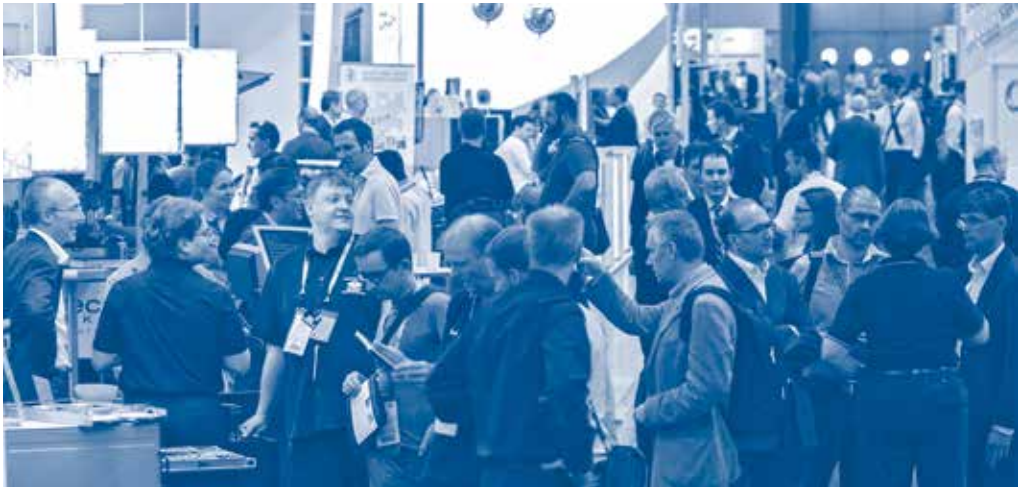
INTERNATIONAL
SUPERCOMPUTING CONFERENCE

ISC'14

Join the HPC Community

June 22 – 26, 2014, Leipzig, Germany



Conference & Exhibition Guide

www.isc-events.com/isc14

Partner

IEEE COMPUTER SOCIETY Germany

If the Pocket Guide is missing here, there are Pocket Guides available at the Registration Counter (CCL, Level -1), the Information Counter (CCL, Level 0), and throughout the CCL Congress Center.

Dear ISC Attendee,

This year's conference marks a turning point for us, since it is the first time that it will take place without our father, former General Chair and founder of ISC, Hans Meuer.

Thomas & Martin Meuer

We have received much support in the past months from the HPC community, which encourages us to continue the work in his spirit.

Hans always aimed for the "best ISC ever," so we hope that you appreciate our efforts in putting together an interesting and comprehensive program featuring about 300 speakers as well as an exceptional lineup of more than 150 exhibitors from around the globe.

Lastly, we want to thank all of our generous sponsors for making this event possible and for showing their commitment to supporting the global HPC community. Thanks also apply to the numerous helpers, volunteers, contributors, and last but not least, our ISC team.

Yours sincerely,

Thomas & Martin Meuer
ISC General Co-Chairs

Prof. Dr. Hans W. Meuer

In 1990, while in the middle of writing my doctoral thesis, I received a phone-call from somebody looking for a research assistant with experience in programming and optimizing HPC applications. I did not feel ready to look for a job, but due to the persistence of the caller I agreed to an interview. I had no idea that I would end up not only taking the job, but also meeting the person, who would most deeply influence my professional career and become a close personal friend for many years to follow, Hans W. Meuer.

Hans had graduated in mathematics from the University of Giessen in 1962 and worked after that at the Research Center in Jülich, Germany until 1973. While working full time he continued his studies and due to his determination received in 1972 his doctorate in applied mathematics from the Rheinisch-Westfälische Technische Hochschule (RWTH) Aachen. Since 1974, he was professor in the Faculty of Mathematics and Computer Science at the University of Mannheim specializing in software engineering and was director of the computing center of the university.

His energy, curious intellect, and thirst for exploring new ideas drove him to engage in many activities beyond his core duties. Two particular long-lasting and intensive activities were his leading role in user groups such as SAVE (Siemens Anwender Verein) and his position as editor-in-chief of the professional German IT journal PIK – Praxis der Informationsverarbeitung und Kommunikation (published by KG Saur Verlag München).

His passion however – aside from chess, soccer, and his family – has always been Supercomputing. Naturally, he became one of the early evangelists for the field in the German community. In 1986, he organized a conference about the subject in Mannheim and the German user community came despite the fact that the University of Mannheim was not particularly known as a player in the field of Supercomputing. It is only due to his determination and leadership that this annual conference, now called ISC, has thrived and has become one of the worldwide leading events in HPC.

From the beginning, Hans managed to cultivate a very special, collegial, and intimate atmosphere at ISC, which was important to him and a reflection of his generous, cheerful, and always accommodating character. Thanks to Hans, ISC still feels more like a gathering of friends with common professional interests than any other conference I have attended.

At his conference, Hans always liked to publish statistics about the market for Supercomputers and one of my early tasks working with him was to find a new foundation for these statistics. Over the course of several years, we developed and implemented together the concept of the TOP500, a project that still keeps me busy and, like ISC, would not exist without Hans. I feel very fortunate that we were able to continue our collaboration on this project for two decades.

I learned many things from Hans during this time, but what impressed me most was his never-ending energy and his dedication. One thing he could not imagine was "to retire". He greatly disliked the label and engineered in secrecy and with great skill the end of his tenure at the University of Mannheim in 1999. I was very impressed that almost no one outside the University had noticed his departure and many years later people would still ask me if I knew when he planned to retire. I had to answer truthfully - "never!" After his departure from the University, Hans was free to fully focus on ISC and the TOP500, which he gladly and very successfully did.

Despite being a driven person, Hans had a very warm and openhearted disposition, which he openly admitted. He was a loyal friend and patient mentor, open for new relationships and always ready to help his family and friends. He truly set an example for how to live a meaningful life professionally and personally in more than one way.

He is deeply missed.

Erich Strohmaier

Hans W. Meuer passed away peacefully on January 20th, 2014, at the age of 77 in the presence of his family after a brief battle with cancer.

INTERNATIONAL SUPERCOMPUTING CONFERENCE

PSNC

Conference4me

ISC'14 agenda on your mobile!

- Personal scheduler for conferences and exhibitions
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- Conference content with abstracts
- Easy access to conference key information
- Dynamic data synchronization and schedule updates
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- Conference news (via Twitter)
- Built-in conference maps
- Exhibition list
- Easy navigation on interactive exhibition map

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If you are interested in Conference4me supporting conferences you organize,
please visit the application website at: http://conference4me.eu

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General Information

General Information ISC'14

Agenda Planner

The ISC agenda planner at **www.isc-events.com/isc14_ap** lets you navigate easily through the conference program and provides details on sessions, speakers and presentations, and within a few clicks, you can design your own schedule.

Cloakroom

There is a cloakroom on Level -1 of the CCL – Congress Center Leipzig where you can leave your belongings during the following times:

Opening Hours

Monday, June 23	07:30 am – 09:00 pm
Tuesday, June 24	07:30 am – 07:00 pm
Wednesday, June 25	07:30 am – 07:00 pm
Thursday, June 26	08:00 am – 03:00 pm

Conference Guide

You will find an updated version of this Conference Guide at: **www.isc14.org/cg**

Copy & Print Center

A copy and print center (Copyland) providing document copying, printing and binding services is located in the Exhibition Hall (Level 0) at booth #902.

The services are available on:

Monday, June 23	08:00 am – 08:30 pm
Tuesday, June 24	08:00 am – 06:00 pm
Wednesday, June 25	08:00 am – 06:00 pm

For assistance, you can also contact Copyland by:

Phone	+49(0)351 801 19 79
Mobile	+49(0)1577-772 19 89 (David Hill)
E-mail	isc@copyland.de

Exhibition

With over 150 exhibitors from research and industries representing supercomputing, storage and networking, ISC will host the largest HPC exhibition in Europe in 2014. In the Exhibiton Hall (Level 0), the world's leading supercomputing companies and organizations will showcase high-performance computing, networking, storage and analysis technologies. All information on this year's exhibition is also available at: **www.isc-events.com/isc14/sponsors_exhibitors_overview.html**

Exhibition Hours

Monday, June 23	03:00 pm – 08:30 pm
(with Welcome Party from	06:30 pm – 08:30 pm)
Tuesday, June 24	10:00 am – 06:00 pm
Wednesday, June 25	10:00 am – 06:00 pm

For the exhibition floorplan and the exhibitor listing, please refer to the Pocket Guide, which you will find on page 2 of this Conference & Exhibition Guide; the Pocket Guide is also available at the Registration Counter (CCL, Level -1), the Information Counter (CCL, Level 0), and throughout the CCL Congress Center.

Exhibition Lounges

There will be lounges located in the Exhibition Hall (Hall 2) during ISC'14. Please refer to the current floor plan for exact locations **www.isc14.org/floorplan**

Opening Hours

Monday, June 23	03:00 pm – 08:30 pm
Tuesday, June 24	10:00 am – 06:00 pm
Wednesday, June 25	10:00 am – 06:00 pm

Exhibitor Services Helpdesks

In the Exhibition Hall (Hall 2), you will find a helpdesk for booth building, network, printing and shipping services (booths #900 – 903). These services will be available during exhibition opening hours and can be contacted for technical assistance.

Opening Hours

Monday, June 23	03:00 pm – 08:30 pm
Tuesday, June 24 & Wednesday, June 25	10:00 am – 06:00 pm

First Aid

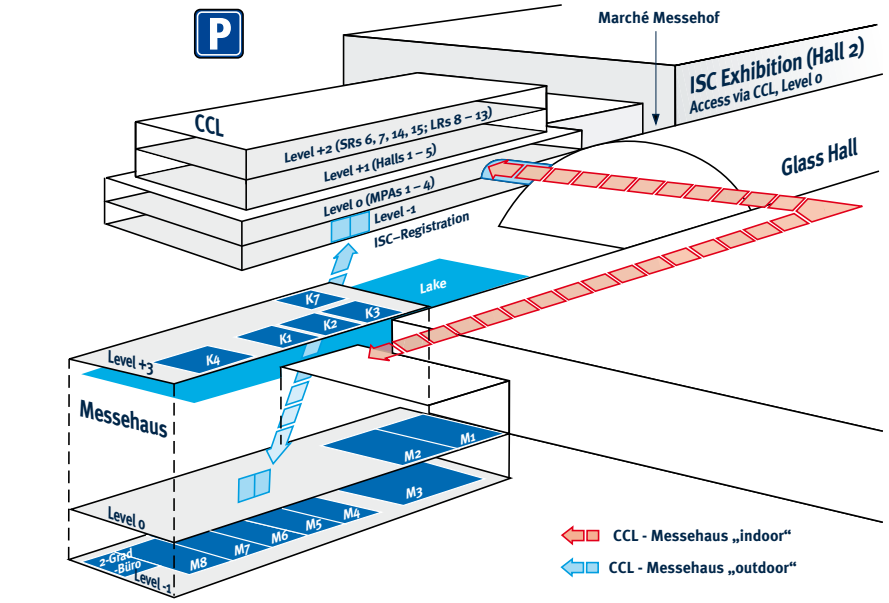
In the event of a medical emergency, please contact the Registration Counter (CCL, Level -1), Information Counter (CCL, Level 0) or any helpdesk in the Exhibition Hall (Level 0). If you are unable to locate the Registration Counter or a helpdesk, please call: +49 112.

Floor & Exhibition Plans & Overviews

Please refer to the Pocket Guide, which you will find on page 2 of this Conference & Exhibition Guide or which you can get at the Registration Counter (CCL, Level -1) or the Information Counter (CCL, Level 0).

CCL Overview

CCL, Exhibition Hall (Hall 2), Messehaus



Free Publications

Free HPC and IT magazines are available at the Registration Counter (CCL, Level -1) and in the Exhibition Hall (Hall 2, Level 0).

Information Counter

The ISC Information Counter is located in the CCL Congress Center Leipzig on Level 0 (for the exact location, please refer to the ISC'14 Pocket Guide).

Opening Hours

Sunday, June 22	08:00 am – 04.00 pm
Monday, June 23	08:00 am – 06:00 pm
Tuesday, June 24	08:00 am – 04:00 pm
Wednesday, June 25	08:00 am – 04:00 pm
Thursday, June 26	08:00 am – 02:00 pm

ISC Cloud'14 & ISC Big Data'14

ISC Cloud'14 will take place for the fifth time this September in the Marriott Hotel, Heidelberg, Germany. Immediately afterwards, ISC Big Data'14 will take place for the second time at the same location. There are various sponsorship packages available at both events. For more information, or to simply register, please visit us in the Exhibition Hall (Hall 2) at booth #204.

Lost Badge Fee

There is a 30 Euro processing fee to replace lost badges.

Mobile App

ISC'14 conference and exhibition information can be accessed with the mobile conference assistant Conference4me developed by the Poznan Supercomputing and Networking Center (PSNC); this app is available for Android, Apple iOS and Windows Phone devices.

To download PSNC's mobile app, please visit **http://conference4me.psnc.pl** or type **Conference4me** in Google Play, iTunes App or Windows Phone stores.

Network Helpdesk

The helpdesk of the ISC network team is located in the Exhibition Hall (Level 0) at booth #900 and is open during exhibition opening hours. Please contact them for questions concerning the network, WLAN, internet or e-mail access.

Opening Hours

Monday, June 23	03:00 pm – 08:30 pm
Tuesday, June 24 & Wednesday, June 25	10:00 am – 06:00 pm

General Information ISC'14

Passes Overview

The different ISC'14 passes provide access to different sets of activities, as summarized below:

Sunday, June 22

	Tutorial Pass	Extra Pass
Gives access to all sessions marked in:	■	■
Tutorials	✓	
HPC Advisory Council European Conference		✓
Workshop on International Cooperation for Extreme-Scale Computing		✓
Coffee & Lunch Breaks	✓	✓

Monday, June 23 – Thursday, June 26

	Conference Pass	NEW: Special Focus Pass	Exhibition Pass
Gives access to all sessions marked in:	■ ■ ■	■ ■	■
Invited Sessions	✓		
Distinguished Talks	✓		
Panels	✓		
HPC in Asia	✓		
Keynotes	✓	✓	
Industry Innovation Through HPC	✓	✓	
Research Papers	✓	✓	
Research Posters	✓	✓	
BoFs	✓	✓	✓
Vendor Showdown	✓	✓	✓
Exhibitor Forum	✓	✓	✓
Exhibition	✓	✓	✓
Social Events	✓	✓	✓
Satellite Events	✓	✓	✓
Coffee & Lunch Breaks	✓	✓	✓

Prayer Room

ISC'14 provides a prayer room for Muslims; it is located in CCL, Level +1 behind Hall 1. The room is open June 22 – June 25 from 07:30 am – 06:30 pm and on June 26 from 08:00 am – 02:30 pm.

Press Room / Speakers Room

The Press Room and the Speakers Room are located in Multi Purpose Area 3 (CCL, Level 0).

Opening Hours

	Press Room	Speakers Room
Sunday, June 22	07:30 am - 06:30 pm	07:30 am - 06:30 pm
Monday, June 23	07:30 am - 10:00 pm	07:30 am - 06:30 pm
Tuesday, June 24	07:30 am - 06:30 pm	07:30 am - 06:30 pm
Wednesday, June 25	07:30 am - 06:30 pm	07:30 am - 06:30 pm
Thursday, June 26	07:30 am - 05:00 pm	07:30 am - 02:00 pm

Please note that speakers/chairpersons should submit their final presentation slides to the technicians in the Speakers Room no later than 60 minutes before their sessions.

Proceedings

The conference proceedings will be available online with presentations provided as pdf files a week after the event, and ISC'14 attendees will receive an e-mail with the access link to the proceedings. All accepted research papers and extended abstracts of selected posters will also be published in the Springer's Lecture Notes in Computer Science (LNCS) series and are available as hardcopies during ISC'14 and as download at Springer's website for a limited time after ISC'14.

Public Transportation

The ISC registration fee includes travel within Leipzig (zone 110) from June 22 through June 26. Please wear your conference badge at all times when using public transportation. For a Leipzig public transportation map, please refer to pages 18 & 19 in this Conference & Exhibition Guide.

Registration Counter

The Registration Counter is located in the entrance hall (CCL, Level -1) of the CCL Congress Center Leipzig and is open as follows:

Opening Hours

Sunday, June 22	07:30 am – 06:00 pm
Monday, June 23	07:30 am – 06:00 pm
Tuesday, June 24	07:30 am – 06:00 pm
Wednesday, June 25	07:30 am – 06:00 pm
Thursday, June 26	08:00 am – 12:00 pm

Student Cluster Competition (Exhibition Hall, Booths 281–285 & 290–295)

The third HPCAC-ISC Student Cluster Competition will take place in Leipzig, Germany this year! HPC Advisory Council is the main organizer for the competition; please visit their website for detailed information (**www.hpcadvisorycouncil.com/events/2014/isc14-student-cluster-competition/**).

The competition will feature small teams that compete to demonstrate the incredible capabilities of state-of-the-art high-performance cluster hardware and software. In a real-time challenge, teams of six undergraduate and/or high school students will build a small cluster of their own design on the ISC exhibit floor and race to demonstrate the greatest performance across a series of benchmarks and applications. The students will have a unique opportunity to learn, experience and demonstrate how high-performance computing influence our world and day-to-day learning. Held in collaboration of the HPC Advisory Council and ISC, the Student Cluster Competition is designed to introduce the next generation of students to the high performance computing world and community.

The following teams have been chosen:

- Centre for HPC (CHPC), South Africa
- Ulsan National Institute of Science and Technology (UNIST), South Korea
- Massachusetts Institute of Technology (MIT), Bentley University, Northeastern University(NEU), United States
- EPCC at The University of Edinburgh (EPCC), United Kingdom
- Chemnitz University of Technology, Germany
- University of Hamburg, Germany
- University of São Paulo (USP), Brazil
- University of Colorado at Boulder, United States
- University of Science and Technology of China (USTC), China
- Shanghai Jiao Tong University (SJTU), China
- Tsinghua University, China

The Student Cluster Challenge is sponsored by **AIRBUS**.

Competition Schedule

For the most complete and up-to-date schedule, please refer to:
www.hpcadvisorycouncil.com/events/2014/isc14-student-cluster-competition/

Monday, June 23

03:00 pm - 03:10 pm	Competition Kick-off
03:10 pm - 08:20 pm	LINPACK and HPCC Runs

Tuesday, June 24

10:00 am - 10:10 am	Pre-competition Announcement
10:10 am - 05:50 pm	Applications Run (Part 1)

Wednesday, June 25

10:00 am - 10:10 am	Pre-competition Announcement
10:10 am - 04:00 pm	Applications Run (Part 2)
06:00 pm	Award Ceremony (CCL, Hall 1)

Tweeting during ISC'14

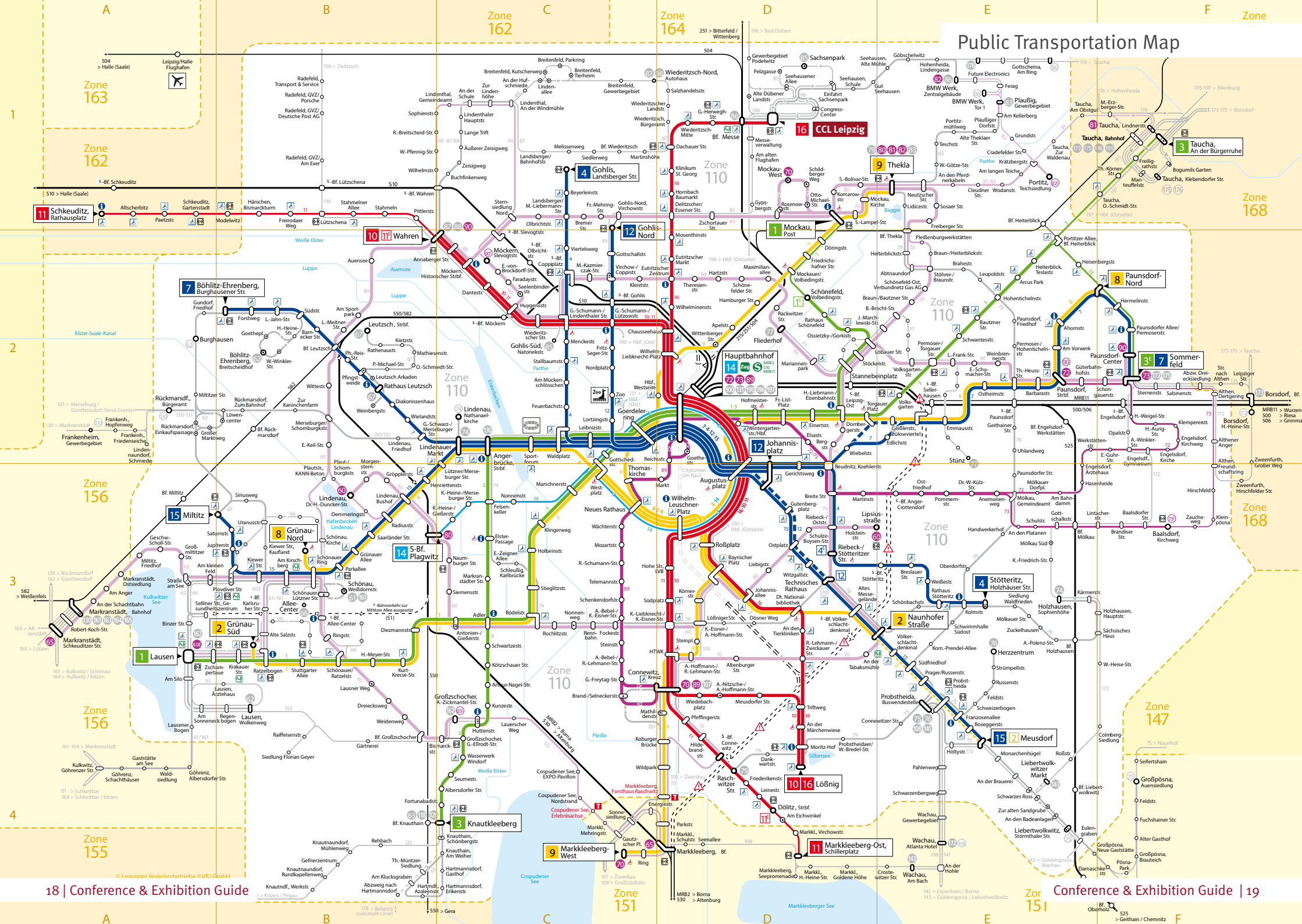
Please use the hashtags #ISC14 and #ISCexhibit in your tweets about the conference and exhibition. Please use it and tell your friends, colleagues and customers to use it too! A hashtag becomes more effective as more people use it.

Wireless Internet Access

Wireless Internet access is available during the whole conference. It can be accessed with a personal code each ISC'14 participant receives on his/her registration.
NOTE: Private WLAN routers are not permitted in the Congress Center Leipzig!

YouTube & Flickr Activities

We will be filming and photographing daily during ISC'14. If you are interested in viewing the footages, please visit our YouTube Channel **http://goo.gl/edLjG** and our Flickr photostream **http://goo.gl/wAeyM**.


