

SC16, November – Salt Lake City/Utah IBM Single Client Briefings

Please note: All sessions are 60 minutes in length.

SC01- IBM HPC Solutions and Directions - NDA Briefing

Abstract: HPC sites worldwide are responding to new opportunities and shifts in our industry: the growth of accelerated computing, new architectures, ever-increasing computational needs, and the data deluge. Join our session to learn about the comprehensive IBM HPC portfolio, including solution updates, strategy and directions. Some of the key areas to be highlighted include: IBM POWER™ processors, IBM Power Systems Compute Nodes, IBM's HPC Software stack, IBM Spectrum Computing software portfolio, IBM Spectrum Scale (formerly GPFS) and Elastic Storage Server, POWER8 with NVLink, and our differentiated approach to acceleration enabled through OpenPOWER ecosystem innovation. We will also discuss the end to end storage portfolio, including HPSS, Tape System and Flash Technologies and how these can be integrated into a complete HPC solution.

Feel free to receive elements of the entire session or come ready with the topics where you request the most emphasis.

Attendees will need to bring signed non-disclosure agreements with them or sign non-disclosure agreements at the door.

Classification: NDA-Briefing

Owner: Henry Brandt

Speakers: Henry Brandt, Nick Werstiuk, David Coutts, Theodore Hoover, Piyush Chaudhary, Bill McMillian

SC02- The Research & Development Collaborative Agreement on Data Centric Cognitive Computing – A Model for Government and Industry Collaboration Driving Economic Impact - NDA Briefing

Abstract: On the June 4, 2015 the UK Government announced an IBM and the 'Science & Technology Facilities Council' (STFC) five year Research & Development Collaboration Agreement (RDCA) aimed at helping to accelerate the capabilities of STFC's Hartree Centre in providing competitive advantage for UK Industry and comparative advantage for UK research institutions. As part of the RDCA, IBM Research has established a presence at the STFC's Daresbury Laboratory. This session will detail how IBM Research is working closely with STFC, the UK Government's Department for Business, Energy and Industrial Strategy and UK companies to exploit data centric cognitive computing at the STFC Hartree Centre on the Daresbury campus in the North West of England and deliver economic impact to the UK. The Centre is developing new algorithms and approaches to exploit data centric cognitive computing working with UK companies. There has been significant interest by other organizations in the approach IBM Research undertook with STFC and the UK Government to create the major collaborative effort at the Hartree Centre. An overview of lessons learned in this effort will be given as well as some of the early results already obtained.

Attendees will need to bring signed non-disclosure agreements with them or sign non-disclosure agreements at the door.

Owner: Kirk E. Jordan

Speakers: Kirk E. Jordan

SC03- IBM Deep Learning Offerings – NDA Briefing

Abstract: Deep Learning is one of the fastest segments of computational science, and it is a place where data centric computing and accelerated processing intersect. This briefing will explore IBM's roadmap for Deep Learning applications, including current reference architectures as well as trends and directions.

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Classification: NDA-Briefing

Owner: Scott Soutter

Speakers: Scott Soutter

SC04- IBM Reference Architecture for Genomics: Accelerating discoveries in genomic research and medicine

Abstract: This session will deliver an update on the latest release of IBM® Spectrum Symphony (formerly IBM Platform Symphony), IBM Spectrum Computing's industry-leading enterprise-class management software for running a wide variety of distributed applications and big data analytics on a scalable, shared grid. This is an NDA discussion that includes a conversation around future product direction.

Owner: Jeff Hong

Speakers: Frank Lee, Janis Landry-Lane, Jane Yu, Kathy Tzeng, Denise Ruffner

SC05- IBM Software Defined Infrastructure: End-to-end software solutions – NDA Briefing

Abstract: In this session we will discuss how the IBM Software Defined Infrastructure portfolio can enable your organization to deliver IT services in the most efficient way possible, optimizing resource utilization to accelerate time to results and reduce costs. It is the foundation for a fully integrated software defined environment, optimizing your compute, storage and networking infrastructure so you can quickly adapt to changing business requirements. The comprehensive portfolio, which includes the IBM Spectrum Computing and IBM Spectrum Storage product families, enable organizations to dynamically manage workloads and data, transforming a static IT infrastructure into a shared workload, resource and data-aware environment.

Attendees will need to bring signed non-disclosure agreements with them or sign non-disclosure agreements at the door.

