



e-IRG workshop: Exascale

e-IRG Workshop
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Sergi Girona, e-IRG delegate, Spain
Barcelona Supercomputing Center



Participation

- Sergi Girona, BSC, Spain
 - HPC Cartography (EESI project)
- Sebastian von Alfthan, CSC, Finland
 - Exascale from technical point of view
- Participants
 - Controversy
 - Questions
 - Comments
 - Good for a workshop

Challenges on Exascale from technical view

- Power
 - New concept for a limited budget on power
- Concurrency
 - New programming model to enable high level concurrency
- Resiliency
 - Hardware
 - System level
 - Applications
- Programming
 - Heterogeneous computing
 - Independent of Architecture
 - Need to have defined in advance

EESI Cartography analysis Initiatives in Europe

- Funding
 - Exascale computing, software and simulation
 - Computing Systems
 - EU-Russia collaboration
- Collaborative Projects
 - The Partnership for Advanced Computing in Europe (PRACE)
 - European Exascale Software Initiative (EESI)
 - Progress towards Exascale Applications (TEXT)
- Public-private partnerships and collaboration
 - Exascale Innovation Center (EIC) – Germany
 - EX@TEC – France
 - Flanders ExaScience Lab – Belgium
 - Exascale Stream Computing Collaboratory – Ireland
 - Exascale Technology Centre – UK
- Several National Initiatives at country level

Check and plan for capacities at Europe on

- Hardware
 - European technology
 - Time for disruptive technology
- Software
 - Operating System
 - Compilers
 - Run time libraries
 - Programming models
- Applications
 - Aware of new inherent stochastic models
- Training
 - Expertise transferred to all levels
 - Reorganization for better harmonization scientist and IT expertise
 - Early transfer of new knowledge