OMPT/OMPD OUTBRIEF

Scalable Tools Workshop 2016

Session Wednesday 8-10am
In combination with OpenMP Tools WG TelCon

Ongoing Work on OpenMP Tool Interfaces

- OpenMP Tools Interface (OMPT)
  - 1st party interface as integral part of the runtime system
  - Target: performance analysis and correctness tools
  - Combination of passive state tracking and active callbacks
  - “Optional” and “Mandatory” components
  - Mechanism to allow “clean” stack traces
- OpenMP Debug Interface (OMPD)
  - 3rd party interface for external debuggers
  - Separate address space, but closely coupled with runtime
  - DLL loaded into debugger to interpret data from target process
  - Similar design as pthreads debugging or MPI message queues
  - Follows OMPT concepts and definitions

Discussion during breakout

- Technical Details on OMPT
  - Boolean representation
  - Exact definition of frame pointers across runtime
  - Callback events and order for OpenMP target directive
  - Options for fine grain control of loop schedule
- Status of OMPD (in addition to Ignacio's talk)
  - Tracking changes in OMPT
  - Definition of parent task
- Integration Discussion (OMPT)
  - Next step for OMPT: inclusion into OpenMP specification
  - Target: inclusion into pre OpenMP 5.0 draft (this Nov.)
  - Working on organizing work for moving from TR to Spec
  - Defined contribution process

Status and Call for Help

- OMPT specification basically complete
  - Based on original TR2, but significantly expanded (incl. target)
  - https://github.com/OpenMPToolsInterface/OMPT-Technical-Report
  - Runtime prototypes in LOMP and Intel/LLVM
  - Tools: HPCToolkit, Open|SpeedShop, Caliper, Score-P, TAU, …
- Started working turning this into OpenMP 5.0 text
  - Manual process, targeted to be fully complete in 10/16
  - Could use more help – moving text, reviewing, …
  - Please let John and me know, if you are interested
- OMPD specification coming along as well
  - https://github.com/OpenMPToolsInterface/OMPD-Technical-Report
  - Initial prototype (runtime and tools) available and working well
  - Still working on target support