Classification: NDA-Briefing

Owner: Louise Westoby

Speakers: Nick Werstiuk, Bernie Spang, Bill McMillan

SC06- IBM Spectrum Conductor and IBM Spectrum Conductor with Spark – NDA Briefing

Abstract: IBM® Spectrum Conductor is a highly scalable data- and application-optimized fabric that enables organizations to analyze, access and protect their data with maximum efficiency. It leverages containerization technologies such as Docker for increased efficiency. It also speeds deployment and simplifies management across resources while adding enterprise-grade capabilities such as built-in high availability and optimized utilization with a global resource manager. For organizations seeking to take advantage of Apache Spark, IBM Spectrum Conductor with Spark offers an enterprise-grade, multi-tenant solution optimized for Apache Spark. It allows organizations to deploy Spark efficiently and effectively, simultaneously supporting multiple instances of Spark, increasing performance and scale, and eliminating silos of resources that would otherwise be inefficiently tied to separate Spark implementations. In this session we will address issues including containerization, Spark multi-tenancy, performance at scale, enterprise-grade management, security and migration from or working with current frameworks such as Hadoop. This is an NDA discussion that includes conversation around future product direction.

Attendees will need to bring signed non-disclosure agreements with them or sign non-disclosure agreements at the door.

Classification: NDA-Briefing

Owner: Rick Janowski

Speakers: Scott Campbell

SC07- IBM Spectrum Symphony – NDA Briefing

Abstract: This session will deliver an update on the latest release of IBM® Spectrum Symphony (formerly IBM Platform Symphony), IBM Spectrum Computing's industry-leading enterprise-class management software for running a wide variety of distributed applications and big data analytics on a scalable, shared grid. This is an NDA discussion that includes a conversation around future product direction.

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Classification: NDA-Briefing

Owner: Rick Janowski

Speakers: Scott Campbell

SC08- IBM Spectrum LSF Portfolio – NDA Briefing

Abstract: This session will deliver an update on the latest release of IBM® Spectrum Symphony (formerly IBM Platform Symphony), IBM Spectrum Computing's industry-leading enterprise-class management software for running a wide variety of distributed applications and big data analytics on a scalable, shared grid. This is an NDA discussion that includes a conversation around future product direction.

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Classification: NDA-Briefing

Owner: Gabor Samu

Speakers: Gabor Samu

SC09- IBM Spectrum Cluster Foundation – NDA Briefing

Abstract: This session will provide an update on the latest release of IBM Spectrum Cluster Foundation and its Community Edition version. IBM Spectrum Cluster Foundation provides infrastructure deployment, management, monitoring and advanced software lifecycle maintenance capabilities. It excels at managing multiple scale-out environments on a shared infrastructure and supports mixed architectures allowing an organization to take advantage of the latest IBM POWER8™ and x86 based technologies. With it, organizations can quickly and easily consolidate infrastructure silos onto a shared infrastructure for multiple workloads. IBM Spectrum Cluster Foundation Community Edition is a no-charge edition of IBM Spectrum Cluster Foundation. It features cluster provisioning, management, monitoring and reporting capabilities and is limited to a single cluster instance. It is certified for OpenPOWER and x86 systems. A generalized, non-NDA version of this briefing can be given if required.

Attendees will need to bring signed non-disclosure agreements with them or sign non-disclosure agreements at the door.

Classification: NDA-Briefing

Owner: Gabor Samu

Speakers: Gabor Samu

SC10- IBM High Performance Services (HPC Cloud)

Abstract: IBM High Performance Services delivers versatile, ready-to-use hybrid and stand-alone clusters in the cloud for organizations that need to quickly add compute and storage capacity. The services include IBM Spectrum LSF and IBM Spectrum Symphony workload management software and IBM Spectrum Scale software defined storage. A dedicated and experienced Cloud Operations teams fully provisions and configures the clusters in any one of SoftLayer's global data centers on dedicated bare-metal and virtual infrastructure with optional GPUs.

Owner: Jeff Karmioli

Speakers: Chris Porter, Alex Nguyen

SC11- Building Better Systems for HPC - POWER8 with NVLink Systems and the Power Systems LC Line – NDA Briefing

Abstract: Power Systems LC Servers are at the heart of IBM HPC clusters. This presentation will introduce the architectural advantages behind why these LC servers are built better for HPC and accelerated computing (especially POWER8 with NVLink), explain what application domains they benefit, and translate this into real-world performance. This is the perfect deep exploration for anyone architecting their next cluster or interested in HPC hardware. We'll also elaborate how early POWER8 with NVLink installations, combining the best of the OpenPOWER ecosystem including Tesla P100 GPUs, are delivering optimal performance.

Attendees will need to bring signed non-disclosure agreements with them or sign non-disclosure agreements at the door.

Classification: NDA-Briefing

Owner: Brett Newman

Speakers: Brett Newman

SC12-IBM XL C/C++/Fortran Compilers for OpenPOWER – NDA Briefing

Abstract: This presentation will provide the latest update on IBM's compilers for OpenPOWER, which will cover major features to enhance portability, compatibility and performance. This presentation will cover IBM XL C/C++ and Fortran roadmap for Power9 and GPU exploitation through CUDA and OpenMP accelerator extension, and address how applications can benefit from the IBM XL compilers' optimization and libraries.

