"TIBCO Software Bringing Messaging into the Network" [slides]	<i>Mark Darbyshire, CTO for EMEA, TIBCO Software</i>
"Nexus 3000 - High Performance, Low Latency, Open" [slides]	<i>Jag Tamvada, Product Manager, Cisco Systems</i>
"Uses of Integrated FPGA/Software Latency Measurement" [slides]	<i>Gareth Morris, Technology Development Director, NovaSparks</i>

Using hardware to transform how applications use networks. [slides]

- David Riddoch, Chief Architect, Solarflare

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.

Low latency in the example of STAC-N. [slides]

- Troy Leedberg, Director of Technical Sales, Chelsio

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 – Feature Sessions



Bhasker Allene, Solution Architect, Intel.



Philip Beasley-Harling, Independent. Philip has worked in finance technology variously between the buy- and sell-sides of the industry over the last decade, leading and innovating on market data analytics and high-frequency, low-latency quantitative and algorithmic trading systems in kdb+. His technical focus is on the high-performance processing of multi-terabyte data sets for back-testing and research, and parallel computation on multi-cored clusters, GPUs and FPGAs for low latency microsecond execution. Most recently he was Head of Algorithmic Solutions IT for Global Rates and Currencies and Bank of America Merrill Lynch and previously he was Head of Market Data at Marshall Wace Asset Management and the lead developer for JP Morgan Chase's equities market data and analytics platform.



Stephen Blair-Chappell, Technical Consulting Engineer, Intel. Stephen has worked in the Intel Compiler Lab for the last 14 years. He is a regular speaker at technical conferences in Europe and the US. Prior to joining Intel, Stephen worked as a lecturer at Birmingham City University, specializing in Software Engineering and Embedded Systems. As an academic he developed and delivered CPU architecture programming courses for a number of silicon and software manufacturers. Stephen is author of the book "Parallel Programming with Intel Parallel Studio XE" (ISBN 9780470891650, Wiley, April 2012). Outside work, Stephen enjoys playing the pipe organ, and is an accomplished musical instrument restorer.



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.



Rupert Brown, IB CTO Lead Architect, UBS.



James Davies, COO, GMEX. James has spent 15 years working in exchange listed derivatives and OTC markets, with a background that previously included working at Westminster Clearing, which was one of the first electronic locals' houses in London. He was integral to the growth of two of the most respected ISVs of their times (Eccoware & most recently Trayport, the GFI subsidiary). James has a diverse and deep skill set ranging from mathematical and analytical skills developed with a physics degree, through to technology skills, marketing, sales, project management, client management and support processes gleaned through building out business at ISVs. Coupling this with good OTC knowledge from three years running a product management team at eSpeed/BGC, the then Cantor Fitzgerald subsidiary, makes James an unusual derivative markets professional, having deep knowledge of both exchange listed products, and OTC market development.



Trevor Dearing, EMEA Marketing Director, Gigamon. Trevor has worked in the networking and IT industry for over 30 years. Initially as an engineer where he worked in R&D and supporting IBM Mainframe networks in the City of London during big bang. Subsequently he spent time in R&D and support working on some of the first local area network installations. Latterly he has held several senior positions in consultancy and marketing and is currently working on developing the market for Gigamon.



Piers Evans, Director, SEF Product Management, MarkitSERV. Since joining MarkitSERV in 2005 (formerly SwapsWire), Piers has worked to build out the firm's capabilities in OTC workflows such as real-time clearing, novations and regulatory reporting for a variety of asset classes including equity, credit and interest rate derivatives. Recently, he has been focused on pre-trade clearing certainty and MarkitSERV's roll out of a pre-trade credit limit checking service that will assist market participants meet their obligations under new regulation such as the Dodd Frank Act and EMIR/Mifid 2. Prior to working at MarkitSERV, Piers worked for UBS in London and Milan. He has a BA Hons in Modern Languages (French, German and Spanish) from Durham University and an MSc in Computer Science from Birkbeck College, University of London.



Steve Grob, Director of Group Strategy, Fidessa. Steve is responsible for Fidessa's strategic development globally, including the development of new geographic markets, asset classes and strategic partnerships as well as driving new industry initiatives within Fidessa's community of over 25,000 buy-side and sell-side users. Steve heads up the firm's strategy in response to the changing trading landscape, regulation and technology. He also played a significant part in bringing Fidessa's market analysis tools (the Fidessa Fragmentation Index[®] (FFI), the Fragulator[®] and the Tradalyzer[™]). Steve has written a number of white papers, including a series on the impact of multi-market structures on the Australian equity trading landscape, an exploration of Japan's evolving financial markets, an insight into the forces reshaping the

derivatives industry and an examination of the response of global firms to the profound changes the world's financial markets have undergone in recent years. On joining Fidessa in 2004 Steve led the development of the company's multi-asset trading capabilities. He was previously founder and CEO of specialist derivatives software house Future Dynamics.