Public Transportation Map
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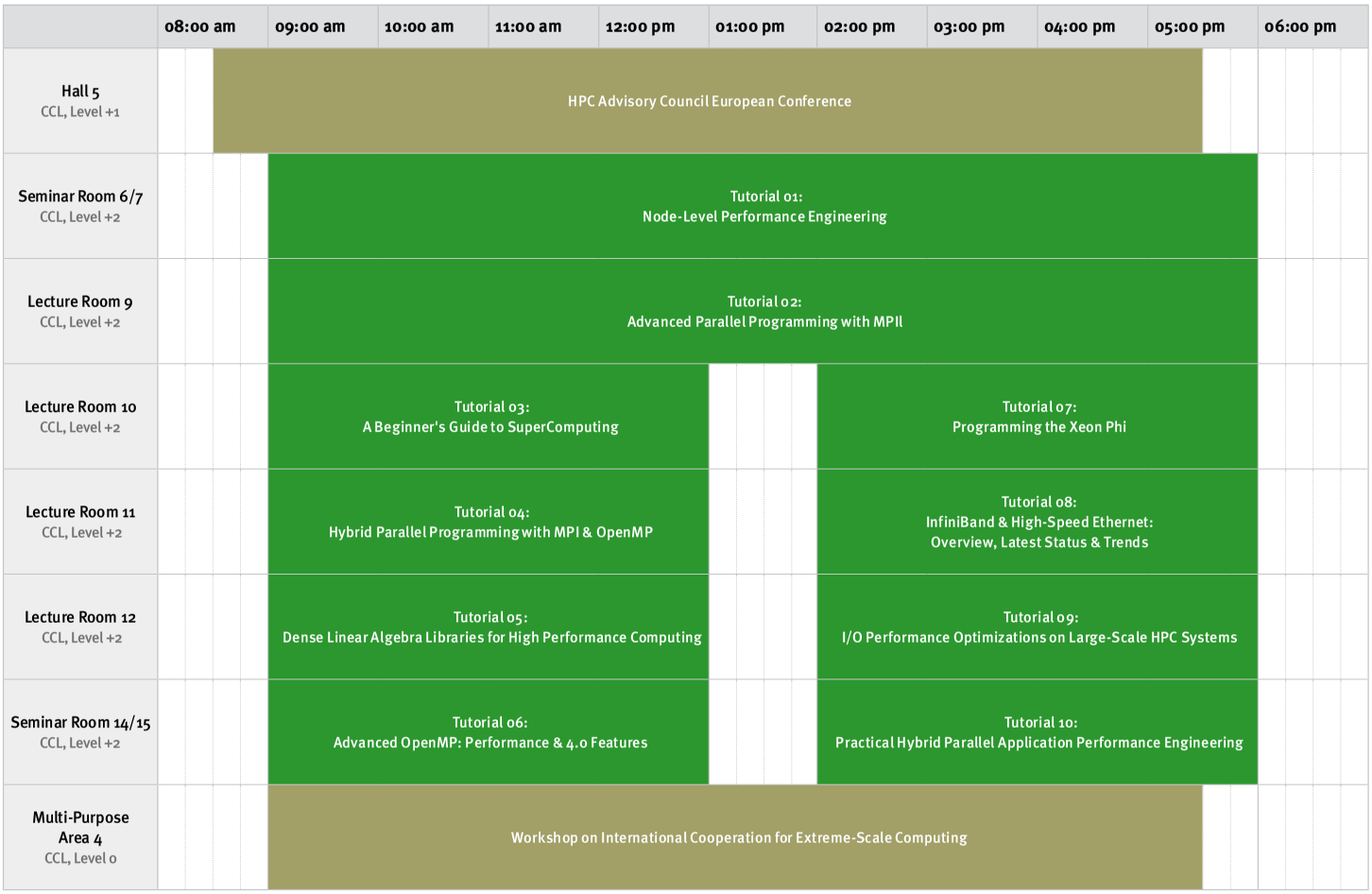
11 Schkeuditz, Rathausplatz
10 11 Wahren
12 Gohlis-Nord
4 Gohlis, Landsberger Str.
16 CCL Leipzig
9 Thekla
1 Mockau, Post
3 Taucha, An der Bürgerruhe
8 Paunsdorf-Nord
3 7 Sommerfeld
7 Böhlitz-Ehrenberg, Burghausener Str.
Hauptbahnhof
14 Zug S MRB2 S10 MRB11
72 73 89 100 131 190 196 197
12 Johannisplatz
15 Miltitz
8 Grünau-Nord
14 S-Bf. Plagwitz
2 Grünau-Süd
1 Lausen
3 Knautkleeberg
9 Markkleeberg-West
11 Markkleeberg-Ost, Schillerplatz
10 16 Lößnig
4 Stötteritz, Holzhausen Straße
2 Naunhofer Straße
15 2 Meusdorf
Elster-Saale-Kanal
Luppe
Weiße Elster
Pleiße
Elsterbecken
Cospudener See
Markkleeberger See
Silbersee
Zoo
Leutzsch, Strbf.
Lindenau, Nathanaelkirche
Lindenauer Markt
Wiederitzsch-Nord, Autohaus
Bf. Messe
Sachsenpark
BMW Werk, Zentralgebäude
BMW Werk, Tor 1
Plaußig, Gewerbegebiet
Tauche, Bahnhof
Tauche, Lindnerstr.
Tauche, Am Obstgut
Portitz, Teichsiedlung
Mockau-West
Mockau, Kirche
Mockau, Slevogtstr.
Möckern, Historischer Strbf.
Möckern, Slevogtstr.
Gohlis-Süd, Natonekstr.
Fliederhof
Schönefeld, Volbedingstr.
Paunsdorf, Strbf.
Paunsdorf-Center
Sellerhausen
Stannebeinplatz
Leipziger Ost
Volksgarten
Wintergartenstr./Hbf.
Goerdelerring
Thomaskirche
Augustusplatz
Wilhelm-Leuschner-Platz
Neues Rathaus
Markt
Gerichtsweg
Reudnitz, Koehlerstr.
Stünz
Paunsdorf, Friedhof
Paunsdorf, Barbarastr.
Paunsdorf, Ostheimstr.
Paunsdorf, Geithainer Str.
Paunsdorf, Emmaustr.
Paunsdorf, Engelsdorf
Paunsdorfer Allee/ Permoserstr.
Paunsdorfer Str.
Paunsdorfer Allee, Bf. Heiterblick
Bf. Heiterblick
Heiterblick, Teslastr.
Arcus Park
Hohenichelstr.
Hermelinstr.
Heisenbergstr.
Bautzner Str.
Schwanenstr.
Permoser-/Hohenichelnstr.
Permoser-/Torgauer Str.
Th.-Heuss-Str.
Güterbahnhofstr.
Ahornstr.
Am Vorwerk
Sternenstr.
Sabinenstr.
Abzw. Dreieckssiedlung
Engelsdorf, Kirchweg
Engelsdorf, Gymnasium
Engelsdorf, Kirche
Engelsdorf, Ärztehaus
Engelsdorfer Str.
Borsdorf, H.-Heine-Str.
Borsdorf, Bf.
Althen, Freundschaftsring
Althen, Dorfgerstr.
Althener Anger
Althen, Leipziger Str.
Zweenfurth, Großer Weg
Zweenfurth, Hirschfelder Str.
Hirschfeld
Klemperestr.
Werkstättenstr.
Opalstr.
Hasenheide
Mölkau, Dorfpl.
Mölkau, Gemeindeamt
Am Bahndamm
Mölkauer Str.
Lintacher Str.
Baalsdorfer Str.
Baalsdorf, Kirchweg
Zauchweg
Klein-pösna
Branditzer Str.
Bf. Mölkau
Gottschalkstr.
Schulstr.
Handwerkerhof
An den Platanen
Mölkau Süd
K.-Friedrich-Str.
Oberdorfstr.
Kärnerstr.
Holzhausen, Hauptstr.
Holzhausen, Sophienhöhe
Holzhausen
Bf. Holzhausen
Sächsisches Haus
W.-Heise-Str.
Herzzentrum
Strümpellstr.
Russenstr.
Feldstr.
Schweizerbogen
Franzosenallee
Roseggerstr.
Probstheida, Buswendestelle
Probstheida
Prager/Russenstr.
Südfriedhof
Connewitzer Str.
Connewitz, Kreuz
Connewitz
Meusdorfer Str.
Triftweg
An der Märchenwiese
Moritz-Hof
Höltystr.
Monarchenhügel
Roßstr.
Liebertwolkwitzer Markt
Bf. Liebertwolkwitz
An der Brauerei
Pahlenweg
Schwarzenbergweg
Schwarzes Ross
Zur alten Sandgrube
An den Badeanlagen
Liebertwolkwitz, Störmthaler Str.
Eulengraben
Großpösna, Neue Gaststätte
Großpösna, Brauteich
Großpösna, Auensiedlung
Seifertshain
Feldstr.
Fuchshainer Str.
Alter Gasthof
Pösna-Park
Damaschkestr.
Wachau, Gewerbegebiet
Wachau, Atlanta Hotel
Wachau, Am Bach
An der Hohle
Markkleeberg, Bf.
Markkleeberg, Seepromenade
Markkleeberg, H.-Heine-Str.
Markkleeberg, Goldene Höhe
Markkleeberg, Seenallee
Markkleeberg, Schulstr.
Markkleeberg, Virchowstr.
Markkleeberg, Forsthaus Raschwitz
Markkleeberg, Mehringstr.
Markkleeberg, Sonnensiedlung
Markkleeberg, Gautzscher Pl.
Markkleeberg, Ring
Markkleeberg, Dölitz, Strbf.
Markkleeberg, Am Eichwinkel
Markkleeberg, Energiestr.
Markkleeberg, Parkstr.
Markkleeberg, Leinestr.
Markkleeberg, Raschwitzer Str.
Markkleeberg, Friederikenstr.
Markkleeberg, Dankwartstr.
Markkleeberg, Hilbrandstr.
Markkleeberg, Koburger Brücke
Markkleeberg, Wildpark
Markkleeberg, Cospudener See, Nordstrand
Markkleeberg, Cospudener See, EXPO-Pavillon
Markkleeberg, Cospudener See, Erlebnisachse
Markkleeberg, Cospudener See, Seumestr.
Markkleeberg, Albersdorfer Str.
Markkleeberg, Fortunabadstr.
Markkleeberg, Knautnaundorf, Mühlenweg
Markkleeberg, Rehbach
Markkleeberg, Th.-Müntzer-Siedlung
Markkleeberg, Knauthain, Schönbergstr.
Markkleeberg, Knauthain, Am Weiher
Markkleeberg, Hartmannsdorf, Gasthof
Markkleeberg, Hartmannsdorf, Erikenstr.
Markkleeberg, Hartmannsdorf, Azaleenstr.
Markkleeberg, Abzweig nach Hartmannsdorf
Markkleeberg, Am Klucksgraben
Markkleeberg, Knautnaundorf, Rundkapellenweg
Markkleeberg, Knautnaundorf, Werkstr.
Markkleeberg, Gefrierzentrum
Markkleeberg, Großzschocher, A.-Zickmantel-Str.
Markkleeberg, Großzschocher, G.-Ellrodt-Str.
Markkleeberg, Großzschocher
Markkleeberg, Arthur-Nagel-Str.
Markkleeberg, Kunzestr.
Markkleeberg, Lauerscher Weg
Markkleeberg, Hutthenstr.
Markkleeberg, Bismarckstr.
Markkleeberg, Wasserwerk Windorf
Markkleeberg, Raiffeisenstr.
Markkleeberg, Siedlung Florian Geyer
Markkleeberg, Gärtnerei
Markkleeberg, Bf. Großzschocher
Markkleeberg, Lausner Bogen
Markkleeberg, Lausner Weg
Markkleeberg, Dreieckweg
Markkleeberg, Weidenweg
Markkleeberg, Am Sonneneck
Markkleeberg, Regenbogen
Markkleeberg, Lausen, Wolkenweg
Markkleeberg, Lausen, Ärztehaus
Markkleeberg, Am Silo
Markkleeberg, Lausen
Markkleeberg, Ratzelbogen
Markkleeberg, Stuttgarter Allee
Markkleeberg, Schönauer/Ratzelstr.
Markkleeberg, Schönauer Lützner Str.
Markkleeberg, Schönauer Ring
Markkleeberg, Schönauer Allee-Center
Markkleeberg, Schönau, Weißdornstr.
Markkleeberg, Schönau, Kirche
Markkleeberg, Grünauer Allee
Markkleeberg, Parkallee
Markkleeberg, Elster-Passage
Markkleeberg, Naumburger Str.
Markkleeberg, Markranstädter Str.
Markkleeberg, Siemensstr.
Markkleeberg, Adler
Markkleeberg, Rödelstr.
Markkleeberg, Rochlitzstr.
Markkleeberg, Antonien-Gießerstr.
Markkleeberg, Schwartzestr.
Markkleeberg, Kötzschauer Str.
Markkleeberg, Diezmannstr.
Markkleeberg, Ringstr.
Markkleeberg, Alte Salzstr.
Markkleeberg, Stieglitzstr.
Markkleeberg, Schleußig, Karlbrücke
Markkleeberg, E.-Zeigner-Allee
Markkleeberg, Holbeinstr.
Markkleeberg, Klingerweg
Markkleeberg, Felsenkeller
Markkleeberg, Nonnenstr.
Markkleeberg, Marschnerstr.
Markkleeberg, Lützner/Merseburger Str.
Markkleeberg, K.-Heine-/Merseburger Str.
Markkleeberg, K.-Heine-/Gießerstr.
Markkleeberg, Henriettenstr.
Markkleeberg, Gröpplerstr.
Markkleeberg, Radiusstr.
Markkleeberg, Saarländer Str.
Markkleeberg, Demmeringstr.
Markkleeberg, Hafenbecken Lindenau
Markkleeberg, Lindenau, Dr.-H.-Duncker-Str.
Markkleeberg, Lindenau, Bushof
Markkleeberg, Plaut-/Schomburgkstr.
Markkleeberg, Plaustr., KANN-Beton
Markkleeberg, Morgensternstr.
Markkleeberg, Miltitz, Friedhof
Markkleeberg, Miltitzer Str.
Markkleeberg, Siriusweg
Markkleeberg, Uranusstr.
Markkleeberg, Saturnstr.
Markkleeberg, Jupiterstr.
Markkleeberg, Kiewer Str.
Markkleeberg, Kaufland
Markkleeberg, Am Kirschberg
Markkleeberg, Großmiltitzer Str.
Markkleeberg, Geschw.-Scholl-Str.
Markkleeberg, Am kleinen Feld
Markkleeberg, Plovdiver Str.
Markkleeberg, Selliner Str., Gesundheitszentrum
Markkleeberg, Binzer Str.
Markkleeberg, Straße am See
Markkleeberg, Am Anger
Markkleeberg, An der Schachtbahn
Markkleeberg, Markranstädt, Bahnhof
Markkleeberg, Markranstädt, Ostsiedlung
Markkleeberg, Markranstädt, Schkeuditzer Str.
Markkleeberg, Robert-Koch-Str.
Markkleeberg, Kulkwitzer See
Markkleeberg, Am Schachtbahn
Markkleeberg, Gaststätte am See
Markkleeberg, Kulkwitz, Göhrenzer Str.
Markkleeberg, Göhrenz, Schachthäuser
Markkleeberg, Göhrenz, Albersdorfer Str.
Markkleeberg, Waldsiedlung
Markkleeberg, Göhrenz
Markkleeberg, Albersdorfer Str.
Markkleeberg, Hafenbecken Lindenau
Markkleeberg, Lindenauer Hafen
Markkleeberg, Lindenau, Hopfenweg
Markkleeberg, Lindenau, Friedenseiche
Markkleeberg, Lindenau, Schmiede
Markkleeberg, Frankenheim, Gewerbegebiet
Markkleeberg, Frankenh., Hopfenweg
Markkleeberg, Frankenh., Friedenseiche
Markkleeberg, Rückmarsdorf, Einkaufspassage
Markkleeberg, Rückmarsdorf., Bürgeramt
Markkleeberg, Großer Marktweg
Markkleeberg, Bf. Rückmarsdorf
Markkleeberg, Rückmarsdorf, Zum Bahnhof
Markkleeberg, Löwencenter
Markkleeberg, Miltitzer Str.
Markkleeberg, Zur Kaninchenfarm
Markkleeberg, Diakonissenhaus
Markkleeberg, Weinbergstr.
Markkleeberg, Wielandstr.
Markkleeberg, G.-Schwarz-/Merseburger Str.
Markkleeberg, Lindenau, Friedhof
Markkleeberg, E.-Keil-Str.
Markkleeberg, Feuerbachstr.
Markkleeberg, Wittestr.
Markkleeberg, Pfingstweide
Markkleeberg, P.-Michael-Str.
Markkleeberg, Leutzsch Arkaden
Markkleeberg, Rathaus Leutzsch
Markkleeberg, Ph.-Reis-Str.
Markkleeberg, Rathenaustr.
Markkleeberg, Mathiesenstr.
Markkleeberg, O.-Schmiedt-Str.
Markkleeberg, Kietzstr.
Markkleeberg, Böhlitz-Ehrenberg, Breitscheidhof
Markkleeberg, W.-Winkler-Str.
Markkleeberg, Goethepl.
Markkleeberg, H.-Heine-Str.
Markkleeberg, L.-Jahn-Str.
Markkleeberg, Forstweg
Markkleeberg, Gundorf, Friedhof
Markkleeberg, Burghausen
Markkleeberg, Am Sportpark
Markkleeberg, Südstr.
Markkleeberg, L.-Meitner-Str.
Markkleeberg, Barnecker Str.
Markkleeberg, Bf. Leutzsch
Markkleeberg, Auensee
Markkleeberg, Annaberger Str.
Markkleeberg, Möckern, Historischer Strbf.
Markkleeberg, E.-von-Brockdorff-Str.
Markkleeberg, Faradaystr.
Markkleeberg, Seelenbinderstr.
Markkleeberg, Dantestr.
Markkleeberg, Huygensstr.
Markkleeberg, Wiederitzscher Str.
Markkleeberg, Menckestr.
Markkleeberg, Fritz-Seger-Str.
Markkleeberg, Gohlis-Süd, Natonekstr.
Markkleeberg, Stallbaumstr.
Markkleeberg, Parthe
Markkleeberg, Am Mückenschlösschen
Markkleeberg, Nordplatz
Markkleeberg, Hbf., Westseite
Markkleeberg, Lortzingstr.
Markkleeberg, Leibnizstr.
Markkleeberg, Gottschedstr.
Markkleeberg, Reichsstr.
Markkleeberg, Goethestr.
Markkleeberg, Citytunnel (im Bau)
Markkleeberg, Sportforum
Markkleeberg, Waldplatz
Markkleeberg, Anger-Crottendorf
Markkleeberg, Anger-Brücke, Strbf.
Markkleeberg, Nathanaelkirche
Markkleeberg, Lindenau, Nathanaelkirche
Markkleeberg, Merseburger Schomburgkstr.
Markkleeberg, Lindenauer Markt
Markkleeberg, Gohlis-Nord, Virchowstr.
Markkleeberg, Gohlis-Nord, Coppistr.
Markkleeberg, Gohlis-Nord, Virchow-/Coppistr.
Markkleeberg, Gohlis-Nord, Eutritzscher Markt
Markkleeberg, Gohlis-Nord, Eutritzscher Zentrum
Markkleeberg, Gohlis-Nord, Kleiststr.
Markkleeberg, Gohlis-Nord, Theresienstr.
Markkleeberg, Gohlis-Nord, Hartzstr.
Markkleeberg, Gohlis-Nord, Maximilianallee
Markkleeberg, Gohlis-Nord, Schönefelder Str.
Markkleeberg, Gohlis-Nord, Hamburger Str.
Markkleeberg, Gohlis-Nord, Wilhelminenstr.
Markkleeberg, Gohlis-Nord, Wittenberger Str.
Markkleeberg, Gohlis-Nord, Apelstr.
Markkleeberg, Gohlis-Nord, Chausseehaus
Markkleeberg, Gohlis-Nord, Wilhelm-Liebknecht-Platz
Markkleeberg, Gohlis-Nord, Hbf. (Ost)
Markkleeberg, Gohlis-Nord, Hbf. (Ostseite)
Markkleeberg, Gohlis-Nord, Mosenthinstr.
Markkleeberg, Gohlis-Nord, Gottschallstr.
Markkleeberg, Gohlis-Nord, Viertelsweg
Markkleeberg, Gohlis-Nord, Beyerleinstr.
Markkleeberg, Gohlis-Nord, Olbrichtstr.
Markkleeberg, Gohlis-Nord, Fr.-Mehring-Str.
Markkleeberg, Gohlis-Nord, Bremer Str.
Markkleeberg, Gohlis-Nord, Landsberger/M.-Liebermann-Str.
Markkleeberg, Gohlis-Nord, Stern-siedlung Nord
Markkleeberg, Gohlis-Nord, Landsberger/Bahnhofstr.
Markkleeberg, Gohlis-Nord, Siedlerweg
Markkleeberg, Gohlis-Nord, Martinshöhe
Markkleeberg, Gohlis-Nord, Melissenweg
Markkleeberg, Gohlis-Nord, Bf. Wiederitzsch
Markkleeberg, Gohlis-Nord, Dachauer Str.
Markkleeberg, Gohlis-Nord, Klinikum St. Georg
Markkleeberg, Gohlis-Nord, Hornbach Baumarkt
Markkleeberg, Gohlis-Nord, Delitzscher/Essener Str.
Markkleeberg, Gohlis-Nord, Zschortauer Str.
Markkleeberg, Gohlis-Nord, Wiederitzsch Mitte
Markkleeberg, Gohlis-Nord, G.-Herweghstr.
Markkleeberg, Gohlis-Nord, Wiederitzscher Landstr.
Markkleeberg, Gohlis-Nord, Wiederitzsch, Bürgeramt
Markkleeberg, Gohlis-Nord, Salzhandelsstr.
Markkleeberg, Gohlis-Nord, Breitenfeld, Gewerbegebiet
Markkleeberg, Gohlis-Nord, Breitenfeld, Tierheim
Markkleeberg, Gohlis-Nord, Breitenfeld, Parkring
Markkleeberg, Gohlis-Nord, Breitenfeld, Kutscherweg
Markkleeberg, Gohlis-Nord, An der Hufschmiede
Markkleeberg, Gohlis-Nord, Zur Lindenhöhe
Markkleeberg, Gohlis-Nord, Lindenallee
Markkleeberg, Gohlis-Nord, Lindenthal, An der Windmühle
Markkleeberg, Gohlis-Nord, An der Schule
Markkleeberg, Gohlis-Nord, Lindenthaler Hauptstr.
Markkleeberg, Gohlis-Nord, Lange Trift
Markkleeberg, Gohlis-Nord, Äußerer Zeisigweg
Markkleeberg, Gohlis-Nord, Zeisigweg
Markkleeberg, Gohlis-Nord, Buchfinkenweg
Markkleeberg, Gohlis-Nord, Lindenthal, Gemeindeamt
Markkleeberg, Gohlis-Nord, Sophienstr.
Markkleeberg, Gohlis-Nord, R.-Breitscheid-Str.
Markkleeberg, Gohlis-Nord, W.-Pfennig-Str.
Markkleeberg, Gohlis-Nord, Wilhelmstr.
Markkleeberg, Gohlis-Nord, Radefeld, Transport & Service
Markkleeberg, Gohlis-Nord, Radefeld, GVZ/Porsche
Markkleeberg, Gohlis-Nord, Radefeld, GVZ/Deutsche Post AG
Markkleeberg, Gohlis-Nord, Radefeld, GVZ/Am Exer
Markkleeberg, Gohlis-Nord, S-Bf. Schkeuditz
Markkleeberg, Gohlis-Nord, S-Bf. Lützschena
Markkleeberg, Gohlis-Nord, S-Bf. Wahren
Markkleeberg, Gohlis-Nord, Altscherbitz
Markkleeberg, Gohlis-Nord, Paetzstr.
Markkleeberg, Gohlis-Nord, Schkeuditz, Gartenstadt
Markkleeberg, Gohlis-Nord, Modelwitz
Markkleeberg, Gohlis-Nord, Hänichen, Bismarckturm
Markkleeberg, Gohlis-Nord, Freirodaer Weg
Markkleeberg, Gohlis-Nord, Stahmelner Allee
Markkleeberg, Gohlis-Nord, Stahmeln
Markkleeberg, Gohlis-Nord, Pittlerstr.
Markkleeberg, Gohlis-Nord, Leipzig/Halle Flughafen
Markkleeberg, Gohlis-Nord, 504 > Halle (Saale)
Markkleeberg, Gohlis-Nord, S10 > Halle (Saale)
Markkleeberg, Gohlis-Nord, 190 > Delitzsch
Markkleeberg, Gohlis-Nord, 251 > Bitterfeld / Wittenberg
Markkleeberg, Gohlis-Nord, 196 > Bad Düben
Markkleeberg, Gohlis-Nord, 582 > Weißenfels
Markkleeberg, Gohlis-Nord, 163 > Alt-ranstädt
Markkleeberg, Gohlis-Nord, 165 > Lützen
Markkleeberg, Gohlis-Nord, 161 > Kulkwitz / Schönau
Markkleeberg, Gohlis-Nord, 164 > Kulkwitz / Kitzen
Markkleeberg, Gohlis-Nord, 61 > Schkeitbar
Markkleeberg, Gohlis-Nord, 164 > Schkeitbar / Kitzen
Markkleeberg, Gohlis-Nord, 131 > Merseburg / Günthersdorf, Nova Eventis
Markkleeberg, Gohlis-Nord, 130 > Markranstädt
Markkleeberg, Gohlis-Nord, 130 > Rückmarsdorf
Markkleeberg, Gohlis-Nord, 163 > Günthersdorf
Markkleeberg, Gohlis-Nord, 118 > Belantis (saisonale Linie)
Markkleeberg, Gohlis-Nord, 550 > Gera
Markkleeberg, Gohlis-Nord, 161 > Kulkwitz / Schönau
Markkleeberg, Gohlis-Nord, 164 > Kulkwitz / Kitzen
Markkleeberg, Gohlis-Nord, 1 > Kitzen / Pegau
Markkleeberg, Gohlis-Nord, MRB2 > Borna 530 > Altenburg
Markkleeberg, Gohlis-Nord, 550 > Gera
Markkleeberg, Gohlis-Nord, 107 > Zwenkau
Markkleeberg, Gohlis-Nord, 108 > Großdälzten
Markkleeberg, Gohlis-Nord, 141 > Espenhain / Borna
Markkleeberg, Gohlis-Nord, 143 > Güldengossa / Liebertwolkwitz
Markkleeberg, Gohlis-Nord, 525 > Geithain / Chemnitz
Markkleeberg, Gohlis-Nord, MRB11 500 > Wurzen 500 > Riesa 506 > Grimma
Markkleeberg, Gohlis-Nord, 195/197 > Eilenburg
Markkleeberg, Gohlis-Nord, 173-175 > Borsdorf
Markkleeberg, Gohlis-Nord, 176 > Taucha
Markkleeberg, Gohlis-Nord, 176 > Hohenheida
Markkleeberg, Gohlis-Nord, 197 > Hbf. (Ostseite)
Markkleeberg, Gohlis-Nord, 215/257/304
Markkleeberg, Gohlis-Nord, 500/506
Markkleeberg, Gohlis-Nord, 525
Markkleeberg, Gohlis-Nord, 172
Markkleeberg, Gohlis-Nord, 173-175 > Taucha
Markkleeberg, Gohlis-Nord, 75 > Naunhof
Markkleeberg, Gohlis-Nord, 143 > Güldengossa / Wachau
Markkleeberg, Gohlis-Nord, 172
Markkleeberg, Gohlis-Nord, 175
Markkleeberg, Gohlis-Nord, 176
Markkleeberg, Gohlis-Nord, 525 > Geithain / Chemnitz
Markkleeberg, Gohlis-Nord, 141 > Espenhain / Borna
Markkleeberg, Gohlis-Nord, 143 > Güldengossa / Liebertwolkwitz
Markkleeberg, Gohlis-Nord, 107 > Zwenkau
Markkleeberg, Gohlis-Nord, 108 > Großdälzten
Markkleeberg, Gohlis-Nord, 118 > Belantis (saisonale Linie)
Markkleeberg, Gohlis-Nord, 550 > Gera
Markkleeberg, Gohlis-Nord, MRB2 > Borna 530 > Altenburg
Markkleeberg, Gohlis-Nord, 1 > Kitzen / Pegau
Markkleeberg, Gohlis-Nord, 161 > Kulkwitz / Schönau
Markkleeberg, Gohlis-Nord, 164 > Kulkwitz / Kitzen
Markkleeberg, Gohlis-Nord, 61 > Schkeitbar
Markkleeberg, Gohlis-Nord, 164 > Schkeitbar / Kitzen
Markkleeberg, Gohlis-Nord, 131 > Merseburg / Günthersdorf, Nova Eventis
Markkleeberg, Gohlis-Nord, 130 > Markranstädt
Markkleeberg, Gohlis-Nord, 130 > Rückmarsdorf
Markkleeberg, Gohlis-Nord, 163 > Günthersdorf
Markkleeberg, Gohlis-Nord, 582 > Weißenfels
Markkleeberg, Gohlis-Nord, 163 > Alt-ranstädt
Markkleeberg, Gohlis-Nord, 165 > Lützen
Markkleeberg, Gohlis-Nord, 504 > Halle (Saale)
Markkleeberg, Gohlis-Nord, S10 > Halle (Saale)
Markkleeberg, Gohlis-Nord, 190 > Delitzsch
Markkleeberg, Gohlis-Nord, 251 > Bitterfeld / Wittenberg
Markkleeberg, Gohlis-Nord, 196 > Bad Düben