Attendees will need to bring signed non-disclosure agreements with them or sign non-disclosure agreements at the door.

Classification: NDA Briefing

Owner: Yaoqing Gao

Speaker: Yaoqing Gao

SC13- POWER9 Processor and Core Deep Dive for HPC – NDA Briefing

Abstract: This presentation will provide a deep dive into the features and capabilities of the POWER9 processor from the lens of our processor architects. Special attention will be paid to the features of POWER9 supporting HPC and other latency sensitive workloads, including POWER9 instructions optimized for these workloads and unique interfaces to accelerators.

Attendees will need to bring signed non-disclosure agreements with them or sign non-disclosure agreements at the door.

Classification: NDA Briefing
Owner: Shakti Kapoor, Grace Liu
Speaker: Shakti Kapoor

SC14 – NVIDIA Tesla GPUs on IBM POWER8 with NVLink: Workloads and Deep Dive

Abstract: POWER8 with NVLink and Tesla P100 are here, and they revolutionizing GPU computing deployments for HPC, the enterprise, and AI. Our partners at NVIDIA will share how leaders in each of these fields exploiting GPUs in ways you can leverage for both these and every HPC workload. We will briefly explore how NVLink and CUDA Unified Memory impact your GPU deployment, and how NVIDIA hardware and software help enable you to realize the most out of OpenPOWER. In depth product information will be discussed, a brief product roadmap delivered, as well as how you can get started today.

Owner: Brett Newman
Speakers: Brad Davidson, NVIDIA

SC15 - NVIDIA PGI Compilers for OpenPOWER+Tesla: Tearing Down the CPU/GPU Memory Wall - NDA Briefing

Abstract: PGI Fortran, C and C++ compilers for IBM Power Systems S822LC for HPC servers dramatically simplify parallel and GPU programming for scientists and engineers. NVIDIA's PGI Compiler team will give an overview of their optimizing compilers for IBM's latest OpenPOWER servers featuring NVLink and NVIDIA Tesla P100 GPU accelerators (Pascal). You will learn how PGI compilers together with NVLink and CUDA Unified Memory enable quick and easy porting of applications from Linux/x86 to Linux/OpenPOWER, and incremental parallelization and acceleration of applications on NVIDIA Tesla P100 GPUs using OpenACC to maximize performance portability. The PGI team will also provide an overview of current and future plans for OpenMP, OpenACC and CUDA Fortran on multi-core OpenPOWER CPUs and NVIDIA GPUs.

Attendees will need to bring signed non-disclosure agreements with them or sign non-disclosure agreements at the door.

Classification: NDA Briefing
Owner: Dave Norton, Doug Miles, Brad Davidson
Speaker: Dave Norton, Doug Miles, Brad Davidson

SC16- Mellanox InfiniBand Solutions and Directions – NDA Briefing

Abstract: Mellanox InfiniBand is the critical bridge between the ingredients of the highest performing clusters. Mellanox experts will review the latest portfolio of Smart Interconnect solutions and Mellanox's contributions to OpenPOWER ecosystem innovation. This includes technology unique to IBM Power Systems and OpenPOWER servers, how it can benefit you, and a brief comparison of industry fabrics. Upcoming product roadmap and directions will also be discussed.

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Classification: NDA-Briefing
Owner: Scot Schultz
Speakers: Scot Schultz

SC17- High Level Programming for OpenPOWER and CORAL systems – NDA Briefing

Abstract: The OpenPOWER systems architecture comprises both CPUs and GPUs to enable the delivery of increased application performance for Technical Computing users. In the CORAL timeframe, the systems will be further enhanced by the addition of NVLINK which will provide a coherent memory view across the node. The ability to develop applications that exploit the performance of these systems in a highly productive manner will be greatly enhanced with the availability of compilers and tools which support high level programming models.

This session will provide an overview of the OpenMP4 support for heterogeneous architectures which is currently being enabled in the LLVM open source compiler infrastructure. We also include some discussion on best practices, porting experiences to date, and programming suggestions for performance enablement within portability constraints.

Attendees will need to bring signed non-disclosure agreements with them or sign non-disclosure agreements at the door.

Classification: NDA-Briefing

Owner: Content: Kathryn O'Brien & Scheduling: Ruud Haring

Speakers: Carlo Bertolli, Zehra Sura

SC18- High Performance Storage System Service Offering

Abstract: HPSS is software defined storage designed to manage and access exabytes of data, spanning billions of files, at high data rates in cloud or HPC storage environments. HPSS presents a file system with a unified common namespace and a cloud interface directly to users who have access to common tools and transfer protocols (FTP, GridFTP, sFTP, Swift, S3, VFS FUSE, NFS, HSI, HTAR, etc.) to store and retrieve their files. Files can be on disk, disk protected by tape, disk space managed by tape, or stored directly to tape. HPSS maintains the integrity of files over time with user checksums and logical block protection (T10 LBP) features.