Steve Jenkins, Vice President, EMEA, MapR Technologies. Steve has over 30 years of experience in EMEA operations. As Vice President EMEA for MapR, Steve is responsible for developing and driving MapR's EMEA initiatives, while building and maintaining relationships with key decision makers in the region. Steve has built a strong reputation for creating new EMEA organizations and enhancing existing ones. Prior to joining MapR, Steve was VP EMEA for Q1 Labs, a provider of security information and event management (SIEM) and log management products. Prior to that role, he was VP EMEA for Isilon Systems, a leader in clustered storage systems and software for file-based data. Steve essentially started the EMEA organization within Isilon, and established offices in Germany, the United Kingdom, and Paris. Earlier in his career, Steve spearheaded EMEA operations for F5 Networks and led enterprise

sales for Bay Networks and Nortel Networks.



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.



Hicham Lahlou, CEO, Xcelerit. After a brief career as a software developer in the European Space Center, French Guiana, Hicham joined CTVR, the Telecommunications Research Center in Dublin, Ireland. A common theme with the various projects Hicham has worked on was the need to process large amounts of data through complex algorithms in the quickest possible time. The ability to understand compute-intensive processing from an end-user perspective served as an excellent basis to create innovative technology solutions targeted at domain specialists in financial markets and other industries. Hicham Co-Founded Xcelerit in 2010. Hicham graduated from INSA Lyon, France in 2006 with an MSc in Electrical Engineering.



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.



Paul Marks, Director, Citi Futures and OTC Clearing. Citi hired Paul in 2011 to join their rapidly growing Exchange Traded Derivatives and OTC Clearing business to help develop their flagship Citi Futures and Options Execution (CFOX) platform. As well as product, program and vendor management Paul has taken a leading role in regulatory affairs and is a founding member and ex-Chair of the FOA's eTrading/Risk working group. Paul helped lead this group in their efforts to publish the recent FOA Guidance on Systems and Controls for Electronic Trading, which looks at the responsibilities of the Buy Side, Sell Side, Venues and Vendors to minimise the risks posed by electronic trading. Subsequent to the publication of this guidance Paul has recently joined FIX Protocol Ltd's Risk Management Working Group and Global Derivatives

Subcommittee with the aim of trying to garner support for the development of an industry standard protocol for managing risk limits and triggering kill switches in the listed derivatives space. Prior to this, Paul was with J.P. Morgan's Futures & Options business and moved from technology into the front-office, looking after eTrading Product for EMEA. Before JPMC, Paul was at UBS covering trade floor support for Cash Equities and Listed Derivatives as well as supporting the respective exchange market connectivity and trading platforms. Paul graduated in 2000 with a bachelors' degree in Mechanical Engineering.



Don McClumpha, Managing Director, iSwap. Don runs i-Swap, ICAP's voice/hybrid electronic trading platform for OTC interest rate derivatives. i-Swap, launched in September 2010 was the first interdealer platform to offer full electronic trading of Euro interest rate swaps (IRS), creating a single pool of liquidity in a range of Euro IRS instruments out to 30 years. Today around a third of all ICAP's 1 – 30 year Euro IRS trades are executed electronically through the platform. USD and GBP currencies have recently been launched. During his 25-year career with ICAP, the world's leading interdealer broker, Don has also been Deputy CEO and COO of ICAP's Asian operations; Managing Director of ICAP Electronic Broking; and Managing Director of ICAP's UK Government Bond Broking Business. Don has thirty years'

markets experience, starting his career in shipping and soft commodities before moving to broking UK Government Bonds. Don has been involved in the electronic broking and hybrid space for the last ten years. He is based in London.



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.



Andre Nedelcoux, Partner, Excelian. André is a Partner within the Technical Consulting Practice primarily responsible for Technology Advisory and High Performance Computing. André has 12 years' experience working as Senior Technical Architect and Project / Programme manager at numerous Financial Services organisations including Credit Suisse, Unicredit, LCH Clearnet, SG-CIB and Credit Agricole. Before working at Excelian, Andre was the Partner in charge of the Business Unit focused on Financial Services at OCTO Technology. Through this and his other roles, he has gained an in-depth knowledge of cutting-edge and niche technologies, with a focus on High Performance Computing, Risk Management and more generally performance and scalability in the context of large scale web applications as well as

computing. Andre is also an advocate of Agile Development methodologies which he has been implementing for clients since 2006.



David Riddoch, Chief Architect, Solarflare. David co-founded Level 5 Networks in July 2002 and joined Solarflare when it merged with Level 5 in April 2006. David is the architect and lead developer of Solarflare's market leading OpenOnload network acceleration middleware. David's mission is to deliver absolutely the best possible performance without asking users to abandon the standard network stack: Sockets, TCP, UDP and Ethernet.



Daniel Roberts, Senior Solutions Architect, 10gen. Daniel leads the Solutions Architecture team for Financial Services at 10gen (the MongoDB company) supporting Europe, Middle East and Africa. Prior to 10gen, Daniel worked at Oracle for 11 years in a number of different positions focusing mainly around Oracle's middleware technologies and strategy. His prior roles have included consulting, product management, business development and pre-sales. Daniel has also worked for Novell, ICL and for a period as a freelance contractor. He has a degree in Computer Science from Nottingham Trent University in the UK.



Fergal Toomey, Chief Scientist & Co-Founder, Corvil. Fergal is one of Corvil's founders and a specialist in bandwidth and QoS measurement technologies. He has been involved in the design and development of innovative traffic measurement and analysis algorithms for the past 15 years. As Chief Scientist at Corvil, Fergal is intensively involved in developing key product innovations to manage system performance for the financial enterprise, and applying these innovations to help customers realize the full capabilities of the product.