Program | Sunday, June 22
Tutorials & Satellite Events

(in chronological order per room)

Hall 5, CCL, Level +1

08:30 am - 05:30 pm HPC Advisory Council European Conference — Hall 5

Seminar Room 6/7, CCL, Level +2

09:00 am - 06:00 pm Tutorial 01 — Seminar Room 6/7

Node-Level Performance Engineering

Presenters: *Georg Hager, RRZE*
Jan Treibig, RRZE
Gerhard Wellein, RRZE & University of Erlangen-Nuremberg

Lecture Room 9, CCL, Level +2

09:00 am - 06:00 pm Tutorial 02 — Lecture Room 9

Advanced Parallel Programming with MPI

Presenters: *Pavan Balaji, Argonne National Laboratory*
Torsten Hoefler, ETH Zurich

Lecture Room 10, CCL, Level +2

09:00 am - 01:00 pm Tutorial 03 — Lecture Room 10

A Beginner's Guide to SuperComputing

Presenters: *Andrew Lumsdaine, Indiana University*
Thomas Sterling, Indiana University

02:00 pm - 06:00 pm Tutorial 07 — Lecture Room 10

Programming the Xeon Phi

Presenters: *John Cazes, TACC*
Lars Koesterke, TACC
Lucas A. Wilson, TACC

Lecture Room 11, CCL, Level +2

09:00 am - 01:00 pm Tutorial 04 — Lecture Room 11

Hybrid Parallel Programming with MPI & OpenMP

Presenters: *Georg Hager, RRZE*
Gabriele Jost, Supersmith
Rolf Rabenseifner, HLRS

02:00 pm - 06:00 pm Tutorial 08 — Lecture Room 11

InfiniBand & High-Speed Ethernet: Overview, Latest Status & Trends

Presenters: *Dhabaleswar K. Panda, Ohio State University*
Hari Subramoni, Ohio State University

Lecture Room 12, CCL, Level +2

09:00 am - 01:00 pm Tutorial 05 — Lecture Room 12

Dense Linear Algebra Libraries for High Performance Computing

Presenters: *Jack Dongarra, University of Tennessee & ORNL*
Jakub Kurzak, University of Tennessee
Hatem Ltaief, KAUST

02:00 pm - 06:00 pm Tutorial 09 — Lecture Room 12

I/O Performance Optimizations on Large-Scale HPC Systems

Presenters: *Scott Klasky, ORNL*
Qing Liu, ORNL
Norbert Podhorskzki, ORNL

Seminar Room 14/15, CCL, Level +2

09:00 am - 01:00 pm Tutorial 06 — Seminar Room 14/15

Advanced OpenMP: Performance & 4.0 Features

Presenters: *Bronis R. de Supinski, LLNL*
Michael Klemm, Intel
Eric Stotzer, Texas Instrument
Christian Terboven, RWTH Aachen University

02:00 pm - 06:00 pm Tutorial 10 — Seminar Room 14/15

Practical Hybrid Parallel Application Performance Engineering

Presenters: *Markus Geimer, JSC*
Yury Oleynik, TU München
Sameer Shende, University of Oregon
Ronny Tschüter, TU Dresden

Multi-Purpose Area 4, CCL, Level 0

09:00 am - 05:30 pm Workshop on International Cooperation for Extreme-Scale Computing — Multi-Purpose Area 4

Chairs: *James Ang, Sandia National Laboratories*
Pete Beckman, Argonne National Laboratory
Thomas Sterling, Indiana University

Coffee & Lunch Breaks

08:00 am – 10:30 am	**Welcome Coffee**	CCL, Level -1
11:00 am – 11:30 am	**Coffee Break**	CCL, Level +2
01:00 pm – 02:00 pm	**Lunch**	CCL, Level +2
04:00 pm – 04:30 pm	**Coffee Break**	CCL, Level +2

Program | Monday, June 23
Conference & Exhibition

(in chronological order per room)

Hall 1, CCL, Level +1

09:00 am - 10:30 am ■ **Opening Session** Hall 1

Chairs: *Martin Meuer, Prometeus*
Thomas Meuer, Prometeus

09:00 am - 09:15 am Welcome & Introduction to ISC'14
Martin Meuer, Prometeus
Thomas Meuer, Prometeus

09:15 am - 09:25 am Welcome Address
tba

09:25 am - 09:30 am GAUSS Award & ISC PRACE Award
Bernd Mohr, Prometeus & JSC

09:30 am - 09:50 am TOP500 Awarding
Jack Dongarra, University of Tennessee & ORNL
Martin Meuer, Prometeus
Erich Strohmaier, LBNL

09:50 am - 10:15 am Highlights of the 43rd TOP500 List
Erich Strohmaier, LBNL

10:15 am - 10:30 am Remembering ISC Founder Hans Meuer
Horst Gietl, Prometeus

11:00 am - 12:00 pm ■ **ISC'14 Conference Keynote** Hall 1

Chair: *Manuel Peitsch, PMI R&D, SIB & University of Basel*

11:00 am - 12:00 pm Large-Scale Computing in Biomedicine & Bioengineering
Klaus Schulten, University of Illinois at Urbana-Champaign

01:00 pm - 03:00 pm ■ **ISC Vendor Showdown 01** Hall 1

Chairs: *Rupak Biswas, NASA Ames Research Center*
Addison Snell, Intersect360 Research

01:00 pm - 01:05 pm Introduction
Rupak Biswas, NASA Ames Research Center
Addison Snell, Intersect360 Research

01:05 pm - 01:17 pm Intel
Charles Wuischpard, Intel

01:17 pm - 01:29 pm Supermicro
Tau Leng, Supermicro

01:29 pm - 01:41 pm Mellanox
Gilad Shainer, Mellanox

01:41 pm - 01:53 pm Huawei
Francis Lam, Huawei

01:53 pm - 02:05 pm Cray
Barry Bolding, Cray

02:05 pm - 02:17 pm NVIDIA
Steve Oberlin, NVIDIA

02:17 pm - 02:29 pm Fujitsu
Toshiyuki Shimizu, Fujitsu

02:29 pm - 02:41 pm DataDirect Networks
James Coomer, DDN

02:41 pm - 02:53 pm IBM
Chris Maher, IBM

02:53 pm - 03:00 pm Voting Results & Awarding
Rupak Biswas, NASA Ames Research Center
Addison Snell, Intersect360 Research

04:00 pm - 06:00 pm ■ **ISC Vendor Showdown 02** Hall 1

Chairs: *Frank Behrendt, TU Berlin*
Peter ffoulkes, 451 Research

04:00 pm - 04:05 pm Introduction
Frank Behrendt, TU Berlin
Peter ffoulkes, 451 Research

04:05 pm - 04:17 pm Bull
Jean-Pierre Panziera, Bull

04:17 pm - 04:29 pm Samsung
Thomas Arenz, Samsung

04:29 pm - 04:41 pm T-Platforms
Natalia Zheleznykh, T-Platforms

04:41 pm - 04:53 pm Toshiba
Rainer W. Kaese, Toshiba

04:53 pm - 05:05 pm Hewlett-Packard
Scott Misage, HP

05:05 pm - 05:17 pm Dell
Martin Hilgeman, Dell

05:17 pm - 05:29 pm RSC
Alexander Moskovsky, RSC

05:29 pm - 05:41 pm NEC
Rudolf Fischer, NEC

05:41 pm - 05:53 pm D-Wave Systems
Murray Thom, D-Wave Systems

05:53 pm - 06:00 pm Voting Results & Awarding
Frank Behrendt, TU Berlin
Peter ffoulkes, 451 Research

06:15 pm - 06:45 pm ISC'14 Special: Accelerating Insights ... in the Technical Computing Transformation — Hall 1

Speaker: *Rajeeb Hazra, Intel*

Hall 2, CCL, Level +1

01:00 pm - 02:00 pm Visualization & Caves — Hall 2

Chair: *Uwe Wössner, HLRS*

01:00 pm - 01:30 pm Visual Analysis of Big Personal Health Data
Jürgen Schulze, UCSD

01:30 pm - 02:00 pm Interactive Parallel Visualisation & Remote Hybrid Rendering
Martin Aumüller, HLRS

02:00 pm - 03:00 pm Jet Engines Take Off in the Cloud – Lessons Learned (Panel) — Hall 2

Moderator: *Wolfgang Gentzsch, ISC Cloud & UberCloud Community & Marketplace*

Panelists: *Alexander Heine, CPU 24/7*
Matthias Reyer, CPU 24/7
Wim Slagter, ANSYS
Marius Swoboda, Rolls-Royce

04:00 pm - 05:00 pm Programming Models & Tools — Hall 2

Chair: *Barbara Chapman, University of Houston*

04:00 pm - 04:20 pm OpenACC & the Evolution of the Modern GPU
Duncan Poole, NVIDIA

04:20 pm - 04:40 pm Is PGAS Ready for Prime Time?
Michèle Weiland, EPCC

04:40 pm - 05:00 pm OpenMP 4.0 & Beyond
Christian Terboven, RWTH Aachen University

05:00 pm - 06:00 pm Young & Bright HPC Researchers — Hall 2

Chair: *Michael M. Resch, HLRS*

05:00 pm - 05:20 pm Evolutionary Adaptation of HPC Applications to Revolutionary System Changes
Hiroyuki Takizawa, Tohoku University

05:20 pm - 05:40 pm Attacks on Small Characteristic Finite Fields for Discrete Logarithm Cryptography
Jens Zumbrägel, TU Dresden

05:40 pm - 06:00 pm FLOPs & Bandwidth, Are We Measuring the Right Metrics?
Ian Karlin, LLNL

Hall 4, CCL, Level +1

01:00 pm - 03:00 pm Research Papers 01 – PRACE ISC & Gauss Awards — Hall 4

Chairs: *Michael M. Resch, HLRS*
Kenneth Ruud, University of Tromsø – The Arctic University of Norway

01:00 pm - 01:15 pm PRACE ISC Awarding
Kenneth Ruud, University of Tromsø – The Arctic University of Norway

01:15 pm - 02:00 pm PRACE ISC Award Winning Paper: Sustained Petascale Performance of Seismic Simulations with SeisSol on SuperMUC
Michael Bader, TU München

02:00 pm - 02:15 pm Gauss Awarding
Michael M. Resch, HLRS

02:15 pm - 03:00 pm Gauss Award Winning Paper: Exascale Radio Astronomy: Can We Ride the Technology Wave?
Erik Vermij, IBM

04:00 pm - 06:00 pm Research Poster Session — Hall 4

Chair: *Julian Kunkel, DKRZ*

04:00 pm - 04:04 pm ISC'14 Research Poster Awarding
Julian Kunkel, DKRZ

04:04 pm - 04:29 pm **(01)** ISC'14 Award Winning Poster: OpenFFT: An Open-Source Package for 3-D FFTs with Minimal Volume of Communication
Truong Vinh Truong Duy, University of Tokyo

04:29 pm - 04:36 pm **(02)** Application Tracking Using the Ichnaea Tools
Iain Miller, AWE

04:36 pm - 04:43 pm **(03)** Compression By Default – Reducing Total Cost of Ownership of Storage Systems
Michael Kuhn, University of Hamburg

04:43 pm - 04:50 pm **(04)** Coupled Simulation of External Aerothermodynamics & Internal Heat-and-Mass Transfer in Hypersonic Vehicle Composite Constructions
Andrey Zakharov, Bauman Moscow State Technical University

04:50 pm - 04:57 pm **(05)** Dynamic Parallelization of Computational Code as a Phase of Just-in-Time Compilation
Artem Lebedev, Rybinsk State Aviation Technical University

04:57 pm - 05:04 pm **(06)** Library for Accelerated Math Applications (LAMA) for Heterogeneous HPC Applications
Thomas Soddemann, Fraunhofer SCAI

05:04 pm - 05:11 pm **(07)** Managed Database Caching for Massively Parallel Sequence Alignment Tasks
Rikky Wenang Purbojati, Nanyang Technological University

05:11 pm - 05:18 pm (08) An Efficient Sparse Matrix Multiplication for Deep Neural Network-Based Applications
Renliang Zhao, University of Chinese Academy of Sciences

05:18 pm - 05:25 pm (09) Particle-in-Cell Plasma Simulation on CPUs, GPUs & Xeon Phi Coprocessors
Sergey Bastrakov, N.I. Lobachevsky University of Nizhni Novgorod

05:25 pm - 05:32 pm (10) Performance Implications of NUMA & Multi-Core in Lustre's Metadata Server
Konstantinos Chasapis, University of Hamburg

05:32 pm - 05:39 pm (11) Predictive Performance Tuning of OpenACC Accelerated Applications
Saber Feki, KAUST

05:39 pm - 05:46 pm (12) SIOX: An Infrastructure for Monitoring & Optimization of HPC-I/O
Michaela Zimmer, University of Hamburg

05:46 pm - 05:53 pm (13) Splotch on the Xeon Phi
Tim Dykes, University of Portsmouth

05:53 pm - 06:00 pm (14) The p196_mpi Implementation of the Reverse-And-Add Algorithm for the Palindrome Quest
Lukasz Swierczewski, Maria Curie-Skłodowska University

Hall 4 Foyer, CCL, Level +1

01:00 pm - 06:00 pm ■ **Research Posters & HPC in Asia Posters** Hall 4 Foyer

For a complete list of the Research Posters and HPC in Asia Posters on display at ISC'14, please refer to pages 29/30 and 58-60 respectively.

Hall 5, CCL, Level +1

01:00 pm - 02:00 pm ■ **BoF 01: High Performance & High Productivity Computing in the Enterprise** Hall 5

Presenter: *Chris Gottbrath, Rogue Wave Software*

02:00 pm - 03:00 pm ■ **BoF 02: Wrangler & DSSD: A New Generation of Data Intensive Supercomputing** Hall 5

Presenters: *Chris Jordan, TACC*
Dan Stanzione, University of Texas at Austin

04:00 pm - 05:00 pm ■ **BoF 03: Towards More Holistic & Finer-Grained Power Measurement of Supercomputers** Hall 5

Presenters: *Natalie Bates, EE HPC WG*
Wu Feng, Virginia Tech
Erich Strohmaier, LBNL

05:00 pm - 06:00 pm ■ **BoF 04: Eighth Graph500 List** Hall 5

Presenters: *David A. Bader, Georgia Tech*
Torsten Hoefler, ETH Zurich
Andrew Lumsdaine, Indiana University
Richard Murphy, Micron Technology
Marc Snir, Argonne National Laboratory & University of Illinois at Urbana-Champaign

Booth #660, Exhibition Hall, Level 0

03:15 pm - 04:30 pm ■ **HPC Startups: Innovation Brought to Life** Booth #660, Exhibition Hall

Chair: *Michael Feldman, Intersect360 Research*
Speakers: *Christiaan Best, Green Revolution Cooling*
Wolfgang Gentzsch, ISC Cloud & UberCloud Community & Marketplace
Ulrich Krackhardt, Extoll
Andreas Olofsson, Adapteva
Oliver Pell, Maxeler Technologies

Exhibition Hall, Level 0

03:00 pm - 08:30 pm ■ **Exhibition** Exhibition Hall

For the exhibition floorplan and the exhibitor listing, please refer to the Pocket Guide, which you will find on page 2 of this Conference & Exhibition Guide; the Pocket Guide is also available at the Registration Counter (CCL, Level -1), the Information Counter (CCL, Level 0), and throughout the CCL Congress Center.

06:30 pm - 08:30 pm ■ **ISC Welcome Party** Exhibition Hall

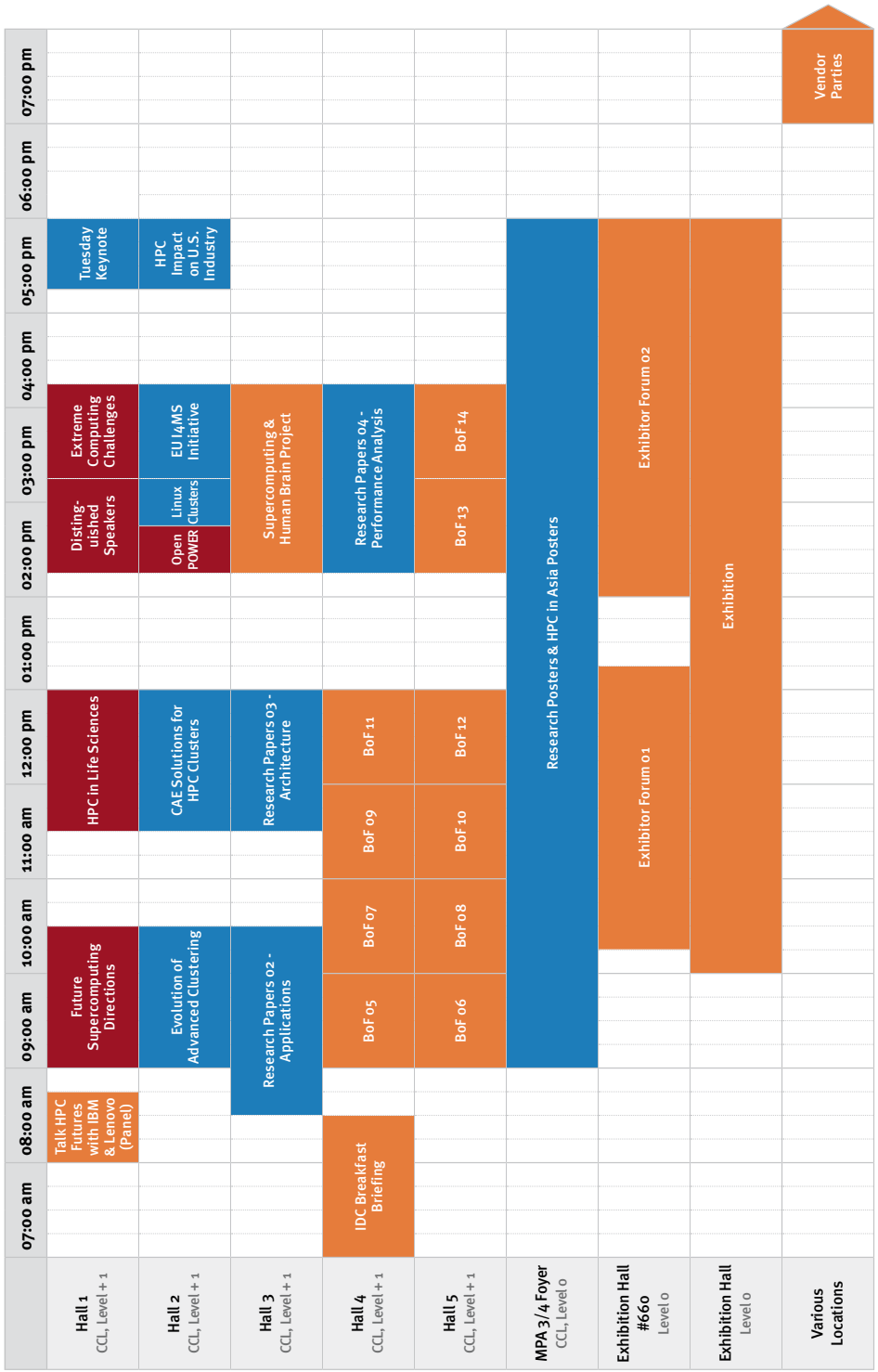
To welcome all attendees to ISC'14 and to mark the opening of the ISC Exhibition, we have organized a party on Monday evening on the ISC show floor. You'll have the opportunity to talk to different exhibitors and catch up on the latest products and services. A variety of beverages, good food and live music from the band "Lady Taxi" will make this an unforgettable evening.
See you there!

