HP-CAST

High Performance - Consortium for Advanced Scientific and Technical Computing
World-Wide HPC, AI and Apollo Server User Group Conference
Hewlett Packard Enterprise - Datacenter Infrastructure Group (DCIG)
Grand Hyatt Denver, 1750 Welton Street, Denver, Colorado, USA

HP-CAST 29

Supported by: Hewlett Packard Enterprise, intel, NVIDIA, DDN STORAGE

Draft Agenda V2.7
Please note: All session details are subject to change without further notice

Thursday, November 9th – Registration & Get-Together

18:00 - 22:00	Registration & Welcome Reception at the Grand Hyatt, Pinnacle Club, 38th Floor

Friday, November 10th – Conference Section

08:00 - 18:00	Registration

	HP-CAST Board and Executive Updates	
08:00 - 08:15	HPE-Liaison and Board Representative HP-CAST President	Frank Baetke, HPE Rudolf Lohner, KIT/SCC
08:15 - 08:45	HPE Executive Update: HPC & AI Business Trends, Strategy and Portfolio	Bill Mannel, HPE
08:45 – 09:00	Executive Guest Speaker Update: Big Compute	Trish Damkroger, Intel

	Invited Customer Keynote Lectures	
09:00– 09:30	Process and Experience with a Petascale HPC System for Industrial Chemical Research & Development at BASF	Stephan Schenk, BASF
09:30 - 10:00	Petascale Computing at BP – Experiences and HPC Trends in the Energy Industry	Keith Gray, BP
10:00 - 10:30	"Bridges" in Production - Experiences with an Architecture Optimized for Life Science	Nick Nystrom, Pittsburgh Supercomputing Center (PSC)
10:30 - 11:00	Results from Tsubame 3.0 - A 47 AI-PFLOPS System for HPC and AI Convergence	Satoshi Matsuoka, Tokyo Institute of Technology

11:00 - 11:30	Break

	HPE Product Updates and Roadmaps – Attention: Restricted Attendance	
11:30 - 12:15	Roadmap Updates and Positioning of HPE's HPC and AI/Big Data-relevant Product Lines	Craig Yamasaki, Mark Seamans et al., HPE
12:15 - 12:30	Update on an Emerging New Portfolio of HPC Systems	Craig Yamasaki et al., HPE
12:30 - 12:45	Hybrid HPC/HPC Cloud: Concepts and Implementation	Jean Luc Assor, HPE et al.

12:45 - 13:50	Lunch

	Joint HPE/Customer Research and Customer Collaborations Programs	
13:50 - 14:20	Cost Effective, Low Carbon Footprint, Fuel Cell Solutions for Data Centers	Steven Hammond, NREL; Christian Mohrdieck, Daimler; Bob Mount, Power Innovations; Tahir Cader, HPE
14:20 - 14:35	Enabling Technologies in Formula 1	Sorin-Cristian Cheran, HPE

	Key Partner Technology Updates	
14:35 - 14:55	Intel HPC Investment Update	Bill Magro, Intel
14:55 - 15:15	HPC Exascale + AI	Bob Crovella, NVIDIA
15:15 - 15:30	An Overview of New Vector Computing Technologies	N. N., Hardware Partner
15:30 - 15:45	HPC Storage Trends - The Flash Era and Beyond	Kurt Kuckein, DDN

	HPE "The Machine"	
15:45 - 16:00	"The Machine" – Progress and Experience (Separate agenda "Hands-on" Workshop on Saturday)	Paolo Faraboschi, HPE Labs

16:00 - 16:30	Break

	HPE Keynotes – HPE Advanced Technology Programs	
16:30 – 17:00	HPC Applications : Integrating Deductive and Inductive Intelligences	Eng Lim Goh, HPE
17:00 - 17:45	HPE's Exascale Computing Updates: Gen-Z and the HPE's Contribution to the PathForward Program	Mike Vildibill, HPE Paolo Faraboschi, HPE Labs Nic Dubé, HPE
17:45 - 18:00	HP-CAST Elections Plenary Closing Session	Frank Baetke, HPE

19:00- 23:00	Gala Dinner at the Palm Restaurant (Westin Denver) for HP-CAST 29 Participants (http://www.thepalm.com/Denver)

