The HPC Advisory Council's Mission

• Bridge the gap between HPC usage, users and its potential
• Bring to OEMs and users the human expertise that is needed to understand, operate and optimize an HPC system
• Guide users on how to improve efficiencies
  – For better research, education, innovation and product manufacturing
• Provide application designers with the tools to enable parallel computing
• Strengthen the qualification and integration of HPC system products
• Enable new users to leverage from the experience of seasoned HPC experts
• Help companies to develop better products, services and be more competitive
• Review future technologies and facilitate discussions about future developments in and for the HPC market
The HPC Advisory Council Members

- Ace Computers
- Allinea Software
- AMD
- Appro
- Blue Ridge Numerics
- C.S.I.R.O
- CD-adapco
- Clustercorp
- Colfax International
- Corning Cable Systems
- Cornell University Center for Advanced Computing
- DataDirect Networks
- Dell
- Dildy Enterprises
- Digital Waves
- Evergrid
- Fermi National Accelerator Laboratory
- GigaSpaces Technologies
- GraphStream Incorporated
- HCL Infosystems
- HP
- IBRIX
- IBSwitches.com
- Intel
- Interactive Supercomputing
- The Israeli Association of Grid Technologies (IGT)
- Lamprey Networks
- Lawrence Livermore National Laboratory
- Livermore Software Technology Corporation
- LSI Corporation
- Mellanox Technologies
- Microsoft
- Microway
- National Research Center for Intelligent Computing Systems (NCIC)
- NEC Corporation of America
- Netweb Technologies
- Network Equipment Technologies
- Numerical Algorithms Group
- Oak Ridge National Laboratory
- Obsidian Strategies
- Ohio State University
- Panasas
- ParTec Cluster Competence Center GmbH
- Penguin Computing
- Platform Computing
- RNA networks
- Scalable Graphics
- ScaleMP
- Schlumberger
- Silicon Mechanics
- Simula Research Laboratory
- SoftModule
- Sun Microsystems
- Swiss National Supercomputing Centre CSCS
- System Fabrics Works
- Tabor Research
- Terascale
- The Victorian Partnership for Advanced Computing
- TOTAL E&P RESEARCH & TECHNOLOGY
- Virginia Tech University
- Voltaire
- VXTECH
- W.L. Gore & Associates
- Wipro InfoTech
- Wolfram Research
- Z Research
- Sharan Kalwani, Global HPC Architect
HPC Advisory Council: Network of Experts

- Collaboration of highly technical and knowledgeable individuals
- Support network for consultations, questions, and answers
  - End-users, software vendors and systems builders
- Each of the HPC Advisory Council members participates in the Network
  - Utilize their vast experience to contribute into the Network knowledge base
- Issues raised are posted on the HPC Advisory Council web site
- HPC users or vendors are encouraged to utilize the Network of Experts
  - Use the form on the Council web site
HPC Advisory Council: Cluster Center

- An environment for development, benchmarks, testing
- The center provides on-site technical support
- Supports secure sessions onsite or remotely connection
- A unique ability to access the latest HPC technology
  - Even before it reaches the public availability
- All systems were contributed by the members
• **Conferences**
  – The HPC Advisory Council supports a variety of conferences throughout the year
  – Conference presentations are posted on the Council web
  – Partial list:
    • Supercomputing 2008
    • Oil and Gas High Performance Computing Workshop 2009
    • The 10th LCI International Conference on High-Performance Clustered Computing
    • 7th European LS-DYNA Conference
    • International SuperComputing (ISC09)
    • Cluster 2009
    • China HPC 2009
    • Supercomputing 2009

• **Best Practices**
  – The HPC Advisory Council provides best practices to improve applications productivity
  – Council is encouraging HPC users to provide their feedback and suggest applications/topics
  – STAR-CCM+ and STAR-CD, NAMD, WRF, MM5, CMPD, Eclipse, LS-DYNA, Fluent etc

• **Case Studies**
  – Real-world demonstrations, education and outreach

• **Vendor Content**
  – Members whitepapers and technical content
• HPC as a Service (HPCaaS)
• Virtualization in HPC
• HPC in a cloud

• Posted on the Council web:
  – Scheduling Strategies for HPC as a Service (HPCaaS) for Bio-Science Applications
HPC Advisory Council Activities

Best Practices
- Oil and Gas
- Automotive
- Bioscience
- Weather
- CFD
- Quantum Chemistry
- and more...

Network of Expertise

Cluster Center
End-user applications benchmarking center

HPC Outreach and Education

HPC Technology Demonstration

40Gb/s InfiniBand Distributed Visualization over SCinet

40Gb/s InfiniBand SCinet Participants
HPC Advisory Council: Joining

- HPC Advisory Council is a non-profit organization
- All activities are sponsored by the members
- Joining the council is free of change
- No legal agreements
  - Members are free to join and leave at any time
- For more info:
  - Chairman: shainer@mellanox.com, hpc@mellanox.com