Coffee & Lunch Breaks

07:30 am – 11:00 am	**Welcome Coffee**	CCL, Level -1
08:00 am – 12:00 pm	**Welcome Coffee**	CCL, Level +1
12:00 pm – 01:00 pm	**Lunch**	CCL, Level +1
03:00 pm – 04:00 pm	**Coffee Break**	Level 0, Exhibition Hall

Program | Tuesday, June 24
Conference & Exhibition

(in chronological order per room)



Hall 1, CCL, Level +1

08:00 am - 08:45 am ■ **Talk HPC Futures with IBM & Lenovo: Hear directly from IBM, Lenovo, Partners & Clients about the Future of HPC & the System x Transition to Lenovo (Panel)** Hall 1

Moderator: *Addison Snell, Intersect360 Research*
Panelists: *Arndt Bode, LRZ & TU München*
Oliver Kill, pro-com
Chris Maher, IBM
Adalio T. Sanchez, IBM
Mateo Valero, BSC
Darrel Ward, Lenovo

09:00 am - 10:30 am ■ **Future Supercomputing Directions** Hall 1

Chair: *Bronis R. de Supinski, LLNL*

09:00 am - 09:30 am One Size Fits All vs. System-on-Chip Integration for HPC
Alex Ramirez, UPC & BSC

09:30 am - 10:00 am A Vision for Data Centric Systems
Burkhard Steinmacher-Burow, IBM

10:00 am - 10:30 am Advancing HPC Software from Today through Exascale & Beyond
Robert W. Wisniewski, Intel

11:30 am - 01:00 pm ■ **HPC in Life Sciences** Hall 1

Chair: *Manuel Peitsch, PMI R&D, SIB & University of Basel*

11:30 am - 12:00 pm High-Performance, High-Capacity or High-Throughput Computing? The Challenges of Genomic Big Data
C. Victor Jongeneel, NCSA & University of Illinois at Urbana-Champaign

12:00 pm - 12:30 pm HPC-Supported Therapy Development in Oncology
Olivier Michielin, University of Lausanne & SIB

12:30 pm - 01:00 pm Multiscale Systems Biology: Big Data Challenges in Supercomputing Enabling Translational Medicine in Cardiology
Matthias Reumann, IBM Research Zurich

02:15 pm - 03:15 pm ■ **Distinguished Speakers** Hall 1

Chair: *Frank Baetke, HP*

02:15 pm - 02:45 pm Fault Tolerance in Numerical Library Routines
Jack Dongarra, University of Tennessee & ORNL

02:45 pm - 03:15 pm Air is an Insulator: Adventures in Sustainable Computing
Steve Hammond, NREL

03:15 pm - 04:15 pm ■ **Extreme Computing Challenges** Hall 1

Chair: *Thomas Sterling, Indiana University*

03:15 pm - 03:35 pm Ecosystem of Extreme Computing Challenges
Satoshi Matsuoka, Tokyo Institute of Technology

03:35 pm - 03:55 pm Challenge-Driven Initiatives in Extreme-Scale Computing
William Harrod, DoE

03:55 pm - 04:15 pm Challenges in Climate Simulations at Extreme Scale
Thomas Schulthess, CSCS

05:15 pm - 06:00 pm ■ **Tuesday Keynote** Hall 1

Chair: *Horst Gietl, Prometeus*

05:15 pm - 06:00 pm If you Can't Beat Them, Lead Them – Convergence of Supercomputing & Next Generation "Extreme" Big Data
Satoshi Matsuoka, Tokyo Institute of Technology

Hall 2, CCL, Level +1

09:00 am - 10:30 am ■ **Evolution of Advanced Clustering** Hall 2

Presenter: *Thomas Warschko, Bull*

11:30 am - 01:00 pm ■ **CAE Solutions for HPC Clusters** Hall 2

Chair: *Gerhard Zelder, CADFEM*

11:30 am - 11:45 am CADFEM IT Service & Engineering Cloud
Gerhard Zelder, CADFEM

11:45 am - 12:00 pm Large Scale Computations with MATLAB
Silvina Grad-Freilich, The MathWorks

12:00 pm - 12:15 pm HPC for Realistic Simulation
Benoit Delayen, Dassault Systems

12:15 pm - 12:30 pm Enabling Technologies in STAR-CCM+ for Running on Cloud Architecture
Joel Davison, CD-adapco

12:30 pm - 12:45 pm High Performance Multi-Physics Computations Including Fluid Dynamics & Aeroacoustics
Paul Batten, Metacomp Technologies

12:45 pm - 01:00 pm Business Benefits of HPC in Scalable High End Visualization Environments
Detlev Reicheneder, Autodesk

02:15 pm - 02:45 pm ■ **OpenPOWER Foundation** Hall 2

Chair: *Don Grice, IBM*
Speakers: *Jeffrey D. Brown, IBM*
Don Grice, IBM
Gilad Shainer, Mellanox

02:45 pm - 03:15 pm ■ **Stranger in a Strange Land: Running Linux Clusters in Microsoft Environments** Hall 2

Presenter: *Jan Wender, science+computing*

03:15 pm - 04:15 pm ■ **HPC Cloud-Based Simulation Services for Mid Caps & SMEs – First Results from the EU I4MS Initiative** Hall 2

Chair: *Max Lemke, EU*

03:15 pm - 03:30 pm HPC Cloud-Based Simulation Services for Industry – First Results & Future Opportunities in I4MS
Max Lemke, EU

03:30 pm - 03:45 pm FORTISSIMO – Bringing HPC Solutions to SMEs across Europe
Mark Parsons, EPCC

03:45 pm - 04:00 pm CloudFlow – Computational Cloud Services & Workflows for Agile Engineering
André Stork, Fraunhofer IGD

04:00 pm - 04:15 pm A Platform for Running Manufacturing/Engineering Simulations on the Cloud – First Results of the CloudSME Project
Tamas Kiss, University of Westminster

05:15 pm - 06:00 pm ■ **HPC Impact on U.S. Industry Innovation** Hall 2

Chair: *Merle Giles, University of Illinois at Urbana-Champaign*

05:15 pm - 05:20 pm Introduction
Merle Giles, University of Illinois at Urbana-Champaign

05:20 pm - 05:40 pm Industrial HPC Applications, Scalability & Challenges
Seid Koric, University of Illinois at Urbana-Champaign

05:40 pm - 06:00 pm HPC & Simulation-Based Engineering in Rolls-Royce
Yoon Ho, Rolls-Royce

Hall 3, CCL, Level +1

08:30 am - 10:30 am ■ **Research Papers 02 – Applications** Hall 3

Chair: *Mahdi Bohlouli, University of Siegen*

08:30 am - 09:00 am CoreTSAR: Adaptive Worksharing for Heterogeneous Systems
Tom Scogland, Virginia Tech

09:00 am - 09:30 am SNAP: Strong Scaling High Fidelity Molecular Dynamics Simulations on Leadership-Class Computing Platforms
Christian R. Trott, Sandia National Laboratories

09:30 am - 10:00 am History-Based Predictive Instruction Window Weighting for SMT Processors
Gurhan Kucuk, Yeditepe University

10:00 am - 10:30 am On the Performance Portability of Structured Grid Codes on Many-Core Computer Architectures
Simon McIntosh-Smith, Bristol University

11:30 am - 01:00 pm ■ **Research Papers 03 – Architectures** Hall 3

Chair: *Simon McIntosh-Smith, Bristol University*

11:30 am - 12:00 pm The Brand-New Vector Supercomputer, SX-ACE
Shintaro Momose, NEC

12:00 pm - 12:30 pm Impact of Future Trends on Exascale Cloud Computing
Ted H. Szymanski, McMaster University

12:30 pm - 12:45 pm Performance Characterization of RSC PetaStream Module
Alexander Moskovsky, RSC

12:45 pm - 01:00 pm Deploying Darter – A Cray XC30 System
Mark Fahey, University of Tennessee

02:15 pm - 04:15 pm ■ **Supercomputing & Human Brain Project – Following Brain Research & ICT on 10-Year Quest** Hall 3

Chair: *Thomas Schulthess, CSCS*

02:15 pm - 02:40 pm HBP Lift Off – Status & Update
Thomas Lippert, JSC

02:40 pm - 03:05 pm The Cellular Simulator of the HBP – NEURON
Felix Schürmann, EPFL & Blue Brain Project

03:05 pm - 03:30 pm The Network Simulator of the HBP – NEST
Markus Diesmann, FZJ & RWTH Aachen University

03:30 pm - 03:55 pm Numerical Neuromorphic – Realtime Simulations with SpiNNaker
David Lester, University of Manchester

03:55 pm - 04:15 pm Questions & Answers

Hall 4, CCL, Level +1

07:00 am - 08:30 am ■ **IDC Breakfast Briefing** Hall 4

09:00 am - 10:00 am ■ **BoF 05: Drilling Down: Understanding User-Level Activity on Today's Supercomputers** Hall 4

Presenters: *Mark Fahey, University of Tennessee*
Richard Gerber, NERSC
Bilel Hadri, KAUST
Robert McLay, TACC
Tim Robinson, CSCS
Zhengji Zhao, NERSC

10:00 am - 11:00 am ■ **BoF 07: High Performance Communications for High Performance Computing** Hall 4

Presenters: *Michele De Lorenzi, CSCS*
Nages Sieslack, Prometeus
Jack Wells, ORNL

11:00 am - 12:00 pm ■ **BoF 09: Getting Scientific Software Installed: Tools & Best Practices** Hall 4

Presenters: *Stijn De Weirdt, Ghent University*
Kenneth Hoste, Ghent University

12:00 pm - 01:00 pm ■ **BoF 11: The European HPC Ecosystem – Towards a European Leadership** Hall 4

Presenters: *Sanzio Bassini, Cineca*
Augusto Burgueno-Arjona, EU
Jean Gonnord, CEA
Jean-Francois Lavignon, Bull
David Lecomber, Allinea
Thomas Lippert, JSC

02:15 pm - 04:15 pm ■ **Research Papers 04 – Performance Analysis** Hall 4

Chair: *Fang-Pang Lin, NCHC*

02:15 pm - 02:45 pm Performance Predictions of Multilevel Communication Optimal LU & QR Factorizations on Hierarchical Platforms
Amal Khabou, University of Manchester

02:45 pm - 03:15 pm Hourglass: A Bandwidth-Driven Performance Model for Sorting Algorithms
Fabio Checconi, IBM T.J. Watson Research Center

03:15 pm - 03:45 pm Performance Analysis of Graph Algorithms on P7IH
Fabio Checconi, IBM T.J. Watson Research Center

03:45 pm - 04:15 pm Sparsifying Synchronizations for High-Performance Shared-Memory Sparse Triangular Solver
Jongsoo Park, Intel

Hall 5, CCL, Level +1

09:00 am - 10:00 am ■ **BoF 06: Building Liquid Cooling Technology Standards Part II** Hall 5

Presenters: *Geoff Lyon, CoolIT Systems*
Barbara Massolin, CoolIT Systems

10:00 am - 11:00 am ■ **BoF 08: Experiences with & the Future of OpenACC** Hall 5

Presenters: *Fernanda Foertter, ORNL*
Guido Juckeland, TU Dresden
Duncan Poole, NVIDIA
Will Sawyer, CSCS
Thomas Schulthess, CSCS
Nathan Sidwell, Mentor Graphics

11:00 am - 12:00 pm ■ **BoF 10: Understand Your Cluster by Overlaying Multiple Information Layers** Hall 5

Presenter: *Christian Kniep, Bull*

12:00 pm - 01:00 pm ■ **BoF 12: Autonomic I/O Optimization** Hall 5

Presenters: *Alvaro Aguilera, TU Dresden*
Julian Kunkel, DKRZ
Holger Mickler, TU Dresden
Michaela Zimmer, University of Hamburg

02:15 pm - 03:15 pm ■ **BoF 13: The European Approach to Exascale** Hall 5

Moderator: *Fred Streitz, LLNL*
Speakers: *Augusto Burgueno-Arjona, EU*
Pooyan Dadvand, CIMNE & UPC
Norbert Eicker, Bergische Universität Wuppertal & JSC
Erwin Laure, KTH
Mark Parsons, EPCC
Alex Ramirez, UPC & BSC
Marie-Christine Sawley, Intel

03:15 pm - 04:15 pm ■ **BoF 14: Super-R: Supercomputing & R for Data-Intensive Analysis** Hall 5

Presenters: *Niall Gaffney, TACC*
Ferdinand Jamitzky, LRZ
Michael A. Lysaght, ICHEC
Junji Nakano, ISM
George Ostrouchov, ORNL & University of Tennessee
Weijia Xu, TACC
Hui Zhang, Indiana University

Multi-Purpose Area 3/4 Foyer, CCL, Level 0

09:00 am - 06:00 pm **Research Posters & HPC in Asia Posters** Multi-Purpose Area 3/4 Foyer

For a complete list of the Research Posters and HPC in Asia Posters on display at ISC'14, please refer to pages 29/30 and 58-60 respectively.

Booth #660, Exhibition Hall, Level 0

10:20 am - 01:20 pm ■ **Exhibitor Forum 01** Booth #660, Exhibition Hall

10:20 am - 10:40 am transtec: Implementing IaaS for HPC
Michael Wirth, transtec

10:40 am - 11:00 am IBM: To Burst or Not to Burst – That Is the Question
Terry Fisher, IBM
Scott Tease, IBM

11:00 am - 11:20 am UNIVA: Do More & Save More by Paying for Software
Fritz Ferstl, UNIVA

11:20 am - 11:40 am Cycle Computing: Life Sciences, Manufacturing & Financial Services Case Studies: Implementing Cloud for Better Science, Better Design & Better Business
Jason Stowe, Cycle Computing

11:40 am - 12:00 pm GiDEL: Green & Scalable High Performance Computing Architecture
Reuven Weintraub, GiDEL

12:00 pm - 12:20 pm Hewlett-Packard: Trends in Advanced HPC Architectures
Peter Lee, HP
Rajiv Thakkar, HP

12:20 pm - 12:40 pm Bull: Enhancing HPC Productivity
Claude Derue, Bull
Jean-Pierre Panziera, Bull

12:40 pm - 01:00 pm Supermicro: Supermicro's UltraTwin™ Technology Advancements & Architecture
Peter Maas, Supermicro

01:00 pm - 01:20 pm Megware: Technical Update & Current HPC Activities: SlideSX
Thomas Blum, Megware

02:00 pm - 06:00 pm ■ **Exhibitor Forum 02** Booth #660, Exhibition Hall

02:00 pm - 02:20 pm Sugon: Innovative Technologies in Supercomputing & Big Data
Zhimin Tang, Sugon

02:20 pm - 02:40 pm NVIDIA: Faster Design Cycles with High Performance Hardware in the Cloud
Timothey Lanfear, NVIDIA

02:40 pm - 03:00 pm AMD: Building Power Efficient Compute Clusters with AMD FirePro S-Series Graphics
Niles Burbank, AMD

03:00 pm - 03:20 pm Intel: Driving Innovation in the Parallel Universe
Stephan Gillich, Intel

03:20 pm - 03:40 pm Samsung: PCIe, VNAND, DDR4 – Samsung Introduces Game Changing Developments in the Memory/Storage Subsystem
Thomas Arenz, Samsung

03:40 pm - 04:00 pm Asetek: Practical Liquid Cooling for HPC & High-Utilization Data Centers
David Garcia, Asetek

04:00 pm - 04:20 pm CoolIT Systems: Direct Contact Liquid Cooling – The Key to Optimizing Data Center Cooling
Geoff Lyon, CoolIT Systems

04:20 pm - 04:40 pm Dell: Empowering Efficient HPC with Dell
Martin Hilgeman, Dell

04:40 pm - 05:00 pm Fujitsu: Fujitsu PHI Turnkey Solution: From Blueprint to End Users
Pierre Lagier, Fujitsu

05:00 pm - 05:20 pm Cray: (tba)
Barry Bolding, Cray
Duncan Roweth, Cray

05:20 pm - 05:40 pm Rausch Netzwerktechnik: Seagate Kinetic Open Storage Platform – Innovation to Enable Scale-Out Storage
Joe Fagan, Seagate

05:40 pm - 06:00 pm Altair: Catalyze Product Innovation with HPC Clouds
Srikanth (Sam) Mahalingam, Altair

Exhibition Hall, Level 0

10:00 am - 06:00 pm ■ **Exhibition** Exhibition Hall
For the exhibition floorplan and the exhibitor listing, please refer to the Pocket Guide, which you will find on page 2 of this Conference & Exhibition Guide; the Pocket Guide is also available at the Registration Counter (CCL, Level -1), the Information Counter (CCL, Level 0), and throughout the CCL Congress Center.

Tuesday Evening ■ **Vendor Parties** Various Locations
There will be various vendor-organized parties held in different locations in Leipzig on Tuesday, June 24. Please visit the exhibitors to receive your invitations, as some parties are by invitation only.

Coffee & Lunch Breaks

07:30 am – 11:00 am	**Welcome Coffee**	CCL, Level -1
10:30 am – 11:30 am	**Coffee Break**	Level 0, Exhibition Hall
01:00 pm – 02:15 pm	**Lunch**	Level 0, Exhibition Hall
04:15 pm – 05:15 pm	**Coffee Break**	Level 0, Exhibition Hall

Program | Wednesday, June 25
Conference & Exhibition

(in chronological order per room)

Hall 1, CCL, Level +1

09:00 am - 10:30 am — **Distinguished Speakers** — Hall 1

Chair: *Jack Dongarra, University of Tennessee & ORNL*

09:00 am - 09:45 am — Climate Projection & Numerical Weather Prediction toward the Exa-Scale Era
Hirofumi Tomita, RIKEN

09:45 am - 10:30 am — Can Integrated Optical Interconnects Provide the Bandwidth Needed for Exascale Systems?
Arlon Martin, Mellanox

11:30 am - 01:00 pm — **Quantum Computing** — Hall 1

Chair: *Rupak Biswas, NASA Ames Research Center*

11:30 am - 12:00 pm — NASA Embarks on the Quantum Computing Path
Rupak Biswas, NASA Ames Research Center

12:00 pm - 12:30 pm — Benchmark Experiments with the D-Wave Two Quantum Annealer
Hartmut Neven, Google

12:30 pm - 01:00 pm — Computing with the D-Wave Processor at USC: Quantumness Tests & the Road Toward Applications
Federico Spedalieri, USC

02:15 pm - 03:15 pm — **Who Controls the Future of Supercomputing? – ISC Think Tank Sponsored by HPCwire** — Hall 1

Moderator: *Andrew Jones, NAG*

Panelists: *Eng Lim Goh, SGI*
Bill Kramer, NCSA
Simon McIntosh-Smith, Bristol University
Isabella Weger, ECMWF

03:15 pm - 04:15 pm — **Chat: What's the Big Deal about Big Data?** — Hall 1

Moderator: *Buddy Bland, ORNL*

Panelists: *Satoshi Matsuoka, Tokyo Institute of Technology*
Felix Wortmann, University of St. Gallen & Bosch Internet of Things Lab
Kathy Yelick, LBNL & UC Berkeley

05:15 pm - 06:00 pm — **Wednesday Keynote** — Hall 1

Chair: *Frank Baetke, HP*

05:15 pm - 06:00 pm — HPC Achievement & Impact 2014 – A Personal Perspective
Thomas Sterling, Indiana University

06:00 pm - 06:30 pm — **HPCAC-ISC Student Cluster Competition 2014 Award Ceremony** — Hall 1

Chairs: *Thomas Meuer, Prometeus*
Gilad Shainer, Mellanox

Hall 2, CCL, Level +1

09:00 am - 10:30 am — **Cloud & Big Data: Examples from Industry** — Hall 2

Chair: *Vincent Heuveline, University of Heidelberg*

09:00 am - 09:20 am — Industry Engagement at the STFC Hartree Centre: Utilising HPC, Cloud & Big Data
Mike Ashworth, STFC

09:20 am - 09:40 am — Faster Design Cycles with High Performance Hardware in the Cloud
Ilari Hänninen, CST

09:40 am - 10:00 am — Bringing New Value to the Enterprise with the Internet of Things & Big Data
Olga Mordvinova, SAP
Cyrille Waguet, SAP

10:00 am - 10:20 am — Big Data Analytics in Public & Private Clouds
Oliver Oberst, IBM

10:20 am - 10:30 am — Questions & Answers

11:30 am - 01:00 pm — **Real Life Applications** — Hall 2

Chair: *Marie-Christine Sawley, Intel*

11:30 am - 11:50 am — HPC for Oil & Gas Exploration: Performance & Usability
Nicola Bienati, Eni E&P

11:50 am - 12:10 pm — The Application of HPC Solutions from the ExaScience Life Lab in Drug Discovery at Janssen
Hugo Ceulemans, Janssen Pharmaceuticals

12:10 pm - 12:30 pm — HPC at Airbus
Vincent Galinier, Airbus

12:30 pm - 12:45 pm — Real-Time Design Validation & Realistic Animation – HPC Is Transforming the Business of 3D Visualisation with Autodesk VRED
Ian Godfrey, Fujitsu

12:45 pm - 01:00 pm — Next Generation Sequencing: Using High Performance Computing Best Practices to Enable the Genomics Pipeline & Integrate with the Downstream Analytics
Janis E. Landry-Lane, IBM

02:15 pm - 03:15 pm — **Solving Complex Problems with Affordable HPC Systems** — Hall 2

Chair: *Franklin Dallmann, Dalco*

02:15 pm - 02:35 pm — Optimizing Industrial Flow Measurement Devices & Facilities Using DALCO HPC Cluster Systems
Vivek Kumar, Endress+Hauser Flowtec

02:35 pm - 02:55 pm — Implementing a Viable HPC Cluster for Engineering
Rosemarie Meuer, Rheinmetall Waffe Munition

02:55 pm - 03:15 pm — From PC to Parallel: When Workstations Stop Working
Michael Krösser, AGCO

03:15 pm - 04:15 pm ■ **Support Structures for HPC in Industry** Hall 2

Chair: *Alfred Geiger, T-Systems*

03:15 pm - 03:35 pm Support Concepts for Computer Aided Engineering (CAE)
Alfred Geiger, T-Systems
Karl-Heinz Hierholz, T-Systems

03:35 pm - 03:55 pm How to Turn SMEs into Happy HPC Users
Andreas Wierse, Sicos BW

03:55 pm - 04:15 pm Life Sciences, Manufacturing & Financial Services Case Studies: Implementing Cloud for Better Science, Better Design & Better Business
Jason Stowe, Cycle Computing

Hall 3, CCL, Level +1

08:30 am - 10:30 am ■ **Research Papers 05 – Programmability** Hall 3

Chair: *Weicheng Huang, NCHC*

08:30 am - 09:00 am Scalability & Parallel Execution of OmpSs-OpenCL Tasks on Heterogeneous CPU-GPU Environment
Vinoth Krishnan Elangovan, BSC

09:00 am - 09:15 am Cyme, a Library Maximizing SIMD Computation on User-Defined Containers
Timothée Ewart, EPFL

09:15 am - 09:30 am A Compiler-Assisted OpenMP Migration Method Based on Automatic Parallelizing Information
Kazuhiko Komatsu, Tohoku University

09:30 am - 09:45 am A Type Oriented Graph500 Benchmark
Nick Brown, EPCC

09:45 am - 10:00 am A Dynamic Execution Model Applied to Distributed Collision Detection
Matthew Anderson, Indiana University

10:00 am - 10:15 am Implementation & Optimization of Three-Dimensional UPML-FDTD Algorithm on GPU Clusters
Lei Xu, Shanghai Supercomputer Center

10:15 am - 10:30 am Exploiting SIMD & Thread-Level Parallelism in Multiblock CFD
Ioan Hadade, Imperial College London

11:30 am - 01:00 pm ■ **Research Papers 06 – Co-Design** Hall 3

Chair: *Kengo Nakajima, University of Tokyo*

11:30 am - 12:00 pm SADDLE: A Modular Design Automation Framework for Cluster Supercomputers & Data Centres
Konstantin S. Solnushkin, Saint Petersburg State Polytechnic University

12:00 pm - 12:30 pm Designing MPI Library with Dynamic Connected Transport (DCT) of InfiniBand: Early Experiences
Hari Subramoni, Ohio State University

12:30 pm - 12:45 pm Tofu Interconnect 2: System-on-Chip Integration of High-Performance Interconnect
Yuichiro Ajima, Fujitsu

12:45 pm - 01:00 pm Real-Time Olivary Neuron Simulations On Dataflow Computing Machines
Christos Strydis, Erasmus Medical Center

02:15 pm - 04:15 pm ■ **Research Papers 07 – Parallel I/O** Hall 3

Chair: *Julian Kunkel, DKRZ*

02:15 pm - 02:45 pm RADAR: Runtime Asymmetric Data-Access Driven Scientific Data Replication
John Jenkins, Argonne National Laboratory

02:45 pm - 03:15 pm Fast Multi-Resolution Reads of Massive Simulation Datasets
Sidharth Kumar, University of Utah

03:15 pm - 03:45 pm Rebasing I/O for Scientific Computing: Leveraging Storage Class Memory in an IBM BlueGene/Q Supercomputer
Felix Schürmann, EPFL & Blue Brain Project

03:45 pm - 04:15 pm Orthrus: A Framework for Implementing Efficient Collective I/O in Multicore Clusters
Song Jiang, Wayne State University

Hall 4, CCL, Level +1

07:00 am - 08:30 am ■ **EOFS Breakfast Meeting** Hall 4

Chairs: *Frank Baetke, HP*
Hugo Falter, ParTec

09:00 am - 10:00 am ■ **BoF 15: Embedded Technologies for Supercomputers** Hall 4

Presenters: *Natalie Bates, EE HPC WG*
David Donofrio, LBNL
Alex Ramirez, UPC & BSC
John Shalf, LBNL

10:00 am - 11:00 am ■ **BoF 16: Energy Efficiency Benchmarks & Metrics at Exascale: The Application Perspective** Hall 4

Presenters: *Natalie Bates, EE HPC WG*
Simon McIntosh-Smith, Bristol University
Marie-Christine Sawley, Intel

11:00 am - 12:00 pm ■ **BoF 17: Towards Exascale I/O with E10** Hall 4

Presenters: *André Brinkmann, Johannes Gutenberg-Universität Mainz*
Toni Cortes, BSC & UPC
Hugo Falter, ParTec
Julian Kunkel, DKRZ
Sai Narasimhamurthy, Xyratex

12:00 pm - 01:00 pm ■ **BoF 18: Towards Exascale Runtime Systems** Hall 4
Presenters:
Hans-Christian Hoppe, Intel & FZJ
Jesús Labarta, BSC
Satoshi Matsuoka, Tokyo Institute of Technology
Raymond Namyst, INRIA

02:15 pm - 03:15 pm ■ **BoF 19: Are Applications Ready for Exascale?** Hall 4
Presenters:
Thomas Gerhold, DLR
Hans-Christian Hoppe, Intel & FZJ
Jesús Labarta, BSC
Vincent Moureau, CORIA
George Mozdzynski, ECMWF
Karl Solchenbach, Intel

03:15 pm - 04:15 pm ■ **BoF 20: Hacking & Securing Supercomputers** Hall 4
Presenters:
John Fitzpatrick, MWR InfoSecurity

Hall 5, CCL, Level +1

09:00 am - 10:30 am ■ **Emerging Trends for Big Data in HPC** Hall 5
Chair:
Sverre Jarp, CERN
09:00 am - 09:30 am Big Data in Neuroscience: Where Is The Information?
Joachim M. Buhmann, ETH Zurich
09:30 am - 10:00 am The Boson in the Hay-Stack
Niko Neufeld, CERN
10:00 am - 10:30 am Topological Analysis at the Extreme Scale: Finding Features in Large Data Sets
Gunther H. Weber, LBNL & UC Davis

11:30 am - 01:00 pm ■ **Advanced Re-Engineering of HPC Applications** Hall 5
Chair:
Achim Basermann, DLR
11:30 am - 12:00 pm Challenges of Getting ECMWF's Weather Forecast Model (IFS) to the Exascale
George Mozdzynski, ECMWF
12:00 pm - 12:30 pm Optimizing Haemodynamics Simulation for Supercomputers: Coalesced Communication & Weighted Decomposition
Derek Groen, University College London
12:30 pm - 01:00 pm Rotor Wake Simulation via Vortex Lattice Methods on a Workstation Using GPGPU Accelerators
Johannes Hofmann, DLR

02:15 pm - 03:15 pm ■ **Performance Measurement Tools** Hall 5
Chair:
Bernd Mohr, Prometeus & JSC
02:15 pm - 02:45 pm Score-P & Friends: Scalable & Versatile Parallel Performance Analysis with Periscope, Scalasca, TAU & Vampir
Andreas Knüpfer, TU Dresden

02:45 pm - 03:15 pm Automated Performance Engineering with the Periscope Tuning Framework
Michael Gerndt, TU München

03:15 pm - 04:15 pm ■ **HPC in Europe** Hall 5
Chair:
Sergi Girona, PRACE
03:15 pm - 03:30 pm Reducing the TCO for Grand Scale Applications, Experience with SuperMUC
Arndt Bode, LRZ & TU München
03:30 pm - 03:45 pm Behaviour & Performance Insight: the Key towards Productivity & Efficiency
Jesús Labarta, BSC
03:45 pm - 04:00 pm Tuning System Architectures in the Exascale Scenarios
Paul Arts, Eurotech
04:00pm - 04:15 pm Exascale Challenges of European Academic & Industrial Applications
Stéphane Requena, GENCI

Multi-Purpose Area 3/4 Foyer, CCL, Level 0

09:00 am - 06:00 pm ■ **Research Posters & HPC in Asia Posters** Multi-Purpose Area 3/4 Foyer
For a complete list of the Research Posters and HPC in Asia Posters on display at ISC'14, please refer to pages 29/30 and 58-60 respectively.