HPSS has a cluster design that combines the power of multiple computers, disk storage units, tape libraries, and tape drives, into a single, integrated storage system. Attendees should specify a request for either:

Owner: Jim A. Gerry

Speakers: Jim A. Gerry

SC20- HPC Storage – Storage, Tape Systems, File System, Hybrid Cloud and Solutions – NDA Briefing

Abstract: This session will focus on the challenges and opportunities for addressing data storage and management issues, including discussions on software defined storage, end to end IBM storage solutions for Technical Computing/HPC environments, Spectrum Scale, Elastic Storage Server, HPSS, DCS Storage family, flash storage and tape technologies. In addition, storage tiering and the IBM storage portfolio will be highlighted, which can help reduce data management costs, transforming your organization with better data driven decision in real time using Flash and Storage Technology.

Attendees will need to bring signed non-disclosure agreements with them or sign non-disclosure agreements at the door.

Classification: NDA-Briefing

Owner: Doug O'Flaherty

Speakers: Matt Drahzal

SC21- IBM Tape Solutions & Directions – NDA Briefing

Abstract: An update and roadmaps will be covered for IBM LTO and 3592 (TS11x0) tape technology as well as the TS4500 tape library.

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Classification: NDA-Briefing

Owner: Lee Jesionowski

Speakers: Lee Jesionowski

SC22- New Product Deep Dive: The latest in IBM Elastic Storage Server and Flash – NDA Briefing

Abstract: IBM Elastic Storage Server is a fully integrated server-based storage system for Analytics and HPC, which combines Spectrum Scale software (previously known as GPFS) with IBM's latest generation of Power processors and flash arrays to deliver a complete high-performance, high-value scalable storage solution including erasure coding software, instead of traditional RAID, to deliver high reliability and a graphical user interface to simplify deployment and management.

Attendees will need to bring signed non-disclosure agreements with them or sign non-disclosure agreements at the door.

Classification: NDA-Briefing

Owner: Doug O'Flaherty

Speakers: Matt Drazhal, Doug Petteway, Chandra Mukhyala, Alex Chen

SC23- IBM Spectrum Scale expanding support with integrated NFS, SMB, Object and Cloud– NDA Briefing

Abstract: IBM Spectrum Scale is a proven, scalable, high-performance data and file management solution (based upon IBM General Parallel File System or GPFS technology) that's being used extensively across multiple industries worldwide. IBM Spectrum Scale provides simplified data management and integrated information lifecycle tools capable of managing petabytes of data and billions of files, in order to manage the growing cost of dealing with ever increasing amounts of data. IBM Spectrum Scale enables integrated support for NFS, SMB, Object and Hybrid Cloud.

Attendees will need to bring signed non-disclosure agreements with them or sign non-disclosure agreements at the door.

Classification: NDA-Briefing

Owner: Doug O'Flaherty

Speakers: Doug O'Flaherty, Carl Zetie, Sandeep Ramesh, Scott Fadden

SC24- IBM Spectrum Scale - Technical Deep Dive – NDA Briefing

Abstract: This session is an opportunity to drill down on the new functionality in Spectrum Scale with the engineers and product leaders. It will cover protocol support, performance/scaling enhancements and administrative tools

Attendees will need to bring signed non-disclosure agreements with them or sign non-disclosure agreements at the door.

Classification: NDA-Briefing

Owner: Doug O'Flaherty

Speakers: Doug O'Flaherty, Carl Zetie, Sandeep Ramesh, Scott Fadden

SC25- Data Centric Systems: Innovative solutions for cognitive, big data, complex analytics and HPC – NDA Briefing

Abstract: High Performance Computing continues to evolve. HPC will target the full range of workflows of interest to its customers, including all aspects of data management and data manipulation. In future workflows we see a convergence of Big Data, complex analytics, and modeling and simulation. These complex requirements must be addressed by future system solutions. IBM's system solutions are tailored by working closely with our customers and optimizing their workloads on our Data Centric Systems to provide the greatest insight possible in the shortest amount of time. This session will provide a complete overview of our next generation Data Centric systems, technology, and OpenPOWER-based roadmap, along with selected workflow use cases.

Attendees will need to bring signed non-disclosure agreements with them or sign non-disclosure agreements at the door.

Classification: NDA-Briefing

Owner: Ruud Haring

Speakers: Jim Kahle, Jim Sexton