Agenda

- The OpenMP ARB
- History of OpenMP
- Activities over the last year
- Activities for the next year
- Towards 4.0
The care of OpenMP is in the hands of the OpenMP Architecture Review Board (the ARB).

The ARB:

- Interprets OpenMP
- Writes new specifications - keeps OpenMP relevant.
- Works to increase the impact of OpenMP.

Organizations join the ARB - not individuals

- Current members
  - Permanent: AMD, Cray, Fujitsu, HP, IBM, Intel, Microsoft, NEC, SGI, Oracle/Sun, STMicroelectronics/PGI
  - Auxiliary: ASCI, cOMPunity, EPCC, LLNL, NASA, RWTH Aachen
New Members

- Rapid growth in membership
  - NVIDIA – U.S.
  - Texas Instrument – U.S.
  - CAPS Enterprise – France
  - Argonne National Laboratory – U.S.
  - Oak Ridge National Laboratory – U.S.
  - Los Alamos National Laboratory – U.S.
  - Texas Advanced Computing Centre – U.S.
OpenMP ARB Current Organization

OpenMP ARB (Administrative)
One representative per member

OpenMP Board of Directors
Josh Simons, VMware
Sanjiv Shah, Intel
Koh Hotta, Fujitsu

OpenMP Officers
Michael Wong, CEO
David Poulsen, CFO
Josh Simons, Secretary

OpenMP Committees (Actual Work)
One representative per member
Language, Bronis de Supinski
Marketing, Matthijs van Waveren
Agenda

- The OpenMP ARB
- History of OpenMP
- Activities over the last year
- Activities for the next year
- Towards 4.0
Pre-1997: Ancient times

- **SGI**: Merged, needed commonality across products
- **Cray**: With heavy influence from PCF and ANSI X3H5
- **KAI**: ISV - needed larger market
- **ASCI**: was tired of recoding for SMP’s. Urged vendors to standardize.
- **DEC**, **IBM**, **Intel**: Wrote a rough draft straw man SMP API

1997
1997-2011: A New Era

- **1997**: OpenMP FORTRAN 1.0
- **1998**: OpenMP C/C++ 1.0
- **1999**: OpenMP FORTRAN 1.1
- **2000**: OpenMP FORTRAN 2.0
- **2002**: OpenMP C/C++ 2.0
- **2005**: OpenMP 2.5
- **2008**: OpenMP 3.0
- **2011**: OpenMP 3.1

- Single Spec for FORTRAN, C/C++
- Task final, Affinity, Atomics, C/C++ + Min/Max reduction
- Tasks for irregular Parallelism, Better C++ support
Agenda

- The OpenMP ARB
- History of OpenMP
- Activities over the last year
- Activities for the next year
- Towards 4.0
Where are we today?

- OpenMP is 14 years old this year (1997)
- OpenMP is pushing into the embedded space with TI’s product
- OpenMP is in the accelerator space with PGI and Cray’s products and is being incorporated in the specification
- OpenMP on all laptop/desktop/SC products
- OpenMP in GCC, available for free to all
- OpenMP in all major vendor compilers
Activities over last year

- Thanks to Larry Meadows, past CEO
- 3 Language meetings
  - Santa Clara, Chicago, Barcelona
- IWOMP 2011 Chicago, Argonne NL
  - Acquired iwomp.com along with iwomp.org
- Website improvements
- SC11 and MultiCore Expo 2011
- And what everyone is asking about...
OpenACC

- A spinoff from 4 OpenMP Members
  - NVIDIA, PGI, Cray, CAPS
- To address immediate customer needs
- To hold the IP
- And to Beta test the OpenMP Accelerator implementation
- In time, will be folded back to OpenMP in some form
- And most importantly …
OpenMP 3.1 is released!

- Congratulations and thanks to Bronis de Supinski
  - and all of the omp-lang team for releasing a specification for the ages.
  - More on this in Bronis talk
- First compiler to support 3.1
  - GNU 4.7
  - Many more coming
Agenda

- The OpenMP ARB
- History of OpenMP
- Activities over the last year
- **Activities for the next year**
- Towards 4.0
OpenMP 4.0

- Bronis de Supinski continue to chair the committee
- Schedule to be fixed in advance (timeline and milestones, see our new calendar on site)
  - [http://openmp.org/calendar.html](http://openmp.org/calendar.html)
- Drive to 4.0
  - Accelerators, Error Model, Affinity, Tasks, Memory Model, new base language
Connect OpenMP with Users

- Hold our leadership in HPC community
- Aggressive expansion into non-traditional OpenMP areas
  - Oil&Gas, Financial, Biotechs, graphics, games, consumer electronics
  - To be discussed in OpenMP Lang
  - And ARB F2F meetings
Where are OpenMP Users?
Lang Meeting coming near you

- Lang Committee Telecons weekly
  - Active Subgroup Telecons weekly

- Move Language meetings close to OpenMP vendors/users (in NA, Europe/Asia/SA)
  - Solicit hosts for OpenMP Language meetings

- Upcoming in 2012
  - San Francisco - Silicon Valley Companies
  - Rome (IWOMP SC chair report) - CASPUR
    - We have a guest surprise
  - Toronto (tentative) - IBM
Do more with openmp.org

- Active News update and Discussion Forum
- Tutorial Material
- Google calendar schedule
  - [http://openmp.org/calendar.html](http://openmp.org/calendar.html)
- Gather info on Who Uses OpenMP / How?
- More frequent, scheduled press releases
- Extend beyond HPC Tradeshows
  - Multicore/Embedded Expo, ISC? SIGGRAPH?
  - Oil and Gas, Financial, BioTech, CES?
  - E3/GDC
Starting with SC 11

- Many tutorial sessions
- BOF session
- OpenMP Booth
  - VIP segment
  - Demo courtesy of RWTH Aachen
  - Hand outs from many companies
  - 3.1 Summary cards
Agenda

- The OpenMP ARB
- History of OpenMP
- Activities over the last year
- Activities for the next year
- Towards 4.0
OpenMP 4.0

- See Language chair report
- Aiming for Nov 2012