Booth #660, Exhibition Hall, Level 0

10:20 am - 01:00 pm ■ **Exhibitor Forum 03** Booth #660, Exhibition Hall
10:20 am - 10:40 am Numascale: Experiences with Large Numascale Shared Memory Systems
Ole W. Saastad, University of Oslo
Atle Vesterkjaer, Numascale
10:40 am - 11:00 am Panasas: ActiveStor: Hybrid Scale-Out NAS Designed for HPC & Big Data
Geoff Noer, Panasas
11:00 am - 11:20 am Bright Computing: A Unified Management Solution for HPC & Hadoop Clusters
Martijn de Vries, Bright Computing
11:20 am - 11:40 am Eurotech: Aurora Bricks, a Novel HPC Architecture
Paul Arts, Eurotech
Giovanbattista Mattiussi, Eurotech
11:40 am - 12:00 pm Adaptive Computing: HPC, Cloud & Big Workflow: The Evolution of Big Data Analytics
Daniel Hardman, Adaptive Computing
12:00 pm - 12:20 pm T-Platforms: An Introduction of A-Class Multipetaflops Supercomputer Platform with Hot-Water Cooling
Andrey Slepuhin, T-Platforms
12:20 pm - 12:40 pm Huawei: Flexible, Workload-Optimized, End-to-End HPC Solutions
Francis Lam, Huawei
12:40 pm - 01:00 pm Toshiba: Storage & Memory Solutions for the Data Center
Rainer W. Kaese, Toshiba

01:15 pm - 02:25 pm ■ **Exhibitors Innovation Forum** Booth #660, Exhibition Hall

Moderator: *Steve Conway, IDC*

01:15 pm - 01:20 pm Introduction
Steve Conway, IDC

01:20 pm - 01:30 pm AppliedMicro X-Gene 64b ARM Server SoC – Power Efficient Density for HPC
Gaurav Singh, AppliedMicro

01:30 pm - 01:40 pm GS-R22PHL: The Ultimate HPC Block
Yann Gerardi, Gigabyte Technologies

01:40 pm - 01:50 pm Kalray MPPA-256 Scalable Compute Cartridge
Benoît Ganne, Kalray

01:50 pm - 02:00 pm Massively Parallel Simulation Software with the Open Source DUNE Framework
Markus Blatt, Dr. Markus Blatt – HPC-Simulation-Software & Services

02:00 pm - 02:10 pm DCCN – Open Source Data Center Compute & Networking System
Rick O'Connor, Rapid IO Association

02:10 pm - 02:20 pm Efficient 2-Phase (2-P-Cool) Cooling of Compute Nodes with Novec High-Tec Fluids
Egbert Figgemeier, 3M

02:20 pm - 02:25 pm Wrap-Up
Steve Conway, IDC

02:40 pm - 06:00 pm ■ **Exhibitor Forum 04** Booth #660

02:40 pm - 03:00 pm D-Wave Systems: Introduction to Quantum Computing
Murray Thom, D-Wave Systems

03:00 pm - 03:20 pm NUDT: Towards Extreme Large Scale Computing
Yutong Lu, NUDT

03:20 pm - 03:40 pm Mellanox: Interconnect Your Future
Gilad Shainer, Mellanox

03:40 pm - 04:00 pm Gompute: Accelerate Innovation on the Gompute HPC Cloud Platform
Devarajan Subramanian, Gridcore

04:00 pm - 04:20 pm DataDirect Networks: Tackling IO Challenges at Scale
James Coomer, DDN

04:20 pm - 04:40 pm ScaleMP: Creating a Flexible Workload Environment
Shai Fultheim, ScaleMP

04:40 pm - 05:00 pm Verne Global: Data Security, Data Protection & Compliance – The Example of Iceland
Jens Bücking, esb

05:00 pm - 05:20 pm RSC: Exascale Ready: RSC PetaStream Massively-Parallel Solution with an Industry-Record Ultra High Density of 1.2 PFLOPS per Rack with 1024x Intel® Xeon Phi™
Alexey Shmelev, RSC

05:20 pm - 05:40 pm NEC: NEC LX Series Update
Martin Galle, NEC

05:40 pm - 06:00 pm Boston: (tba)
David Power, Boston

Exhibition Hall, Level 0

10:00 am - 06:00 pm ■ **Exhibition** Exhibition Hall

For the exhibition floorplan and the exhibitor listing, please refer to the Pocket Guide, which you will find on page 2 of this Conference & Exhibition Guide; the Pocket Guide is also available at the Registration Counter (CCL, Level -1), the Information Counter (CCL, Level 0), and throughout the CCL Congress Center.

CCL Main Entrance, Level 0

06:30 pm - 09:30 pm ■ **ISC BBQ** CCL Main Entrance

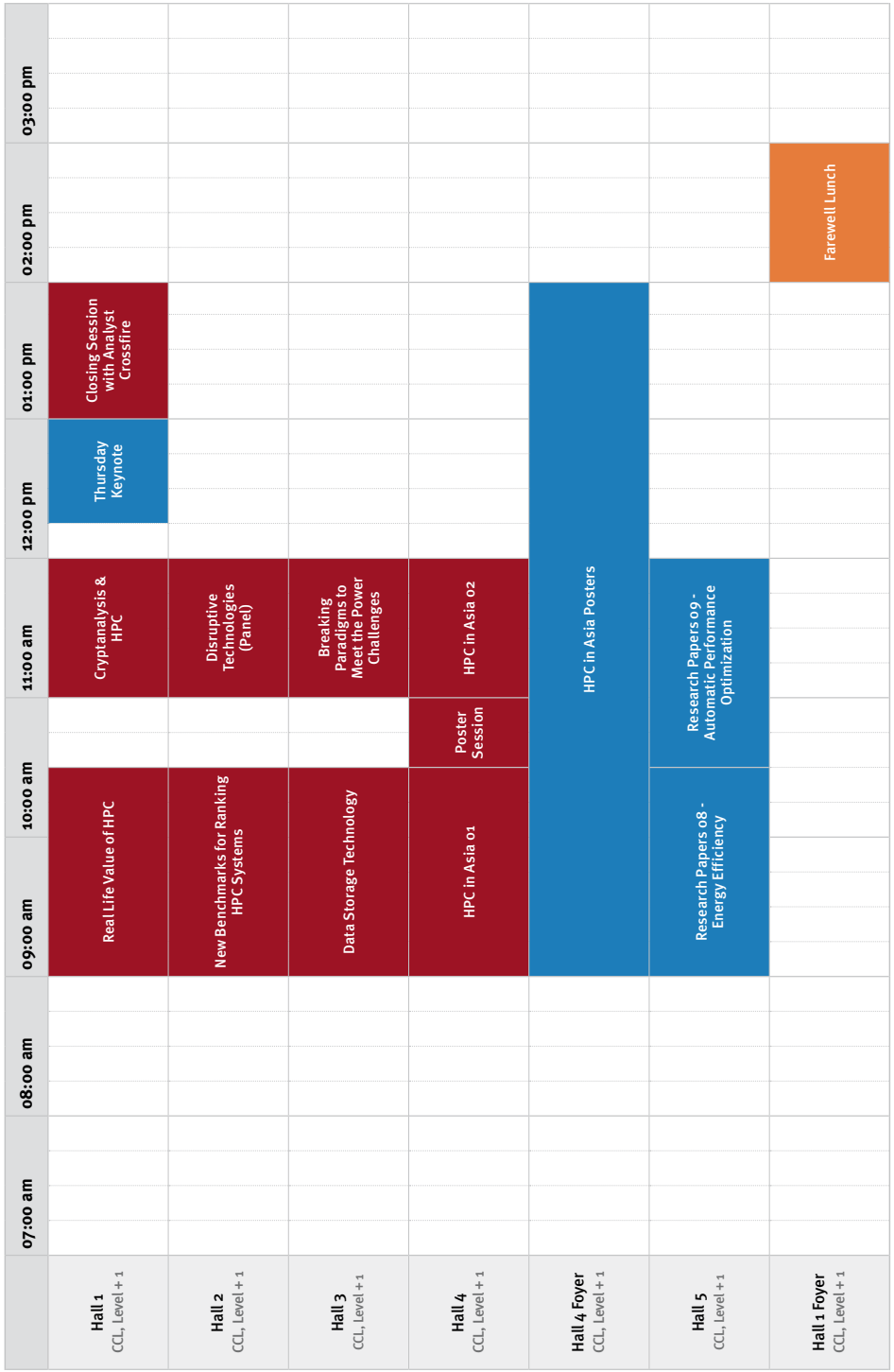
Once again we cordially invite you to the ISC BBQ which our attendees enjoyed very much last year. The evening will start with great food and three hours of funky Jazz music from the band "Hightones". We will also briefly introduce you to our two other conferences – the ISC'14 Cloud and ISC'14 Big Data conferences to take place this fall in Heidelberg, Germany.
The event is sponsored by **ISC Events** and **Intersect360 Research**.

Coffee & Lunch Breaks

07:30 am – 10:00 am	**Welcome Coffee**	CCL, Level -1
10:30 am – 11:30 am	**Coffee Break**	Level 0, Exhibition Hall
01:00 pm – 02:15 pm	**Lunch**	Level 0, Exhibition Hall
04:15 pm – 05:15 pm	**Coffee Break**	Level 0, Exhibition Hall

Program | Thursday, June 26
Conference

(in chronological order per room)



Hall 1, CCL, Level +1

09:00 am - 10:30 am ■ **Real Life Value of HPC** Hall 1

Chair: *John Shalf, LBNL*

09:00 am - 09:30 am Using HPC to Decode Genomes for Customized Medicine
Shane Corder, Children's Mercy Hospital

09:30 am - 10:00 am Weather Prediction & High Performance Computing
Oliver Fuhrer, MeteoSwiss

10:00 am - 10:30 am Supercomputing Oil & Gas Reservoirs – Seismic Processing & Seismic Inversion
Mauricio Araya, Shell

11:00 am - 12:00 pm ■ **Cryptanalysis & HPC** Hall 1

Chairs: *Daniel J. Bernstein, University of Illinois at Chicago & TU/e*
Tanja Lange, TU/e

11:00 am - 11:30 am Introduction to High-Performance Cryptanalysis
Ruben Niederhagen, TU/e

11:30 am - 12:00 pm Cryptanalysis on Reconfigurable Hardware
Tim Güneysu, RUB

12:15 pm - 01:00 pm ■ **Thursday Keynote** Hall 1

Chair: *Felix Schürmann, EPFL & Blue Brain Project*

12:15 pm - 01:00 pm Brain Derived Computing beyond von Neumann – Achievements & Challenges
Karlheinz Meier, University of Heidelberg

01:00 pm - 02:00 pm ■ **Closing Session with Analyst Crossfire** Hall 1

Chair: *Arndt Bode, LRZ & TU München*

01:00 pm - 01:45 pm Analyst Crossfire
Moderator: *Addison Snell, Intersect360 Research*
Panelists: *Pascal Barbolosi, Bull*
Yoon Ho, Rolls-Royce
Michael M. Resch, HLRS
Adalio T. Sanchez, IBM

01:45 pm - 02:00 pm Thanks, Auf Wiedersehen & ISC'15
Arndt Bode, LRZ & TU München

Hall 2, CCL, Level +1

09:00 am - 10:30 am ■ **New Benchmarks for Ranking HPC Systems** Hall 2

Chair: *Erich Strohmaier, LBNL*

09:00 am - 09:30 am HPCG: One Year Later
Jack Dongarra, University of Tennessee & ORNL
Mike Heroux, Sandia National Laboratories

09:30 am - 10:00 am Crafting Benchmarks for Big Data
Tilmann Rabl, University of Toronto & bankmark

10:00 am - 10:30 am A Proposal for a New Top500 Metric
Mark Adams, LBNL

11:00 am - 12:00 pm ■ **Disruptive Technologies (Panel)** Hall 2

Moderator: *Earl Joseph II, IDC*

11:00 am - 11:05 am Introduction
Earl Joseph II, IDC

11:05 am - 11:10 am Future of High Performance Computing: A NASA Perspective
Rupak Biswas, NASA Ames Research Center

11:10 am - 11:15 am Disruptive Technologies in Advanced Computing from D-Wave
Robert Ewald, D-Wave Systems

11:15 am - 11:20 am High Performance Computing Disruption: An NVIDIA Perspective
Steve Oberlin, NVIDIA

11:20 am - 11:25 am DDN's View of the Emerging Disruptions in High Performance Computing
Mike Vildibill, DDN

11:25 am - 11:30 am Emerging Disruptions in High Performance Computing: Perspectives from Inspur
Leijun Hu, Inspur

11:30 am - 11:35 am Disruptive Technologies from Sugon in the HPC Market
Zhimin Tang, Sugon

11:35 am - 11:40 am Disruptions in High Performance Computing: A View from Adaptive Computing
Daniel Hardman, Adaptive Computing

11:40 am - 11:45 am Future of High Performance Computing: An Intel Perspective
Mark Seager, Intel

11:45 am - 12:00 pm Panel Discussion

Hall 3, CCL, Level +1

09:00 am - 10:30 am ■ **Data Storage Technology** Hall 3

Chair: *Klaus Wolkersdorfer, JSC*

09:00 am - 09:20 am Re-Imagining Storage for HPC & Big Data
Bill Moore, DSSD

09:20 am - 09:40 am New Era 'SSD 2.0' – New Role & Responsibility of Flash Storage for Next Generation Computing Environment
Dong-Gi (Daniel) Lee, Samsung

09:40 am - 10:00 am Hard Disk Drive Futures = HPC Storage Future?
Torben Kling-Petersen, Xyratex
10:00 am - 10:20 am The All-Flash Datacenter for Hyperscale Acceleration
Jens Mertes, Fusion-io
10:20 am - 10:30 am Questions & Answers

11:00 am - 12:00 pm ■ **Breaking Paradigms to Meet the Power Challenges** Hall 3
Chair: *Natalie Bates, EE HPC WG*
11:00 am - 11:30 am High Power, Low Carbon Footprint – Why BMW Moved Their HPC Applications to a Data Center in Iceland
Tate Cantrell, Verne Global
Susanne Obermeier, BMW Group
11:30 am - 12:00 pm Integration for Efficiency – How SoC Designs Can Reduce Data Center Power
David Donofrio, LBNL

09:00 am - 10:30 am ■ **HPC in Asia 01** Hall 4
Chair: *Hiroshi Nakashima, Kyoto University*
09:00 am - 09:05 am Welcome Address
Taisuke Boku, University of Tsukuba
09:05 am - 09:15 am Status Report from China
Yuquan Zhang, Chinese Academy of Science
09:15 am - 09:25 am Status Report from Korea
Jysoo Lee, KISTI
09:25 am - 09:35 am Status Report from Japan
Taisuke Boku, University of Tsukuba
09:35 am - 09:45 am Status Report from India
Suryachandra A. Rao, IITM
09:45 am - 09:55 am Status Report from Taiwan
Weicheng Huang, NCHC
09:55 am - 10:05 am Status Report from Singapore
*Marek T. Michalewicz, A*STAR*
10:05 am - 10:15 am Status Report from Australia
George Beckett, iVEC
10:15 am - 10:30 am Discussion on Collaborative Work on National Infrastructure Supercomputers

10:30 am - 11:00 am ■ **HPC in Asia Poster Session (during Coffee Break)** Hall 4
(01a) Science Data Processing for the SKA Radio Telescope
George Beckett, iVEC
(02a) Modeling Power Usage of HPC Systems by RAPL Interface
Thang Cao, University of Tokyo
(03a) Implementing a Hybrid Parallel Overset Grid Algorithm for Computational Fluid Dynamics Applications
*Dominic Chandar, A*STAR*

(04a) An Initial Microbenchmark Performance Study for Assessing the Suitability of Scientific Workloads Using Virtualized Resources from a Federated Australian Academic Cloud
Jakub Chrzęszczyk, ANU
(05a) Proprietary Interconnect with Low Latency for HA-PACS/TCA
Toshihiro Hanawa, University of Tokyo
(06a) Efficient Utilization of Memory Hierarchy on GPU Clusters: Optimization Methods & Performance Models
Guanghao Jin, Tokyo Institute of Technology
(07a) Cancer Genome Analysis Using Next Generation Sequencing & High Performance Computing
Hyojin Kang, KISTI
(08a) Development of an AMR Framework for FDM Applications on Parallel Processors
Masaharu Matsumoto, University of Tokyo
(09a) Galaxies of Supercomputers & Their Underlying Interconnect Topologies Hierarchies
*Marek T. Michalewicz, A*STAR*
(10a) Cache-Aware Sparse Matrix Format for GPU
Yusuke Nagasaka, Tokyo Institute of Technology
(11a) Parallel Preconditioning Methods for Iterative Solvers Based on BILUT(p,d,t)
Kengo Nakajima, University of Tokyo
(12a) Cardiac Arrhythmias in Mathematical Models of Ventricular Tissue: High-Performance Computing Studies
Alok Ranjan Nayak, Indian Institute of Science
(13a) Application Performance Characterization towards Exa-Scale Supercomputers
Akihiro Nomura, Tokyo Institute of Technology
(14a) Performance Evaluation of SpMV Considering Matrix Layout Parameters
Satoshi Ohshima, University of Tokyo
(15a) Parallelized Mining of Subgraphs Sharing Common Items using Task-Parallel Language Tascell
Shingo Okuno, Kyoto University
(16a) Nanoelectronics with High Performance Computing: Simulations of Mobility in Nanoscale Transistors
Hoon Ryu, KISTI
(17a) Exploration of Application-level Lossy Compression for Fast Checkpoint/Restart
Naoto Sasaki, Tokyo Institute of Technology
(18a) Multiple PVAS: Parallel Task Model for the Hybrid Architecture Consisting of Many-Core & Multi-Core
Mikiko Sato, Tokyo University of Agriculture & Technology

(19a) Large-Scale Multi-Level Sorting for GPU-Based Heterogeneous Architectures
Hideyuki Shamoto, Tokyo Institute of Technology
(20a) Tailoring HPC Technologies for Australian Researchers
Lei Shang, ANU
(21a) Active Packet Pacing as a Congestion Avoidance Technique toward Extreme Scale Interconnect
Hidetomo Shibamura, ISIT
(22a) Efficient Execution of Multiple Applications Using Process Migration
Taichirou Suzuki, Tokyo Institute of Technology
(23a) Programming Interface for Scientific Computing Cloud Service
Xiaoning Wang, Chinese Academy of Science
(24a) Implementation of a Fast & Efficient Algorithm for Phase-Field Simulation on Heterogeneous Hardware
Jian Zhang, Chinese Academy of Science

11:00 am - 12:00 pm ■ **HPC in Asia 02** Hall 4
Chair: *Weicheng Huang, NCHC*
11:00 am - 11:20 am The EigenExa Library – High Performance & Scalable Direct Eigensolver for Large-Scale Computational Science
Toshiyuki Imamura, RIKEN
11:20 am - 11:40 am High Performance Computational Rheology of Complex Fluids/Soft Matter for Digital Manufacturing
Xuen-Feng Yuan, National Supercomputing Center Guangzhou
11:40 am - 12:00 pm Large-Scale Simulation of Respiratory Airflows
Nicola Varini, iVEC

Hall 4 Foyer, CCL, Level +1

09:00 am - 02:00 pm ■ **HPC in Asia Posters** Hall 4 Foyer
For a complete list of the HPC in Asia Posters on display at ISC'14, please refer to page 58-60.

Hall 5, CCL, Level +1

09:00 am - 10:30 am ■ **Research Papers 08 – Energy Efficiency** Hall 5
Chair: *Oleksiy Koshulko, NAS*
09:00 am - 09:30 am Fast & Energy-Efficient Breadth-First Search on a Single NUMA System
Yuichiro Yasui, Kyushu University & JST CREST
09:30 am - 10:00 am Evaluation of the Impact of Direct Warm-Water Cooling of the HPC Servers on the Data Center Ecosystem
Radosław Januszewski, PSNC
10:00 am - 10:30 am A Case Study of Energy Aware Scheduling on SuperMUC
Axel Auweter, LRZ

10:30 am - 12:00 pm ■ **Research Papers 09 – Automatic Performance Optimization** Hall 5
Chair: *Alexander Moskovsky, RSC*
10:30 am - 11:00 am The SIOX Architecture – Coupling Automatic Monitoring & Optimization of Parallel I/O
Julian Kunkel, DKRZ
11:00 am - 11:30 am Framework & Modular Infrastructure for Automation of Architectural Adaptation & Performance Optimization for HPC
Leonardo Fialho, University of Texas at Austin
11:30 am - 12:00 pm Automatic Exploration of Potential Parallelism in Sequential Applications
Vladimir Subotic, BSC

Hall 1 Foyer, CCL, Level +1

02:00 pm - 03:00 pm ■ **Farewell Lunch** Hall 1 Foyer

Coffee & Lunch Breaks

07:30 am – 10:30 am **Welcome Coffee** CCL, Level +1
10:30 am – 11:00 am **Coffee Break** CCL, Level +1
02:00 pm – 03:00 pm **Farewell Lunch** CCL, Level +1

Exhibition, Exhibitor & Media Sponsor Profiles ISC'14

Exhibition, Exhibitor & Media Sponsor Profiles

Exhibition, Exhibitor & Media Sponsor Profiles ISC'14

Exhibition

With over 150 exhibitors from research and industries representing supercomputing, storage and networking, ISC will host the largest HPC exhibition in Europe in 2014. In the Exhibiton Hall (Level 0), the world's leading supercomputing companies and organizations will showcase high-performance computing, networking, storage and analysis technologies. All information on this year's exhibition is also available at: **www.isc-events.com/isc14/sponsors_exhibitors_overview.html**

Exhibition Hours

Monday, June 23	03:00 pm – 08:30 pm
(with Welcome Party from	06:30 pm – 08:30 pm)
Tuesday, June 24	10:00 am – 06:00 pm
Wednesday, June 25	10:00 am – 06:00 pm

For the exhibition floorplan and the exhibitor listing, please refer to the Pocket Guide, which you will find on page 2 of this Conference & Exhibition Guide; the Pocket Guide is also available at the Registration Counter (CCL, Level -1), the Information Counter (CCL, Level 0), and throughout the CCL Congress Center.