Saturday, November 11th – Tutorial Section

This section will be run as four parallel break-out sessions

TRACK "A": Accelerators, Processors, Software Environments (4h)		Room: tbd
08:00 - 08:45	Participation restrictions imposed by Intel may apply **Tutorial A1: Intel® Processor and Technology Update** NDA Overview of Upcoming Roadmap of Key Compute and Related Fabric Products. Topics: Xeon, Phi, OPA	**Chair: Trent Boyer, Intel** Thor Sewell, Joe Yaworski, Intel
08:45 - 09:30	Participation restrictions imposed by NVIDIA may apply **Tutorial A2: NVIDIA GPU an Technology Update** Inside what is Possible with NVIDIA Volta Architecture	**Chair: N.N., NVIDIA** Bob Crovella, NVIDIA
09:30 - 10:00	Participation restrictions imposed by AMD may apply **Tutorial A3: AMD Processor and CPU Technology Update** EPYC for HPC	**Chair: Ogi Brkic, AMD** Joshua Mora, AMD
10:00 - 10:30	**Break**	
10:30 - 11:00	Participation restrictions imposed by ARM/Cavium may apply **Tutorial A4: ARM Processor Technology Update and Roadmap** Arm Software Tools for HPC Cavium's ThunderX2 ARM Processor and Technology Update	**Chair: Larry Wikelius, Cavium** Chris Goodyer, ARM Giri Chukkapalli, Cavium
11:00 - 11:15 11:15 - 11:30	**Tutorial A5: Application-Specific Accelerators** FPGA Breakthroughs for Data Center Acceleration *FPGA Alternative Solutions*	**Chair: Alberto Galli, HPE** Mike Strickland, Intel N.N.
11:30 - 11:50 11:50 - 12:10 12:10 - 12:30	**Tutorial A6: S/W Environments, Development and Optimization Tools** Software Tools for All of HPC Extending Debugging Capabilities: How to Debug Mixed Python/C++ Code for AI Algorithms Out of Box *OpenCL Update* *General Q&A Session – S/W for Accelerators*	**Chair: Alberto Galli, HPE** David Lecomber, ARM Nikolay Piskun, RogueWave Software N.N.
TRACK "B": Parallel File Systems and Object Storage for HPC (4h)		**Room: tbd**
08:00 - 08:30 08:30 – 08:50 08:50 - 09:00	**Tutorial B1: LUSTRE® for HPC – HPE Scalable Data** HPE Scalable Data Management and Storage for HPC: Capabilities and Roadmap Lustre Community Update The Open File System Community – EOFS and OpenSFS: Successes and Challenges	**Chair: Kirill Malkin, HPE** Mark Seamans et al., HPE Peter Jones, Intel Hugo Falter, ParTec/EOFS
09:00 - 09:20 09:20 – 09:40 09:40 – 09:50 09:50 – 10:00	**Tutorial B2: Big Data & Parallel File Systems – Part 1** BeeGFS and BeeOND – Progress and Experience IME: Breaking the Boundaries of Filesystems with a Scale-out, All Flash Data Platform *Blue Store Performance Advances* *Platform Update with Focus on E2800 and E5700 Arrays*	**Chair: Mark Seamans, HPE** Franz-Josef Pfreundt, FhG/ITWM (Fraunhofer Society) James Coomer, DDN N. N., SUSE N. N., NetApp
10:00 - 10:30	**Break**	
10:30 - 10:50 10:50 - 11:10 11:10 - 11:30 11:30 - 11:50 11:50 – 12:10 12:10 – 12:20 12:20 – 12:30	**Tutorial B3: Big Data & Parallel File Systems – Part 2** The Seven Tenets of Good Archiving Your Precious Data, Keeping it Close and Warm Panasas ActiveStor and the New Vision of Scaling Next Generation NVMe-native Parallel File System Accelerating HPC Workloads NVMe Storage Advantage/Apache Pass Cray ClusterStor Update – Seagate Transition, Offerings and Support Continuity Moving Lustre Forward with DDN and HPE	**Chair: Mark Seamans, HPE** Matthew T. Starr, SpectraLogic Brad King, Scality David Sallak, Panasas Liran Zvibel, Weka.IO Andrey Kudryavtsev & N. N., Intel Torben Kling Petersen, Cray Carlos Aoki Thomaz, DDN

12:30 - 13:30	**Lunch**

Saturday, November 11th – Tutorial Section cont.