Exhibitor Profiles

3M Deutschland Gmbh — Booth: 812

3M captures the spark of new ideas and transforms them into thousands of ingenious products. Our culture of creative collaboration inspires a never-ending stream of powerful technologies that make life better. 3M is the innovation company that never stops inventing. With $31 billion in sales, 3M employs 89,000 people worldwide and has operations in more than 70 countries.

Adapteva — Booth: 205

Adapteva is an innovator in parallel processing delivering the industry's most energy efficient and scalable multicore processor chip designed for high performance computing. The Epiphany multicore architecture represents a new class of massively parallel computer processors that will disrupt a wide range of markets from compact low power devices to next generation supercomputers.
www.adapteva.com

Adaptive Computing — Booth: 710

Adaptive powers many of the world's largest cloud and HPC environments with its award-winning Moab optimization and scheduling software. Moab enables large organizations to perform simulations and analyze data faster and most cost-effectively delivering game-changing results. Moab's patented, policy-based workload manager delivers dynamic scheduling, provisioning, and management of multi-step/multi-application services giving companies a competitive advantage.

Advania Data Centers — Booth: 714

Advania is a Nordic IT company with 1100 employees. The company was founded in 1939 and has over 10.000 corporate clients worldwide. Our data center is a 28.000 square foot facility, with upgradability up to 4000 racks. Our datacentre is powered by 100% renewable energy and power prices can be fixed for up to 15 years. We offer Tier1 and Tier3 facilities.

Allinea Software — Booth: 763

Allinea Software is the trusted leader in software development tools and application performance analytics for HPC.
Our integrated suite of profiling and debugging tools is relied on by developers and computational scientists – from multicore desktops to beyond Petascale – for applications ranging from climate modeling to astrophysics, and from computational finance to aircraft and engine design.

Altair — Booth: 362

Altair knows HPC: Only Altair produces both HPC infrastructure software (including the market-leading PBS Works suite) as well as end user applications, and employs over 500 engineers working on client projects every day. For 28 years Altair has delivered software solutions and consulting services to over 5000 customers in a broad range of industries. Privately held with more than 2000 employees, Altair operates 48 offices in 20 countries worldwide. To learn more, visit **www.altair.com**.

AMD — Booth: 250

The Leading Edge of Graphics Virtualization. AMD FirePro™ technology supports leading virtualization technologies enabling the delivery of graphically accelerated computing experiences to a range of client devices. When a single AMD FirePro™ graphics card is installed in a rack or blade server or PCIe expansion chassis, it can support multiple concurrent user computing sessions. Users have the ability to work seamlessly with business productivity applications, video, graphically rich OS interfaces, as well as professional CAD/CAE and media and entertainment applications.

Applied Micro Circuits Corporation — Booth: 506

Applied Micro Circuits Corporation is a global leader in computing and connectivity solutions for next-generation cloud infrastructure and data centers. AppliedMicro delivers silicon solutions that dramatically lower total cost of ownership. Corporate headquarters are located in Sunnyvale, California. **www.apm.com**.

Asetek — Booth: 610

Asetek, with over 1.7 million units deployed, is the world-leading provider of energy efficient liquid cooling systems for data centers, workstations and high-performance PCs. Its RackCDU™ provides data center cooling cost reductions exceeding 50%. RackCDU D2C™ captures 60% to 80% of server heat with 2.5x-5x increases in data center compute density. RackCDU ISAC™ sealed servers capture nearly 100% of server heat. RackCDU is used by HPC and high-utilization data centers to improve TCO by decreasing energy consumption, increasing data center compute density and enabling server energy reuse.

ASRock Rack — Booth: 831

ASRock Rack Inc., established in 2013, specialized in the field of Cloud Computing server hardware. While inheriting design concepts, "Creativity, Consideration, Convergence", the company is dedicated to bring the Server Industry out-of-the box thinking. Leveraged by ASRock's growing momentum, ASRock Rack commits to serve the market with flexible, reliable and user-friendly DIY Server hardware.

Autodesk — Booth: 630

Autodesk, Inc., is a leader in 3D design, engineering and entertainment software. Customers across the manufacturing, architecture, building, construction, and media and entertainment industries use Autodesk software to design, visualize and simulate their ideas. Autodesk continues to develop the broadest portfolio of state-of-the-art software for global markets.

Avnet Technology Solutions GmbH — Booth: 460

Avnet Global Computing Components provide programs & services that help our partners to minimize their costs, investment risk & enhance their profitability. Our comprehensive portfolio of services makes it easy for you to quickly & cost effectively augment your existing solutions offering with high-value services that don't require you to add technical personnel training or IT equipment.

Exhibition, Exhibitor & Media Sponsor Profiles ISC'14

Barcelona Supercomputing Center (BSC) — Booth: 825

Barcelona Supercomputing Center (BSC) is the national supercomputing centre in Spain specialised in HPC. Its mission is to provide infrastructure and supercomputing services to scientists, and to generate knowledge and technology to transfer to business and society. It's a Severo Ochoa Center of Excellence and a first level hosting member of PRACE. There are over 300 experts and R&D Professionals.

Boston Limited — Booth: 206

Founded in 1992, UK-based Boston Limited provides award-winning server, storage and workstation solutions worldwide. The company offers a full range of services, from custom design, configuration, assembly, and testing to global support and maintenance. Organisations of all sizes and market segments leverage Boston's expertise in bespoke OEM and embedded platforms. Our state of the art lab facilities and qualified engineers lay the foundation for our long pedigree of solutions. For more information about Boston visit **www.boston.co.uk** or follow us on Twitter @BostonLimited.

Bright Computing — Booth: 740

Bright delivers on the promise of advanced cluster management, made easy. Bright Cluster Manager is enterprise-grade software that makes it easy to deploy and manage clusters of all sizes. From its bare-metal provisioning of the entire software stack to its beautiful graphical user interface, Bright provides the most advanced management solution for HPC, Hadoop, storage, database, and workstation clusters available. Dell, Cisco, Amazon, and Intel are part of Bright's partner ecosystem, and our customers include leading Fortune 100 companies.

Bull — Booth: 340

Bull is a leader in secure mission-critical digital systems. The Group is dedicated to developing and implementing solutions where computing power and security serve to optimize its customers' information systems, to support their business. Bull operates in high added-value markets including computer simulation, Cloud computing and 'computing power plants', outsourcing and security. Currently Bull employs around 9000 people across more than 50 countries, with over 700 staff totally focused on R&D. In 2013, Bull recorded revenues of €1.26 billion.

As an expert in delivering ultra high performance, Bull is now one of the world leaders in Extreme Computing. As an IT manufacturer, Bull has a strong presence among the world's top supercomputers. With more HPC specialists than any other player in Europe, Bull is recognized for the technological excellence of its bullx HPC systems, its HPC applications expertise and its ability to manage large-scale projects. Across the world, numerous institutions (SURFsara in the Netherlands, IT4Innovations in the Czech Republic, CSC in Finland, the Universities of Dresden, Grenoble, Reims...) and companies (Meteo France, Dassault Aviation, Cenaero) have turned to Bull to implement powerful, robust systems that are easy to manage and designed for round-the-clock operation. Every day, thanks to Bull, their researchers and engineers are pushing back the boundaries of the possible.

Visit booth 340 or go to **www.bull.com/extreme-computing**

bullx
delivers a fine outlook
for Météo-France

Just as they do at Météo-France, the French weather forecasting agency, every day thousands of scientists and engineers around the world use bullx supercomputers to speed up their research work, design new products… and even predict the weather.
With their Intel® Xeon® E5 and E7 processors, bullx supercomputers are some of the most powerful on the planet.
Reflecting the years of expertise that Bull has built up in ultra-high powered computing technologies.

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CADFEM **Booth: 632**

CADFEM – because simulation is more than just software
CADFEM is a system vendor, engineering services provider as well as a training and information provider all rolled into one. CAE Software, HPC for CAE, Server, CADFEM Engineering Simulation Cloud and other CAE optimized IT solutions. Support, advice, engineering. Plus state-of-the-art know-how. **www.cadfem.de**

CALYOS SA **Booth: 822**

Calyos is a provider of advanced Two-phase Cooling Solutions for High Performance Computing servers. Adaptable to liquid or air cooled racks, this Silent High Efficiency Platform Solution enables the use of high temperature cooling fluid – significantly reducing operating costs of data centers – as well as it enables next generation of very high compute density.

CD-adapco **Booth: 633**

CD-adapco is the world's largest independent CFD-focused provider of engineering simulation software, support and services. We have over 30 years of experience in delivering industrial strength engineering simulation. The scope of our activities extends well beyond software development to encompass a wide range of CAE engineering services in both CFD and FEA.

CEA **Booth: 725**

CEA is a global leader in R&D&I, in four main areas: low-carbon energies, defense and security, information technologies and health technologies. CEA maintains a cross-disciplinary culture of engineers and researchers, building on the synergies between fundamental and technological research, and taking advantages of exceptional installations (supercomputer, large physics instruments).

CHPC (CSIR) **Booth: 370**

The Centre for High Performance Computing is South Africa's premium computing destination, offering its services to academia and industry. CHPC staff expertise includes support for Computational Fluid Dynamics, Finite Element Analysis, Material Science and Commercial Engineering Software among others. The centre also enjoys substantial national and international support in computing expertise.

christmann informationstechnik + medien GmbH & Co. KG **Booth: 210** co-exhibitor of Samsung

Christmann stands for resource efficient IT solutions ranging from a single workstation, over network and management solutions to complex server architecture: A valuable partner for research projects in storage, computing capacity, cloud and HPC.

CINECA **Booth: 921**

SCAI (SuperComputing Applications and Innovation) is the High Performance Computing department of Cineca, the largest computing centre in Italy and one of the largest in Europe. The mission of SCAI is to accelerate the scientific discovery by providing high performance computing resources, data management, storage systems, tools and HPC-HPDA services and expertise at large.

ClusterVision — Booth: 842

ClusterVision specialises in the design, build and management of HPC clusters. By combining cutting-edge hardware and software components with professional services. ClusterVision helps its customers create top-quality, efficient and reliable solutions. The ClusterVision team has designed and built some of the largest and most complex, computational, storage and database clusters in Europe.

CoCoLink Corp — Booth: 823

CoCoLink Corp., subsidiary company of Seoul National University provides super computing systems and applications with consulting. CoCoLink Develops hardware and software for super computing.

COMSOL Multiphysics — Booth: 712

The COMSOL Group provides software solutions for multiphysics modeling. We are a fast growing high tech engineering software company with a proven track record and a vision as a leader of the industry. The company was founded in July 1986 in Stockholm, Sweden.

CoolIT Systems Inc — Booth: 411

With over 1.5 million systems on the market and a capacity of 80,000+ systems per month, CoolIT's direct contact liquid cooling technology sets the bar for cooling in the data center. CoolIT's Rack DCLC™ platform is modular, scalable, and customizable and allows for dramatic increases in rack densities, component performance, and efficiencies. With options for data centers with and without facility water hook up, any server in any rack can be liquid cooled with CoolIT's hardware, and benefit from immediate and measurable CAPEX and OPEX benefits.

CPU24/7 — Booth: 552

CPU 24/7 is specialised in providing High Performance Computing (HPC) systems and computing power "on-demand" for industry and universities, for applications in development and research, either in form of the permanently available Tailored Configurations or as flexibly usable computing capacities via the Resource Area – each available as ready-to-work workplace environment. See: **www.cpu-24-7.com**

Cray — Booth: 730

Global supercomputing leader Cray builds innovative systems and solutions enabling scientists and engineers in academia, government, and industry to meet existing and future simulation and analytics challenges. Leveraging 40 years of experience in developing and servicing the world's most advanced supercomputers, Cray offers a comprehensive portfolio of high performance computing, storage, and data analytics solutions delivering unrivaled performance, efficiency, and scalability. Even more, Cray's industry-leading technologies are available in configurations to meet every budget and need. Whatever your research question, Cray makes it easy to take advantage of high performance computing advancements.

CSC – IT Center for Science — Booth: 924

CSC – IT Center for Science Ltd is non-profit company administered by the Ministry of Education, Science and Culture. CSC provides IT support and resources for academia, research institutes and companies. Our service portfolio includes: Data services for science and culture,Funet network services, Computing and Application services,Information management services and Training services.

CSCS and hpc-ch — Booth: 941

hpc-ch is the Swiss HPC Community. The goal of hpc-ch is to support and foster the knowledge exchange between providers of HPC systems at Swiss universities and in industry. Members of hpc-ch are the Swiss National Supercomputing Centre (CSCS) as largest HPC provider in Switzerland, all the Swiss universities operating HPC systems and representatives from industry and private research centers.

Cycle Computing LLC — Booth: 550

Cycle Computing is the leader in cloud computing and Utility HPC (high performance computing) software, which enables greater access to computing over the cloud. CycleServer, CycleCloud, and DataMan, represent the enabling forces that help users easily connect to greater computing power using public and private clouds. The company believes that utility access to HPC will lead to a new era in accelerated invention and discovery. Since 2005, Cycle Computing has grown to deploy proven implementations at Fortune 500s, SMBs and government and academic institutions worldwide.

D-Wave Systems — Booth: 461

D-Wave is the world's first commercial quantum computing company. Our mission is to integrate new discoveries in physics, engineering, manufacturing, and computer science into breakthrough approaches to computation that help solve some of the world's most complex challenges.
D-Wave is working with leaders in business, government and academia on a wide range of very computationally-intensive applications that could lead to breakthroughs in diverse fields such as systems design and validation, healthcare, mission planning, financial analysis, global logistics and defense and intelligence. D-Wave systems are being used by world-class organizations and institutions including Lockheed-Martin, Google, NASA, and USC.

Dassault Systemes SIMULIA — Booth: 635

As an integral part of the Dassault Systèmes 3DEXPERIENCE platform, SIMULIA applications enable users to accelerate virtual testing and optimization of product performance, reliability and safety – before committing to costly and time-consuming physical prototypes. **www.3ds.com/simulia**

DataDirect Networks — Booth: 510

DDN – The Leader in HPC Storage

For over 15 years, our innovative technology has been proven in-production in the world's largest & most demanding environments, to resolve high performance storage challenges.DDN solutions can be relied on to deliver unrivaled performance, scalability and availability, so it is no surprise we power over 2/3 of the Top100 fastest systems on the planet. Whether you need to accelerate your data-intensive applications & workflows, or start small and scale, DDN can help.

Visit DDN at booth #510 to meet with our European technical team and to see a live preview of our HPC Burst Buffer and DDN's Exascale Architecture – Infinite Memory EngineTM (IME)

datanami — Booth: 851

For the complete profile of this media sponsor, please see page 102.

Dell — Booth: 240

Michael Dell founded our company in 1984 in Austin, Texas, with an unprecedented idea – by selling computer systems directly to customers, we could deliver the most effective computing solutions to meet their needs. Today 96,000 team members around the world are committed to making technology work harder for customers and communities. Dell connects with more than 5.4 million customers every day – on the phone, in person, on **Dell.com** and, increasingly, through social networking sites. And customers can choose to do business with more than 60,000 partners registered with Dell and certified to operate as our agents. Our business is aligned to address the unique needs of large enterprises, public institutions (healthcare, education and government), small and medium businesses, and consumers. We ship more than 110,000 systems every day to customers in 180 countries – that's more than one every second - and make technology more accessible to people and organizations around the world.

Deutsches Klimarechenzentrum (DKRZ) — Booth: 950

The national HPC center DKRZ provides high performance computers, high capacity data storage and management, and superior service for German climate research. The earth cannot be experimented with. Therefore, DKRZ's computer systems are the laboratory for climate modelers. DKRZ operates an archive for the extremely large volumes of climate model data and has the scientific knowledge to manage it.

DINI Group — Booth: 854

Located in La Jolla, California, The Dini Group is a professional hardware and software engineering firm specializing in FPGA boards, high performance digital circuit design and application development. The Dini Group is ready for any projects you may have. Look around to see what we have to offer. For sales, employment, or any other information don't hesitate to contact us.

Dr. Markus Blatt – HPC-Simulation-Software & Services — Booth: 813

Dr. Blatt provides tailor made simulation software that scales. Dr. Blatt is the author of one of the most scalable algebraic multigrid methods and coauthor of DUNE. Over 10 years of hands on experience in scientific software development for supercomputers, scientific support, and the power of massively parallel open source components for simulation software will let you explore new frontiers.

DSSD Booth: 471

E4 Computer Engineering Booth: 363

E4 Computer Engineering designs and manufactures complete HPC & Enterprise solutions for both industrial and scientific research. Our focus is on HPC but our expertise extends to all segments of IT. E4 is well known and appreciated by prestigious worldwide organizations. We design each system individually to deliver highly personalized, cost effective and power saving solutions.

Echostreams Innovative Solutions Booth: 811

Echostreams Innovative Solutions LLC is a US based white-box OEM/ODM solution platforms provider, committed to turn creative ideas into problem-solving innovative products. Echostreams partners with technology leaders and solution integrators to offer purpose-built solutions to companies who are supporting the world's IT Infrastructures. Echostreams' products can be found on **www.echostreams.com**

EMC Booth: 853 co-exhbitor of Grau Data

EMC Corporation is headquartered in Hopkinton, Massachusetts, USA. EMC offers data storage, information security, virtualization, analytics, cloud computing and other products and services that enable businesses to store, manage, protect, and analyze data.

EMCL Booth: 721

The Engineering Mathematics and Computing Lab (EMCL) is a research group at the Interdisciplinary Center for Scientific Computing at Heidelberg University. The EMCL currently pursues 4 major research themes: Green High Performance Computing, Computational Science and Engineering, Data Analysis, and Uncertainty Quantification.

EnterpriseTech Booth: 851

For the complete profile of this media sponsor, please see page 102.

EPCC, Edinburgh University Booth: 920

EPCC is a unique centre for advanced computing and the management and use of data. We research and develop novel computing solutions; write software; manage computing and data systems and provide HPC and data-related training. Our combination of resources and expertise is unmatched by any European University. Clients and partners include local and global industry, government and academia.

ETP4HPC Booth: 923

ETP4HPC is an open industry-led forum with both industrial and academic members. The ETP4HPC aims to improve the competitiveness of European HPC industry, benefiting the entire European economy. The ETP4HPC defined a Strategic Research Agenda (SRA) for the HPC technology and collaborated with the European Commission in driving HPC research programs within H2020.

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ETRI Booth: 815

MAHA supercomputing system is aimed to be developed 300 TeraFLOPS system for bio-informatics applications like human genome analysis and protein-protein docking. It consists of computing hardware, file system, system software, bio-applications and designed to utilize heterogeneous computing accelerators(i.e., GPGPUs and MICs) to get more performance/$, performance/area, and performance/power.

European Exascale Projects Booth: 833

The European Exascale Projects encompass all Exascale research efforts funded by the European Commission. To resolve the challenges of the Exascale future the projects address relevant research areas: innovative approaches to hardware design, programming models and application development. All projects are present: DEEP & DEEP-ER, Mont-Blanc & Mont-Blanc2, CRESTA, EPiGRAM, Numexas and EXA2CT.

European Open File System (EOFS) Booth: 820

The EOFS (European Open File Systems Cooperative SCE) was founded on 15th December 2010 in Munich as a Non-Profit Organization. The purpose of EOFS is to promote the establishment and adoption of open source parallel file systems, sustain and enhance its quality, capabilities and functionality and ensure that requirements of European organizations, institutions and companies are upheld.

Eurotech Booth: 511

Eurotech is a global company based in Italy and with subsidiaries in Europe, North America and Asia. The Eurotech HPC division has more than 15 years of experience in designing and manufacturing HPC systems, built on novel architectures, resulting from a continuous R&D effort in collaboration with the most important research institutes in Europe. Eurotech HPC has deployed and maintained HPC solutions to a variety of customers, delivering value with innovative technology, energy efficiency, computational density and reliability.

EXTOLL Booth: 151

EXTOLL GmbH offers high-performance networking technology for HPC. The EXTOLL network technology has been designed for cutting-edge performance from scratch using a holistic optimization approach. The EXTOLL interconnection shows superior performance figures with respect to latency, message rate and bandwidth.
Don't miss the exciting news about our novel EXTOLL ASIC "Tourmalet" at booth #151!

Fabriscale Technologies Booth: 751

Fabriscale specialises in fabric management software with an emphasis on smart algorithms that simplify network configuration, management and routing. The Fabricscale Fabric Manager is our first product, which will be announced at ISC'14. The Fabriscale Fabric Manager for InfiniBand shows superior routing performance and fast fault-tolerance in the sub-second range.

FAST LTA AG **Booth: 500**

FAST LTA specializes in COLD Storage – Cost Optimized Linear Disk Storage. Thanks to unique technologies, our hard-disk based storage solutions are highly secure, cost optimized and low maintenance. They have been proven throughout thousands of installations in health care, government/public and industry.
FAST LTA has been certified according to ISO9001 and meets highest quality standards.

Finisar **Booth: 462**

Finisar is a global technology leader for fiber optic subsystems and components. For 25 years, Finisar has provided critical optics technologies to system manufacturers to meet the increasing demands for network bandwidth and storage. Visit booth 462 to learn more about how to optimize your data center and HPC applications with high density optical interconnects from the leader in optics.

Flytech **Booth: 210** co-exhibitor of Samsung

Flytech is a 25 year old company specialized in the design, build and management of high efficiency HPC Clusters, Cloud Computing and Big Data. We provide "state of the art" solutions with an outstanding price/performance and power-efficient systems.

Fraunhofer Institute for Industrial Mathematics ITWM **Booth: 860**

The Competence Center for HPC, located at Fraunhofer ITWM, is supporting industry in developing and using HPC applications and tools. We offer the Fraunhofer Parallel File System FhGFS and GPI – Global Address Space Programming Interface. With GPI-Space we present a new technology for more productive parallel application development and BIG Data Analytics – a solution beyond Hadoops capabilities.

Fraunhofer Institute SCAI **Booth: 472**

The Fraunhofer Institute for Algorithms and Scientific Computing SCAI conducts research in the field of computer simulations for product and process development. SCAI designs and optimizes industrial applications, implements custom solutions for production and logistics, and offers HPC and Cloud solutions. Services are based on industrial engineering and methods from applied mathematics and IT.

Fujitsu Limited **Booth: 530**

Fujitsu has been leading the HPC market over 30 years and it provides a broad range of computing products such as SPARC64-based PRIMEHPC supercomputers and x86-based PRIMERGY clusters, software and solutions to meet comprehensive HPC requirements. Fujitsu is the world's fourth-largest IT services provider and No.1 in Japan. Approximately 170,000 Fujitsu employees support customers in more than 100 countries. Through our constant pursuit of innovation, Fujitsu aims to contribute to the creation of a networked society that is rewarding and secure, bringing about a prosperous future that fulfills the dreams of people throughout the world.

Gauss Centre for Supercomputing e. V. **Booth: 940**

The Gauss Centre for Supercomputing (GCS) combines the High Performance Computing Centre Stuttgart (HLRS), the Jülich Supercomputing Centre (JSC), and the Leibniz Supercomputing Centre (LRZ), Garching/Munich into Germany's Tier-0 supercomputing institution. GCS provides the largest and most powerful supercomputer infrastructure in Europe to serve a wide range of industrial and research activities.

GiDEL **Booth: 750**

GiDEL was founded in 1993 as a high-end system development and integration company. With our project-level approach, we created several powerful and advanced architectures for high-performance computation development. Today, GiDEL is one of the leading companies providing integrated solutions for system builders in the field of:

- Banking
- Bio informatics
- Molecular Dynamics
- Seismic Exploration
- Life Science
- Encryption Algorithms
- Research and academy
- Unique recording and playback systems
- Video Applications
- Acquisition with Image Processing
- Algorithm acceleration

GIGABYTE Technology **Booth: 501**

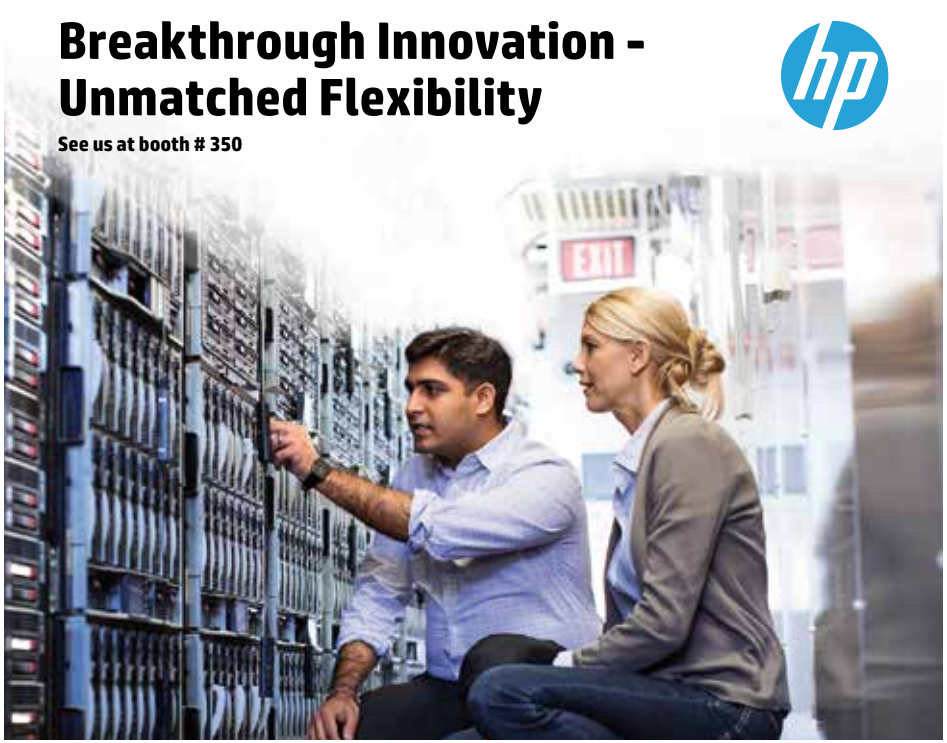
GIGABYTE was founded in 1986, establishing an uncontested position in continuous technological innovation. Known for our excellent motherboards and graphics cards, we are also a leading creator of high performance systems for professionals. From Server and Datacenter hardware to embedded computers, GIGABYTE is a provider of cutting edge solutions for your mission-critical computing needs.

Go Virtual Nordic AB — Booth: 631

Go Virtual was founded in 2002 with the mission to supply virtual simulation technology to the market enabling customers to bring their innovative and customer focused designs faster, more accurate, and more cost effective to the market. With Products like CFD++, Theseus, Pointwise , FieldView together with Supercomputers from Hewlett Packard and Dell we have products to support our mission.

Gompute — Booth: 262

Gompute delivers comprehensive solutions for High Performance Computing, in-house, in-the-cloud or both. With over 10 years' of experience providing solutions and services to the Engineering communities, we deliver a collaborative and productive work environment for geographically distributed engineering teams. Combined with Gompute On-Demand, we ensure that you have the option to either scale out or completely host your HPC environment, ranging from 1 -> 1000's of cores in a Gompute Datacenter.



GRAU DATA — Booth: 853

GRAU DATA is a flexible medium-sized company with its headquarters in Schwäbisch Gmünd, Germany. Since 2007, GRAU DATA is focused on the development and the sales of archiving and filesharing software products. GRAU DATA is indirectly or directly represented by partners in all major European countries and in the US. Numerous companies and public institutions use solutions from GRAU DATA.

Greek Research and Technology Network — Booth: 953

The Greek Research and Technology Network (GRNET) is a state–owned company, operating under the auspices of the Greek Ministry of Education – General Secretariat for Research and Technology. Its mission is to provide high–end e-Infrastructure services to the academic, research and educational community of Greece; to link these with global initiatives and to disseminate ICT to the general public.

Green Revolution Cooling — Booth: 260

Green Revolution Cooling provides the most powerful, efficient, and cost-effective solutions for data center cooling. The CarnotJet™, a liquid submersion cooling system for any OEM server, uses a mineral oil with 1,200x more heat capacity by air, which results in 95% less cooling power used, 10-25% less server power used, dramatically reduced infrastructure costs and increased server reliability.

Hewlett-Packard — Booth: 350

As a world-leading information technology company, HP applies new thinking and ideas to create more simple, valuable and trusted experiences with technology. Our focus is to continuously improve the way our customers live and work through technology products and services, from the individual consumer to the largest enterprise. More information about HP's products and services can be found at **www.hp.com**. Specific details about HP's High Performance Computing products can be found at **www.hp.com/go/hpc**. Information about HP's worldwide conference series HP-CAST with a focus on all aspects of HPC, HPC Clouds, Scalable Computing and ultra-high energy efficient systems can be found at **www.hp-cast.org** or at **www.hp.com/go/hpcast**.

HLRN — Booth: 931

The North-German Supercomputing Alliance is a joint project of seven North-German states. HLRN operates a distributed 685 TFlop/s Cray XC30 supercomputer at the sites Zuse Institute Berlin and Leibniz Universität Hannover. We deliver high-performance computing services to scientific institutions and support a competence network bringing together users and scientific consultants.

HLRS Stuttgart — Booth: 940 co-exhibitor of Gauss

HLRS – a European Tier o center and member of GCS – supports German and European researchers with leading edge supercomputing technology and services. Industrial support goes through hww GmbH. Special support for SMEs is provided through SICOS GmbH.

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HPC Advisory Council — Booth: 280

The HPC Advisory Council's mission is to bridge the gap between high-performance computing (HPC) use and its potential, bring the beneficial capabilities of HPC to new users for better research, education, innovation and product manufacturing, bring users the expertise needed to operate HPC systems, and provide application designers with the tools needed to enable parallel computing.

HPC Magazine — Booth: 711

For the complete profile of this media sponsor, please see page 102.

HPC Wales — Booth: 502

High Performance Computing (HPC) Wales is a company formed between the Universities and the private sector in Wales to provide integrated supercomputing services to businesses and researchers. Host to the UK's largest distributed supercomputing network, HPC Wales offers access to supercomputing hardware, software, training and support.
Please visit **www.hpcwales.co.uk** to find out more.

SPOTLIGHT ON Archival Storage for Technical Computing Infrastructures

While processors or accelerators may be quick to enter the HPC spotlight, when it comes to meeting growing data demands, storage is often the unsung hero. For organizations looking to scale out, innovations in storage technology offer a surplus of options. Join us and see first-hand how the industry's major players are leveraging storage tools from tape to flash and find out how you too can rein in your growing datasets.

This 28 page compendium covers:
- **Balancing disk and tape storage**
- **Active archiving and retrieval software**
- **Consumer technologies for commercial data storage**

... and more!

HPC wire ENTERPRISETECH

Download Now

HPCwire — Booth: 851

For the complete profile of this media sponsor, please see page 102.

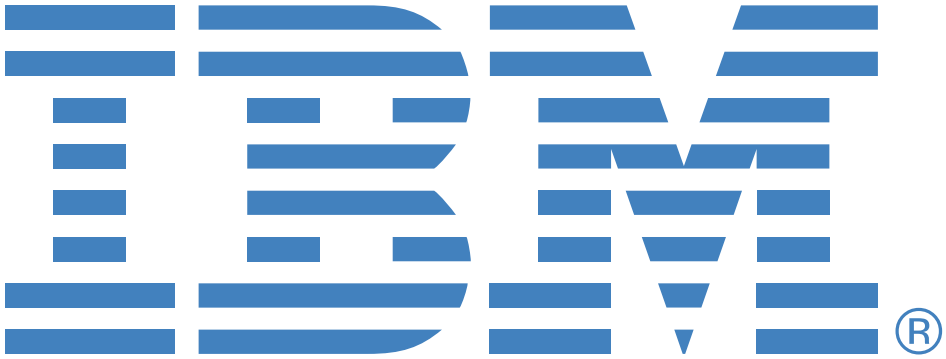
Huawei — Booth: 241

Huawei is a leading global ICT solutions provider. Through our dedication to customer-centric innovation and strong partnerships, we have established end-to-end capabilities and strengths across the carrier networks, enterprise, consumer, and cloud computing fields.
We are committed to creating maximum value for telecom carriers, enterprises, and consumers by providing competitive ICT solutions and services. Our products and solutions have been deployed in over 140 countries, serving more than one third of the world's population. By leveraging our strong R&D capabilities and comprehensive technical expertise, Huawei's strategy in the enterprise domain focuses on close cooperation and integration with partners to deliver a wide range of highly efficient customer-centric ICT solutions and services that are based on a deep understanding of customer needs.

Exhibition, Exhibitor & Media Sponsor Profiles ISC'14

IBM **Booth: 410**

Realize faster time to value with IBM Technical Computing, intuitive & powerful systems and pre-integrated solutions for compute-intensive and big data application acceleration. IBM High Performance Technical Computing Solutions deliver powerful, innovative HPC Cloud, Big Data, workload management, and system capabilities to address customers' most challenging and complex business, product or science challenges. IBM Platform Computing software accelerates time-to-results and reduce costs with powerful workload, resource and HPC cloud management. IBM Platform HPC help ensure faster time-to-cluster-readiness, simplified management and ease of use in a single integrated product.
For more information visit **ibm.com/technicalcomputing** or **ibm.com/platformcomputing**.



Iceotope **Booth: 463**

Iceotope, pioneers of Total Liquid Cooling delivering advanced liquid cooled HPC systems to academia, industry and government. Iceotope enables better performance, for significantly less energy and allows HPC sysadmins greater freedom when designing, locating and building facilities. Iceotope doesn't require chillers or air-conditioning, therefore significantly reducing infrastructure costs.

ICT Innovation for Manufacturing SMEs (I4MS) **Booth: 713**

CloudFlow – Computational Cloud Services and Workflows for agile Engineering. CloudFlow integrates computational services in the Cloud into the engineering workflows of manufacturing companies (SMEs). CloudFlow aims at enabling engineers to access services on the Cloud spanning domains such as CAD systems, CAM systems, CAE (CFD) systems and PLM. Integrated workflows will leveraging HPC resources.

Inspur **Booth: 470**

INSPUR, one of the builders of Tianhe2, has computing servers, management system, and the optimization services of GPU & MIC, and being involved in many China national HPC projects. (**en.inspur.com**)

Intel **Booth: 540**

Intel Corporation is the world leader in silicon innovation and develops technologies, products and initiatives to continually advance the pace of your science and discovery. Founded in 1968 Intel introduced the world's first microprocessor in 1971. Today, we supply the computing and communications industries with chips, boards, systems, and software building blocks that are the "ingredients" of computers, servers and networking and communications products.
These products are used by industry members to create advanced computing and communications systems. Our mission is to be the preeminent building block supplier used in consumer, enterprise and technical computing. We believe in innovation. We're driven by it. We live by it and it's this principle that led us to create the world's first microprocessor back in 1971. Today, Intel is behind everything from some of the fastest processors in the world to the fabrics that power high-speed Internet. The technology we invent today will shape the world's future.
See **www.intel.com/pressroom**

Irish Centre for High End Computing (ICHEC) **Booth: 925**

The Irish Centre for High-End Computing (ICHEC), began as Ireland's national HPC centre. In addition to providing HPC resources, support & training to Universities & other 3rd level bodies, it increasingly carries out technology transfer and enablement work. In particularly this is in support of Irish based companies, both large and small, as well as with public sector & semi-state organisations.

iVEC **Booth: 761** co-exhibitor of NCI

iVEC is a joint venture between the CSIRO and the four public universities. In operation for over 14 years, it provides advanced computing services to Australian researchers and manages the Pawsey Supercomputing Centre.

JARA-HPC **Booth: 843**

In JARA RWTH Aachen University and Forschungszentrum Jülich have established a model that is unique in Germany in order to overcome the insularity of university and non-university research and teaching. Scientists of JARA-HPC unite the specialist know-how of highly parallel computing on supercomputers with the respective special knowledge of physicians, engineers, and other scientific researchers.

Jülich Supercomputing Centre **Booth: 940** co-exhibitor of Gauss

Jülich Supercomputing Centre (JSC) at Forschungszentrum Jülich is currently operating the most powerful German supercomputer, JUQUEEN, providing resources to researchers through national (GCS, NIC) and European (PRACE) peer-review procedures. JSC has been fostering scientific computing since 1983, conducting interdisciplinary, supercomputer-oriented scientific research, and offering education and training.

Kalray **Booth: 724**

KALRAY is a fabless semiconductor & software company proposing disruptive manycore processors for high performance applications.
Applications:
- Oil & Gas Geophysics (RTM & FWI)
- Video (Transcoding, Encoding & Decoding)
- Data Security (Crypto & Homomorphic Encryption)
- Finance (MapReduce Monte Carlo / Black-Scholes & HFT)
- Life Science (NN & DNA)

www.kalray.eu/HPC

Kingston Technology Europe **Booth: 501** co-exhibitor of Gigabyte Technology

Kingston Technology is the world's independent memory leader and its memory modules, SSDs and free KingstonConsult & KingstonCare services are specifically designed to address both the technical and business demands of your servers and Data Centres.

KISTI **Booth: 810**

KISTI(Korea Institute of Science and Technology Information) is a government-funded research institute designed to maximize the efficiency of science and technology R&D and support high-tech R&D for researchers. NISN(National Institute of Supercomputing and Networking) of KISTI has provided cyber R&D infrastructure for scientists and engineers to generate their R&D performance better and faster.

KIT / SCC **Booth: 942**

The Steinbuch Centre for Computing is the information technology centre of Karlsruhe Institute of Technology and ranks among the largest scientific computing centres in Europe. SCC stands for internationally visible research, development and innovation in the fields of high-performance computing, data-intensive computing, secure IT federations, and GridKa, the German tier 1 centre of WLCG.

Leibniz Supercomputing Centre **Booth: 940** co-exhibitor of Gauss

Leibniz Supercomputing Centre (LRZ) is one of Germany's national HPC centers and is involved in national and international projects such as PRACE and LCG and is part of the GCS. LRZ operates the highly energy-efficient 3 Pflop/s system SuperMUC.

Macle GmbH **Booth: 501** co-exhibitor of Gigabyte

Macle is a leading Distributor for Server and Storage Hardware. Customers benefit from cost-effective solutions, individual services, large Inventory of Systems, options and spare parts from leading manufacturers like HP, IBM, ASUS, GIGABYTE, ASROCK.

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Discover Your Parallel Universe. Look Inside.

Parallel is your path forward. Come to the Intel booth to see real-world examples of organizations and companies who have gone parallel and reached their breakthrough discoveries faster. Join Intel and HPC partners for product demonstrations and discussions on the importance of parallelizing software for modern hardware architectures while maintaining a common code base. You'll also get a sneak preview into the future as we discuss the importance of hardware integration to reach exascale and beyond.

Visit Us in Booth #540

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Megware Computer **Booth: 120**

HPC is MEGWARE´s core business. For more than 14 years we have focused on this activity. Our systems are used for computing purposes in industries as well as in universities and research institutions from Germany and Europe. From assembling and testing the complete system up to the handing-over on a turn-key basis and any required service – you receive all you need from one single source.

Mellanox **Booth: 531**

Mellanox Technologies (NASDAQ: MLNX) is a leading supplier of end-to-end InfiniBand and Ethernet interconnect solutions and services for servers and storage. Mellanox interconnect solutions increase data center efficiency by providing the highest throughput and lowest latency, delivering data faster to applications and unlocking system performance capability. Mellanox offers a choice of fast interconnect products: adapters, switches, software and silicon that accelerate application runtime and maximize business results for a wide range of markets including high performance computing, enterprise data centers, Web 2.0, cloud, storage and financial services.
More information is available at **www.mellanox.com.**

Memorysolution GmbH **Booth: 210** co-exhibitor of Samsung

Memorysolution GmbH is one of the world's leading distributors for memory upgrades and Enterprise SSDs. We offer a wide range of SSDs, motherboards, servers, and more as an official Distributor of Samsung, Hynix, Nanya, Micron, Supermicro and Toshiba.

Moscow State University **Booth: 753**

Lomonosov Moscow State University, the oldest and the largest university in Russia, was established in 1755. 40 000+ students, 2500+ full doctors, 6000+ PhDs, 1000+ full professors, 41 faculties. Supercomputing center of MSU is one of the world-leading petascale centers with strong fundamental science and a serious focus on Supercomputing Education.

Nallatech **Booth: 852**

Nallatech, a subsidiary of Interconnect Systems, Inc., is a leading supplier of FPGA-accelerated computing solutions. Nallatech designs and manufactures FPGA products for high performance computing applications and rugged embedded computing platforms. Customers benefit from lower costs, reduction in size, weight and power and improved performance.

National Center for High-performance Computing (NCHC) **Booth: 814**

Taiwan's National Center for High-Performance Computing (NCHC) is one of research laboratories under the National Applied Research Laboratories. The NCHC's mission is to be Taiwan's premier HPC resource provider by supporting local academia and industry with cutting-edge hardware and software resources, advanced R&D and application development, and professional training.

National Computational Infrastructure **Booth: 761**

National Computational Infrastructure (NCI) is Australia's national research computing service, offering comprehensive and integrated high-performance services. The largest facility in the Southern Hemisphere, NCI's infrastructure includes a new 1.2 petaflop HPC system, a 3,600 core high-performance compute cloud, persistent disk storage of more than 10 PBytes, and a new purpose-built data centre.

National Institute for Mathematical Sciences (NIMS) **Booth: 715**

National Institute for Mathematical Sciences performs research of mathematics and its application to various fields of sciences and engineering. The exhibition is managed by Extreme-scale Scientific Computing Team of NIMS. It is committed to fundamental researches on computational sciences ranging from mathematical analysis to practical implementation on parallel computers.

National University of Defense Technology (NUDT) **Booth: 263**

National University of Defense Technology (NUDT) is a comprehensive national key university of science, engineering, management, economics, and philosophy in China. The School of Computer Science undertake the education and research on high performance computing, circuit design, networks and communication, basic software, cloud computing and storage.
The world first class supercomputers, such as Tianhe-1A and Tianhe-2, have been developed by NUDT, and the project on the next generation of Tianhe supercomputer has been launched.

Exhibition, Exhibitor & Media Sponsor Profiles ISC'14

NEC Deutschland — Booth: 641

NEC is a leading provider of HPC, networks, and biometric solutions in Europe.
NEC delivers technology and professional services to academics and large enterprises. The NEC HPC solutions include complex and highly efficient Scalar and vector computing systems for aim of providing customers with sustained performance computing. Our team works closely with customers to assist in implementations of high performance applications and in the configuration and deployment of complex HPC systems to receive the greatest value from their IT investments. Highlights at the NEC booth are the NEC LX Series with effective sustained performance features, the NEC LXFS file system based on Lustre technology and the new NEC vector supercomputer, SX-ACE.

NICE — Booth: 230 co-exhbitor of NVIDIA

NICE delivers Technical Cloud Solutions to customers worldwide, optimizing and centralizing HPC and visualization resources, empowering distributed and mobile Engineering users to run batch and interactive 3D applications anywhere, over any network.

Numascale — Booth: 720

With Numascale's products you can have a large shared memory system at the price of a cluster oft he same size. The NumaConnect Card that plugs into standard servers makes this possible. The system run one single image standard operating system and applications from singe box systems can be blown up. There is virtually no limit to the number of cores and memory size Numascale can support. Numascale's has large installations with great uptime that run important applications that are hard to scale on other architectures. Applications from a wide variety of fields benefit from the product.

Numerical Algorithms Group (NAG) — Booth: 850

NAG has proven experience in developing and supporting production class HPC applications, both at the supercomputer level and at the mass market level of technical computing. NAG's strength is the breadth and depth of computational expertise available, with staff possessing experience as HPC end-users (across industry, defence and academia), as HPC service providers, and HPC software developers.

NVIDIA — Booth: 230

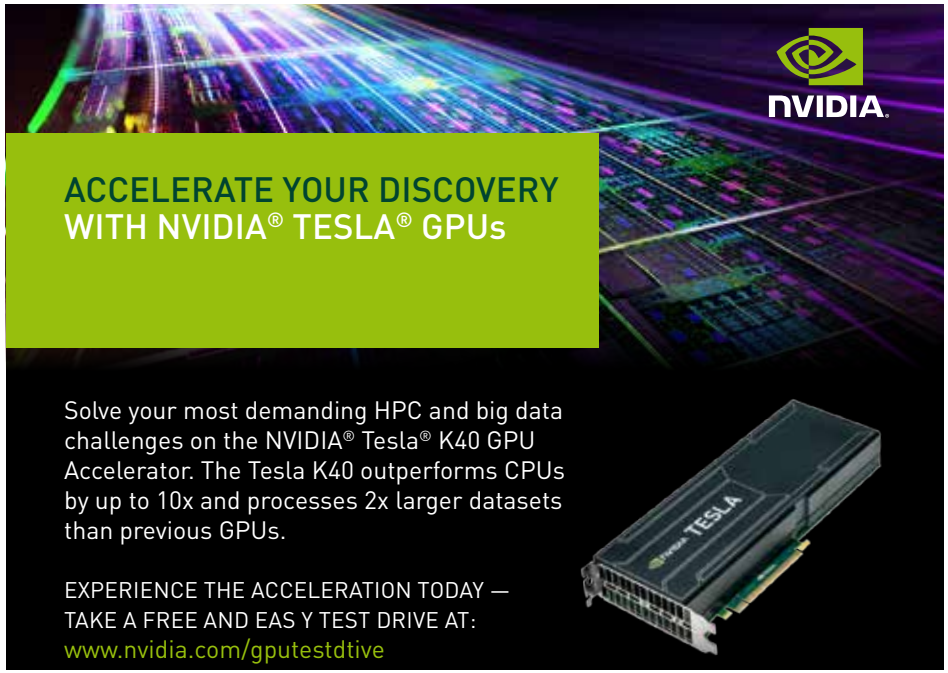
NVIDIA® awakened the world to computer graphics when it invented the GPU in 1999. From our roots in visual computing, we've expanded into supercomputing, mobile computing and cloud computing. With CUDA®, world's most pervasive parallel computing platform and programming model, engineers, scientists and researchers can easily access the unmatched computational performance of Tesla® GPU accelerators – accelerating application performance dramatically while advancing the frontiers of scientific discovery. **www.nvidia.com**.

Obsidian Strategics — Booth: 504

Obsidian Strategics™ is the developer of Longbow™ Technology,a family of communications products delivering very fast, lossless data transmission over optical networks using the InfiniBand protocol. Longbows are deployed in Military/ Intelligence programs, NASA and DOE laboratories and various civilian facilities over Campus, Metro, Regional or Global Area Networks.
See **www.obsidianstrategics.com**

One Stop Systems — Booth: 507

One Stop Systems (OSS) produces high-density, GPU-accelerated appliances and Flash storage arrays for a variety of performance-intensive applications in the HPC market. A leader in PCIe expansion, OSS' appliances attach large numbers of GPUs or Flash storage boards to one or multiple servers, adding thousands of compute cores and millions of IOPS to a multitude of HPC applications.



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Panasas **Booth: 742**

Panasas® ActiveStor® hybrid scale-out NAS appliances drive enterprise and research innovation by accelerating workflows and simplifying data management. ActiveStor solutions deliver high performance and reliability at scale from an appliance that is as easy to manage as it is fast to deploy. Featuring a fully parallel architecture that intelligently leverages SSD and SATA drive technologies, ActiveStor satisfies the needs of the most demanding big data workloads in energy, finance, government, life sciences, manufacturing, media, and university environments in more than fifty countries.

PNY Technologies Europe **Booth: 230** co-exhbitor of NVIDIA

PNY Technologies has a long history in the HPC market providing engineers, developers and researchers with cutting-edge NVIDIA® Quadro™ and Tesla™ Solutions and becoming the European distributor of TYAN® Servers, based on NVIDIA® Tesla™ processors.

PRACE **Booth: 932**

The mission of the PRACE Research Infrastructure, composed of 25 Member Countries, is to enable high impact scientific discovery and engineering research and development across all disciplines to enhance European competitiveness for the benefit of society. PRACE seeks to realize this mission by offering world class computing and data management resources and services through a peer review process.

pro-com DATENSYSTEME **Booth: 410** co-exhibitor of IBM

Together with IBM´s HPC Teams and 24 years of experience, pro-com supports your HPC projects. Using the outstanding IBM Intelligent Cluster portfolio, pro-com offers CPU-, GPU and storage clusters with integrated cooling for optimized HPC solutions.