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TRACK "C": Clouds for HPC (2h)		Room: tbd
	Tutorial C1: Clouds for HPC – Part 1	**Chair: Jean-Luc Assor, HPE**
08:00 - 08:20	Hybrid HPC / HPC Cloud: Technical Deep Dive	Glyn Bowden, HPE
08:20 - 08:40	Full Integration of The UberCloud Application Containers with HPE's Cloud SW Stack	Burak Yenier, The UberCloud
08:40 - 09:00	*Extending Available Big Compute Resources by Ultimate Compute Mobility and New Deployment Methods*	N.N., RStor
09:00 – 09:20	Hybrid HPC Considerations and Advocacy	Nidhi Chappell, Intel
	Tutorial C2: Clouds for HPC – Part 2	**Chair: Jean-Luc Assor, HPE**
09:20 – 09:40	Rescale Technical Deep Dive	N.N., Rescale
09:40 – 10:00	Cloud Bursting	David Hill, Adaptive Computing
10:00 - 10:30	**Break**	
	Tutorial C3: Clouds for HPC – Part 3	**Chair: Jean-Luc Assor, HPE**
10:30 – 10:50	PBScloud.io, a Cloud Neutral Automation and Orchestration Tool	Scott Suchyta, Altair
10:50 – 11:10	Suse Openstack	N.N., Suse
11:10 – 11:30	Advania's HPC Cloud in Iceland : Implementation and Case Studies	N.N., Advania
11:30 – 11:50	Living Heart Project Powered by Hybrid HPC	Burak Yenier, Wolfgang Gentzsch, The UberCloud
11:50 – 12:10	ANSYS Virtual Benchmarking Campaign	N.N., ANSYS
12:10 – 12:30	Key Development of OpenStack for Hybrid HPC	Glyn Bowden, HPE

TRACK "P": Portfolio (1h)		Room: tbd
	Tutorial P: Portfolio Assessment - HPC Servers	**Chair: Craig Yamasaki, HPE**
08:00 - 08:40	An Assessment of All HPE Servers in Use for HPC (tbc)	Jimmy Daley et al., HPE
08:40 – 09:00	Introducing Latest Superdome Family Member for Memory Driven Computing	Michael Woodacre, HPE

TRACK "I": Interconnect Technologies – Current and Future Products and Standards (1h20')		Room: tbd
	Tutorial I1: Interconnect Technologies	**Chair: Nic Dubé, HPE**
09:00 – 09:20	The Era of Data-Centric HPC	Gilad Shainer, Mellanox
09:20 – 09:40	HPC Fabric Update: Intel Omni-Path Architecture	Joe Yaworski, Intel
09:40 – 10:00	EXTOLL Fabri^3 -Network in a Box	Mondrian Nüssle, Extoll
10:00 - 10:30	**Break**	
	Tutorial I2: Interconnect Technologies / Shared Memory Options	**Chair: Leslie Tung, HPE**
10:30 - 10:50	Field Experience Using 3D Xpoint as System Memory	Benzi Galili, ScaleMP

TRACK "S": HPE Software Environments - HPC Middleware and Solutions (1h 40')		Room: tbd
	Tutorial S1: HPE Software for HPC	**Chair: Leslie Tung, HPE**
10:50 - 11:10	Software Development with HPE Performance Software – Message Passing Interface	Michael Raymond, HPE
11:10 – 11:30	System Management with HPE Cluster Management Tools: HPE Insight Cluster Management Utility & HPE SGI Management Suite	Corneliu Boac, HPE
	Tutorial S2: Complementing Software for HPC	**Chair: Leslie Tung, HPE**
11:30 – 11:50	Advanced Architectures for HPC and Visualization Services	Francesco Ruffino, Nice Software
11:50 – 12:10	Intel Parallel Studio XE Update	Bill Magro, Intel
12:10 – 12:30	Overview over Intel's Software Defined Visualization Technologies	Ingo Wald, Intel

12:30 - 13:30	**Lunch**

Saturday, November 11th – Tutorial Section cont.