Q-Leap Networks GmbH **Booth: 762**

Q-Leap Networks is all about Linux Clustering Software. Core product is the Linux Cluster Operating System Qlustar (**www.qlustar.com**) featuring the superb cluster management software QluMan and its unique lightweight OS image technology to run any number of compute, storage or cloud nodes. Based on Qlustar, Q-Leap installs and operates Linux HPC/Storage Clusters for its customers since 2001.

Quantum **Booth: 561**

Quantum is a leading expert in scale-out storage, archive and data protection, providing solutions for sharing, preserving and accessing digital assets over the entire data lifecycle. From small businesses to major enterprises, more than 100,000 customers have trusted Quantum to address their most demanding data workflow challenges. See how at **www.quantum.com/customerstories**.

Rapidio Trade Association **Booth: 505**

The RapidIO Trade Association directs development and drives adoption of the RapidIO fabric architecture. RapidIO fabrics deliver lower-latency, increased bandwidth efficiency, lower cost and lower power for performance critical computing applications. Detailed information on the RapidIO specification, products, design tools, member companies, and membership is available at **www.RapidIO.org**.

Rausch Netzwerktechnik GmbH **Booth: 140**

Since 1998, Rausch Netzwerktechnik is a trusted IT service provider for hosting- and datacenter-clients. With products and services Rausch offers high quality and reliability. Beyond that, Rausch counts on the development of power-saving and efficient server and storage systems through high packing density and by using efficient components. We look forward welcoming you at our booth at ISC.

Red Oak Consulting **Booth: 850** co-exhibitor of NAG

Red Oak Consulting is a boutique consultancy providing tailored, specialist advice to all parts of the HPC lifecycle. Red Oak has built up a substantial client base by offering expert advice on high-end computing technologies and their applications.

Riken **Booth: 731**

The RIKEN Advanced Institute for Computational Science (AICS) was established in Kobe, Japan, with the objective of pioneering forecasting science based on computer simulations. The K computer, jointly developed by RIKEN and Fujitsu, boasts 10 petaflops of computational power. In April in 2014, AICS began the development of an exascale supercomputer.

Rogue Wave Software **Booth: 560**

Rogue Wave provides development tools for mission-critical applications. Our solutions address the complexity of building software and accelerates the value gained from code across the enterprise. Our portfolio of complementary, cross-platform tools helps developers build applications. Our customers improve software quality and ensure code integrity, while shortening development cycle times.

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Rosta — Booth: 722

Founded in 1993 Rosta is a leading manufacturer in Russia for Xilinx FPGA based systems. At ISC'13 Rosta introduced new product – complete High Performance Solution based on world largest FPGA Xilinx Virtex-2000. This stand-alone 1U block RB-8V7 consist of eight FPGA with PCI Express gen 3.0 interconnect.

RSC — Booth: 640

RSC Group (**www.rscgroup.ru/en**), the leading Russian developer and system integrator of innovative energy efficient HPC and Data Center solutions, demonstrates RSC PetaStream™ – the revolutionary massively-parallel direct warm water cooled supercomputer delivered world's records of computing and power density of 1.2PFLOPS and 400kW per 1 m2 cabinet with 1024 Intel Xeon Phi 7120D.
The platform is focused to reach ExaScale level performance protecting SW investments and can be also successfully utilized for Big Data applications. RSC has proven it's liquid cooling, RSC Tornado cluster solutions and RSC BasIS software stack in a track record of projects since 2009, including Europe's largest Intel Xeon Phi system at Russian Academy of Sciences.

Samsung Semiconductor Europe — Booth: 210

The component businesses of Samsung Electronics come together as Device Solutions. As a leading company in the global electronics industry, Samsung Electronics has one of the widest product ranges of key component businesses Memory, System LSI and LED, which compose essential parts of the company's well-balanced business portfolio.
Samsung's Memory Business offers the industry's most advanced and extensive range of memory semiconductor products. As a leader in both the design and manufacture of memory semiconductor since 1993, the business provides key memory products including dynamic random access memory (DRAM), static random access memory (SRAM), NAND flash memory, Solid State Drives (SSD) and a range of green memory solutions for use in PC, server and mobile applications.
Samsung is also leading the industry in advancements of next generation DRAM and NAND flash technologies while nurturing future memory technologies. Samsung's System LSI Business designs and manufactures a variety of large scale integrated circuit (LSI) products and System-on-Chip (SoC) solutions, as well as offering foundry services. In the SoC area, Samsung is a leader in the creation of application processor (AP) for mobile devices such as smartphones and tablets.

SanDisk — Booth: 460 co-exhibitor of Avnet

For more than 25 years, SanDisk has been expanding the possibilities of data storage. Our products are used in the world's largest data centers, embedded in the most advanced mobile devices, and trusted by consumers worldwide.

ScaleMP — Booth: 551

ScaleMP is the leader in virtualization for in-memory high-end computing, providing higher performance and lower total cost of ownership as compared with traditional shared-memory systems. The company's Versatile SMP (vSMP) architecture aggregates multiple x86 systems into a single virtual x86 system, delivering an industry-standard, high-end shared-memory computer. vSMP Foundation aggregates up to 128 x86 systems to create a single system with up to 32,768 cpus and up to 256 TB of shared memory.

Scality **Booth: 955**

Scality provides software-defined object storage having unsurpassed scalability, availability, performance and economy. Scality integrates with NFS, S3, OpenStack and Hadoop environments. Scality delivers billions of files to tens of millions of users daily. Customers include 4 of the top 10 US cable operators, the second largest French Telco, top portals in Europe, and mobile operators in Japan.

scapos **Booth: 472** co-exhibitor of Fraunhofer SCAI

The scapos portfolio of advanced software solutions focuses on technical computing and software from research organisations and their spin-off companies. R&D beyond current HPC-related products includes the HPC-Cloud project Fortissimo.

Schäfer Ausstattungs-Systeme **Booth: 821**

IT-Systems develop, design and produce both standardised and custumised data centre and water-cooled server cabinet solutions, based on our company's extensive and future-orientated expertise. In addition, SCHÄFER also supplies an extensive range of rack solutions for network applications. A comprehensive, practice-based range of components and accessories rounds off our product portfolio.

science + computing ag **Booth: 340** co-exhibitor of Bull

science + computing ag (s+c), a subsidiary of the Bull group, offers IT services, solutions and software for the efficient utilization of complex computer environments in research, development and technical computing.

Scientific Computing **Booth: 954**

For the complete profile of this media sponsor, please see page 104.

Scientific Computing World **Booth: 824**

For the complete profile of this media sponsor, please see page 104.

Seagate Technology **Booth: 140** co-exhibitor of Rausch Netzwerktechnik

Seagate is one of the leading provider of hard drives and storage solutions.
Learn more at **www.seagate.com, www.facebook.com/SeagateDE** and **http://twitter.com/seagate_de**

SGI **Booth: 503**

SGI, the trusted leader in high performance computing (HPC) and Big Data, is focused on helping customers solve their most demanding business and technology challenges by delivering technical computing, Big Data analytics, cloud computing, and petascale storage solutions that accelerate time to discovery, innovation, and profitability. Visit **www.sgi.com** for more information.

SLURM **Booth: 832**

SchedMD is the core company behind the Slurm workload manager, a free open-source workload manager designed specifically to satisfy the demanding needs of high performance computing. Slurm is in widespread use at government labs, universities and companies world wide. As of the June 2013 Top 500 computer list, Slurm was performing workload management on five of the ten most powerful computers.

South Ural State University **Booth: 640** co-exhibitor of RSC

SUSU, the National Research South Ural State University (**www.susu.ac.ru**), has the most powerful regional (#3 in Top50) and the greenest university supercomputer center in Russia with RSC Tornado SUSU liquid cooled cluster based on Intel Xeon Phi.

Spectra Logic **Booth: 371**

Spectra Logic defines, designs and delivers innovative data protection with tape and disk-based backup, recovery and archive storage solutions. We challenge the data protection market's expectations with intelligent, integrated, simple-to-use backup and archive technologies with unmatched service and support to customers worldwide.

Stäubli Tec-Systems GmbH **Booth: 960**

Stäubli Connectors is one of the worlds leading manufacturer of quick couplings, multi couplings, robot tool changers and quick mould change systems for the plastic industry.
Stäubli offers standardized and individual solutions specifically for respective requirements. These innovative solutions are used in various industries.

STFC – Hartree Centre **Booth: 961**

The Hartree Centre with £65M of government investment, part of Scientific Computing in the Science & Technologies Facilities Council, UK is a research collaboratory in association with IBM. It works with IBM to collaborate with industry and academia to accelerate research and innovation:
- Enabling you to harness the power & potential of HPC and "Big-Data"
- Developing software for supercomputers.

Sugon Information Industry **Booth: 122**

Dawning strives to provide excellent application experience for vast Chinese users through its overall, professional and value-added services. In 2010, the "Nebula" ranked the second in the "35th supercomputer TOP500".Today, the hardware products, solutions, cloud computing service have been widely applied in education, meteorology, health care, energy, Internet, public utilities ,etc. Dawning has ranked the 1st in China Supercomputer TOP100 List issued by national authority successively for 5 years. According to the latest IDC data, Dawning has ranked the 6th in the world and 1st in Asia.

Supermicro **Booth: 430**

Super Micro Computer, Inc. or Supermicro® (NASDAQ: SMCI), a global leader in high-performance, high-efficiency server technology and innovation is a premier provider of end-to-end green computing solutions for HPC, Data Center, Cloud Computing, Enterprise IT, Hadoop/Big Data and Embedded Systems worldwide. Supermicro's advanced Server Building Block Solutions® offers a vast array of components for building highly scalable, energy-efficient, application-optimized, computing solutions. Products include servers, blades, GPGPU and Intel Xeon Phi Coprocessor based systems, workstations, motherboards, chassis, power supplies, storage, networking, server management software, SuperRack® cabinets/accessories and global onsite support delivering unrivaled performance and value. Founded in 1993 and headquartered in San Jose, California, Supermicro is committed to protecting the environment through its "We Keep IT Green®" initiative. The Company has Operations centers in Silicon Valley, the Netherlands and its Science & Technology Park and Logistics Center in Taiwan.

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T-Platforms
Booth: 441

T-Platforms provides comprehensive HPC systems, software and services with customer installations consistently included on the TOP500 worldwide list of most powerful supercomputers. Lomonosov, a T-Platforms system deployed at Moscow State University, is widely recognized as the #1 ranked supercomputer in Eastern Europe and ranked #37 worldwide (Top 500, November 2013).
T-Platforms is a one-stop source for companies looking for a competitive advantage in HPC technology. Its portfolio includes custom computational systems and management software often offered as a part of turnkey supercomputer center designs. T-Platforms also offers a unique added value with its ability to provide end-to-end modeling, simulation and analysis services. The company has deep technical talent with particular expertise in areas such as CFD, structural analysis, and other extreme computational disciplines.
T-Platforms is headquartered in Moscow, Russia, with offices in Germany and Taiwan.

Technische Universität Dresden
Booth: 855

The ZIH is a central scientific unit of the TU Dresden and provides support for all matters related to IT and computer science. As a competence centre for scientific and parallel programming, ZIH offers its HPC resources to academic users, and cooperates with other HPC centers. Own research activities include interactive performance analysis and visualization as well as automatic debugging tools.

The MathWorks
Booth: 634

MATLAB is a programming environment for algorithm development, data analysis, visualization, and numeric computation. MATLAB parallel computing tools allow users to easily scale from the desktop to high-performance environments to solve computationally and data intensive problems. Simulink is a graphical environment for simulation and Model-Based Design of multidomain dynamic and embedded systems.

The Portland Group
Booth: 230 co-exhibitor of NVIDIA

PGI supplies compilers and development tools for parallel computing. PGI offers high performance parallel Fortran, C and C++ for systems based on x64 CPUs from Intel and AMD, and accelerators from NVIDIA and AMD running under Linux, OS X and Windows.

Tokyo Institute of Technology
Booth: 830

The Global Scientific Information and Computing Center (GSIC) at Tokyo Institute of Technology hosts the 2nd fastest supercomputer in Japan, TSUBAME2.5 (1st in Japan in SFP), as well as conducting extensive research towards future HPC architectures, system software, big data convergence, as well as applications. Our prototype TSUBAME-KFC became #1 in the world in power efficiency metrics in 2013.

TOP500
Booth: 150

The TOP500 project was started in 1993 to provide a reliable basis for tracking and detecting trends in high-performance computing. Twice a year, a list of the sites operating the 500 most powerful computer systems is assembled and released. The best performance on the Linpack benchmark is used as performance measure for ranking the computer systems. The list contains a variety of information including the system specifications and its major application areas. For more information please visit **www.top500.org**.

Exhibition, Exhibitor & Media Sponsor Profiles ISC'14

Toshiba Electronics Europe GmbH **Booth: 251**

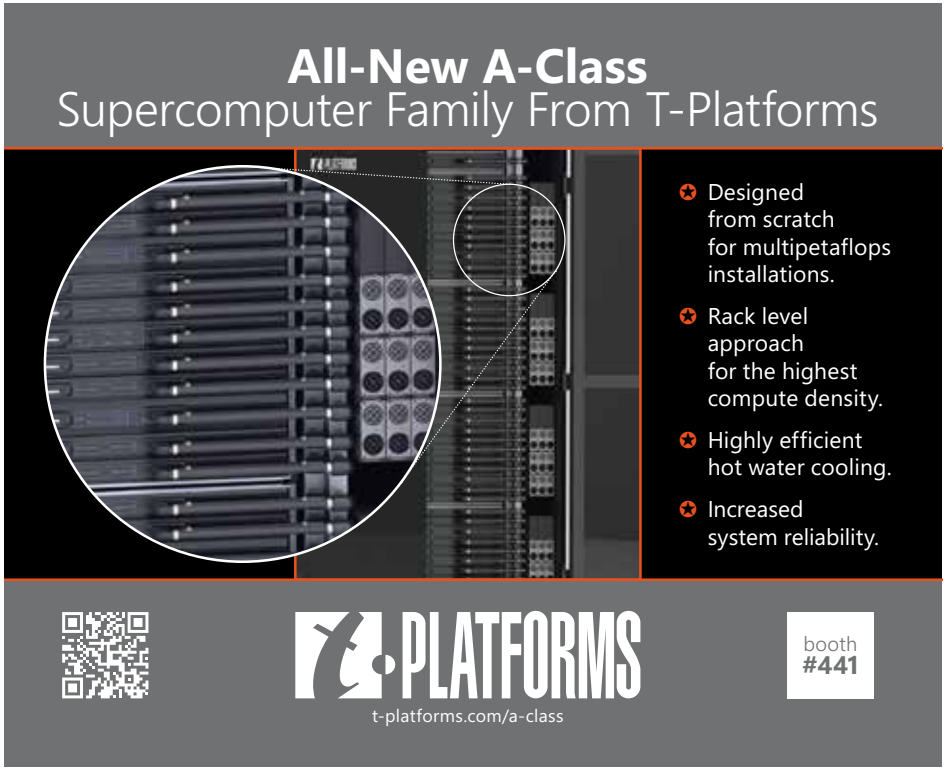
Toshiba Europe Storage Products Division has remained at the forefront of the storage industry for over 40 years and has revolutionized the design and development of storage devices. Its HDDs, SSDs and SSHDs can be found inside of the world´s leading cars, consumer electronics, computers and enterprise solutions. Customers are OEMs, system integrators and distributors within the EMEA region. As the inventor of NAND flash storage, Toshiba sets many of today´s industry standards for storage technology.

www.storage.toshiba.eu

transtec **Booth: 611**

transtec, founded in 1980, with its head quarters in Germany, belongs to the leading European experts in High Performance Computing. transtec has subsidiaries in Switzerland, Austria, UK, France, and the Netherlands.

We develop individual solutions exactly according to customer requirements and we support our customers throughout the IT system's life cycle. Small and medium-sized businesses as well as academic institutions respect our intelligent, easy-to-manage HPC solutions.



UNICORE Forum e.V. **Booth: 951**

UNICORE offers a ready-to-run Grid system including client and server software, making distributed computing and data resources available in a seamless and secure way. It is open source, conforming to the latest standards in service-oriented Grid architectures. Application integration, workflow support, data management, and various clients are provided to meet the needs of science and industry.

UNIVA **Booth: 360**

Univa, the Data Center Automation Company, is the leading provider of automation and management software for computational and big data infrastructures. Our products and global enterprise support give our customers the power to manage all their compute resources, no matter how big or where it is deployed. Many of the leading brands in the world depend on Univa's unsurpassed expertise, and premier services and support. Univa is headquartered in Hoffman Estates, Illinois, USA, with offices in Markham, ON, Canada, Munich and Regensburg, Germany.

For more information, visit w**ww.univa.com**.

Universidade de Sao Paulo **Booth: 952**

Created in 1934, the University of São Paulo is one of the most important institutions of research and higher learning in Brazil. Its undergraduate program consists of 249 courses, dedicated to all fields of knowledge, distributed in 42 units of learning and research and offered to more than 58 thousand students. The graduate program has 239 schools (332 MSc degree courses and 309 PhD courses).

University of Nizhni Novgorod **Booth: 752**

N.I. Lobachevsky State University of Nizhni Novgorod (UNN) was established in 1916 as a People's University. The University provides the basis for the development of higher education and a fundamental research system in the Nizhegorodsky region. UNN is one of the best classical universities and one of the largest HPC centers in Russia.

University of Tokyo **Booth: 930**

The Supercomputing Division, Information Technology Center, The University of Tokyo has the three main missions:
(1) providing services for supercomputer operations and supporting supercomputer users,
(2) doing research, and
(3) providing education. We are operating three supercomputer systems, Oakleaf-FX (FX10, 1.135 PFLOPS), Oakbridge-FX (FX10, 136.2 TFLOPS) and Yayoi (SR16k, 54.9 TFLOPS).

Verne Global **Booth: 571+760**

Based in Iceland and headquartered in the UK, Verne Global offers data center decision makers an affordable, 100% renewable power solution with unparalleled pricing predictability; a range of server density options; and efficiency without extra expense by using natural cooling.
Every business has some type of data that could reside in Verne Global's low cost, zero carbon data center, ranging from storing large amounts of analytical information to processing intensive design and modelling data. Existing customers are already seeing the benefits, including leading automotive manufacturer BMW.

VSB-Technical University of Ostrava **Booth: 922**

IT4Innovations National Supercomputing Center is an important part of e-Infrastructure of the Czech Republic focused on HPC research and services. The research activities address HPC problems in engineering, nanosciences, big data, disaster and traffic management. The center is currently operating the most powerful Czech HPC infrastructure and is planning its upgrade to petascale system in 2015.

Xyratex **Booth: 261**

Xyratex, a Seagate Company, is the largest OEM provider of enterprise data storage solutions including the award-winning ClusterStor™ family of high performance scale-out storage solutions. ClusterStor's software architecture tightly integrates the Lustre filesystem with Xyratex's proven enterprise-quality storage providing the only truly engineered HPC storage solution. Our products deliver unmatched availability, ease of use, price-performance and overall TCO leadership for HPC, Big Data and Cloud. Visit us at booth 261 or at **www.xyratex.com** to see our innovative data storage solutions.

Zenotech Ltd **Booth: 230** co-exhibitor of NVIDIA

Zenotech Ltd is redefining engineering online through the use of HPC Clouds delivering on demand licensing models together with extreme performance benefits by leveraging GPUs.

Media Sponsor Profiles

Admin Magazine

ADMIN is all about the real world of system administration. You'll find detailed, practical articles on topics such as security, network monitoring, clustering, and troubleshooting – for admins who manage Windows, Linux, Unix, and Solaris systems in heterogeneous environments. ADMIN is available in print as well as digital edition.

Autocad Magazin

The exclusively targeting of Autodesk users is the unique selling point of the AutoCAD & Inventor Magazin. This offers a unique opportunity to target an array of highly attractive potential customers of high quality with a single professional medium. AutoCAD & Inventor Magazin covers more than just IT subjects - we report on all aspects of professional life that are important for constructing engineers and planners. We focus especially on innovations in drive technology, automation technology, connectivity, construction components, fluid technology, electrical engineering and materials.

CAE-FORUM

CAE-FORUM is a communication and networking platform for experts in numerical simulation. The forum offers a company, sector and solver independent knowledge exchange and enables cross-border discussions and information exchange between them. Using these synergies the forum supports users, institutions and companies to demonstrate the wide range of numeric possibilities, and to improve its usage. HPC platforms are used to solve our biggest tasks and challenges.
We are happy to see the session CAE Solutions for HPC Clusters at ISC'14.

CERN Courier

CERN is undisputedly the hub of a global community of scientists advancing the frontiers of knowledge, and for more than 50 years CERN Courier has been serving this international community. This high-energy physics magazine covers international developments in particle physics and the achievements of scientists working in these and related fields. CERN Courier is internationally recognised as required reading for the high-energy physics community, and the magazine of choice for any researcher or scientist who needs to keep up to date.

DataCentre Solutions (DCS) Europe

DataCentre Solutions (DCS) Europe: The latest datacentre technology and management news and resources including cloud computing, virtualisation, applications, design & facilities management, green technologies, hosting & colocation, networks, telco, power & cooling, security, servers & OS, storage, data backup, business continuity and disaster recovery for CIOs, CTOs, IT Directors, Datacentre Managers and IT decision makers.
Sign up today on **http://dcseurope.info/register.php**

Datanami

Datanami is a communication channel dedicated to providing insight, analysis and up-to-the-minute information about emerging trends and solutions in big data. The publication sheds light on all cutting edge technologies including networking, storage and applications, and their effect upon business, industry, government, and research. Datanami examines the avalanche of unprecedented amounts of data and the impact the high-end data explosion is having across the IT, enterprise, and commercial markets.

Digital Engineering

The topic of digital engineering is to all all engineers active in development of and/or responsible for the practical implementation of innovative products, processes and production methods. Because competitive pressures are going to continue to increase, companies need to effectively connect all applications in the entire value chain.
As one of the leading journals in the construction and engineering sector, DIGITAL ENGINEERING Magazin provides a high utility value to designers, engineers and decision-makers. The solutions and examples presented here help them to develop better and more cost-effective products and processes.

EnterpriseTech

EnterpriseTech is a professional resource for news and intelligence covering the migration of high-end technologies into the enterprise and business-IT industry, with a special focus on high-tech solutions in new product development, workload management, increased efficiency, and maximizing competitive edge.
Delivering a powerful combination of world-class journalism, expert commentary, and in-depth analysis, EnterpriseTech clearly defines how the forces driving the integration of advanced computing technologies are merging with the key elements used for enterprise infrastructures.

HighPerformanceComputing Magazine

With several editions (Americas, Europe, France...), websites and TV channels, HPC Magazine brings you an actionable coverage of the HPC and Big Data news, technologies, uses and research. Visit us now at **www.hpcmagazine.eu**, subscribe for free and discover our authoritative in-depth cover features, actionable technology watch and development sections with full source code. Sponsors can reach us at **advertising@hpcmagazine.com**.

HPCwire

HPCwire is the leader in world-class journalism for HPC. With a legacy dating back to 1986, HPCwire is recognized worldwide for its breakthrough coverage of the fastest computers in the world and the people who run them.
For topics ranging from the latest trends and emerging technologies, to expert commentary, in-depth analysis, and original feature coverage, HPCwire delivers it all, as the industry's leading news authority and most reliable and trusted resource.

IEEE Spectrum

IEEE Spectrum is the flagship website of IEEE. Our blogs, podcasts, news and features stories, videos and interactive infographics engage our visitors with clear explanations about current and emerging technologies. We keep members informed about major trends and developments in technology, engineering, and science. IEEE Spectrum touches our members on every platform, whether they are coming to the site directly on their desktop or smartphone, through email newsletters or our digital facsimile edition, or following us via social networks like Facebook, Twitter and LinkedIn.

insideHPC

insideHPC: News without the Noise for High Performance Computing Professionals. InsideHPC is an independent website that distills news, strategies, products and services in the world of High Performance Computing for the HPC community. We hope you enjoy our onsite coverage of ISC14, and invite you to click here to sign up for our free newsletter for post event video's, demonstrations and more.

International Science Grid This Week

iSGTW is a weekly online publication that covers distributed computing and the science it enables. We report on the latest research across all scientific fields and provide in-depth analysis of all aspects of distributed computing technology, including grids, clouds, HPC, and more. iSGTW is also an online destination where you can find information about events, deadlines, and jobs.
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