This section will be run as four parallel break-out sessions

TRACK "D": Data Analytics and Machine Learning (2h)		Room : tbd
	Tutorial D1: Data Analytics and Machine Learning - I	**Chair: Carissa Stith, HPE**
13:30 - 13:50	**Using Apollo 6500 in Data Analytics**	**Craig Yamasaki, HPE**
13:50 - 14:10	**Intel HW & SW for Artificial Intelligence**	**Thor Sewell, Jordan Plawner, Intel**
14:10 - 14:30	**Enabling the Future of Machine Learning Applications**	**Gilad Shainer, Mellanox**
	Tutorial D2: Data Analytics and Machine Learning - II	**Chair: Carissa Stith, HPE**
14:30 - 14:50	**Using Software-Defined Compute to Create a Single Infrastructure for HPC, Big Data and Machine Learning Applications**	**Whitney Wickesberg, Bright Computing**
14:50 - 15:10	***Business Transformation Utilizing AI/DL***	**Bob Crovella, NVIDIA**
15:10 - 15:30	**Making Machine Learning Compute Bound Again**	**Liran Zvibel, Weka.IO**

TRACK "H": High End HPC Liquid-cooled Product Update (1h)		Room : tbd
13:30 - 14:30	**Tutorial H1: Apollo SGI 8600 High End Product Family Update and HPC Experiences**	**Chair: Jimmy Daley, HPE**
	Liquid-Cooled Systems: Technology Details and Roadmap	**Craig Yamasaki et al., HPE**

TRACK "M": Architecture, Cartridges, Software and Applications for Moonshot (1h)		Room: tbd
14:30 - 15:30	**Tutorial M: Moonshot Technology Update**	**Chair: Sorin-Cristian Cheran, HPE**
	Moonshot Update: New Solutions, Performance Measurements and Roadmap	**Gerald Kleyn et al., HPE**

TRACK "W": Workflow Solutions for HPC (1h)		Room : tbd
	Tutorial W1: Workflow and Data Center Automation for HPC	**Chair: Jean-Luc Assor, HPE**
13:30 - 13:50	**Access, Control, and Optimize HPC – Stronger, Faster, Better with PBS Pro!**	**Scott Suchyta, Altair**
13:50 - 14:10	**Cross Platform**	**Shawn Hoopes, Adaptive Computing**
14:10 - 14:30	**Access, Control, and Optimize HPC – Visualize, Deploy, and Manage with PBS Works!**	**Scott Suchyta, Altair**

TRACK "N": Next Generation Systems (2h) Restricted Attendance		Room : tbd
13:30 – 15:30	**Next Generation Systems User Group Meeting: Latest Accomplishments & Updates from Customers, Partners, & Invited Guests on the ARM Ecosystem Development Collaboration Platform with Cavium**	**Chair: Kelly Pracht, HPE** **Mike Vildibill, Nic Dubé, Andy Warner, et al., HPE; Giri Chukapali, Cavium (tbc); Chris Goodyer, ARM; Jon Masters, Red Hat; N. N., Mellanox**
15:30 - 16:00	**Break**	

TRACK "E": Race to Exascale (2h) HPE and Customers Only		Room : tbd
16:00 - 18:00	**A closer look at HPE's Advanced Technologies: Join HPE's leading technologists for an exclusive set of presentations on the latest technology developments that will enable us to accelerate towards Exascale Computing**	**Chair: Paolo Faraboschi, HPE Labs** **Stan Williams, Nic McDonald, Michael Raymond, Sagi Mathai, Ashkan Seyedi, HPE Labs; Nic Dubé, HPE**

"LS-SIG" Customer Forum (LS-SIG) HPE and Customers Only		Room : tbd
16:00 - 18:00	**Customer Forum / Large System SIG (LS-SIG)** **Open Discussion of Progress, Suggestions, Issues and Problems**	**Chairs: Craig Yamasaki, HPE, Nigel Barry, Airbus** **HPE HPC Customers and Representatives**

18:00	**HP-CAST 29 Adjourn**