VI-HPS

HLRS

PRACE

17th VI-HPS Tuning Workshop

HLRS Stuttgart

23-37 February 2015

17th VI-HPS Tuning Workshop (HLRS)

- Tools presenters
  - Florent Lebeau (Allinea)
  - Judit Giménez & Germán Llort (BSC)
  - Aniello Esposito (Cray)
  - Tobias Hilbrich & Ronny Tschüter (TU Dresden)
  - Ilya Zhukov (JSC)
  - Michael Firbach & Yury Oleynik (TU Munich)
  - Joachim Protze & Felix Münchhalfen (RWTH)
  - Andres Charif-Rubial & Emmanuel Oseret (UVSQ)
- Local organization: José Gracia (HLRS)
  - Sponsor: GCS PRACE Advanced Training Centre

Outline

Monday 23rd February

- 09:00 (registration)
- 09:30 Welcome
  - Introduction to VI-HPS & overview of tools
  - *Hornet* Cray XC40 computer system & software environment
  - Building & running NPB-MZ-MPI/BT-MZ on *Hornet*
  - Introduction to parallel performance engineering
  - **Allinea** Performance and Reporting Tools
- 12:45 (lunch)
- 13:45 Hands-on lab
  - Application preparation and expert coaching
- 17:30 (review/adjourn)
- 19:30 Social event

Outline of rest of week

Tuesday 24th February
- 09:00-10:30 **MAQAO**
- 11:00-12:45 **Cray tools**

Wednesday 25th February
- 09:00-10:30 **Score-P** & **CUBE**
- 11:00-12:45 **Score-P** & **Scalasca**

Thursday 26th February
- 09:00-10:30 **Vampir**
- 11:00-12:45 **BSC tools**

Friday 27th February
- 09:00-10:30 **Periscope**
- 11:15-12:30 **MUST**
- 12:30-12:45 Review

- Hands-on exercises part of each tool presentation every morning session
- Hands-on coaching to apply tools to analyse & tune your own codes each afternoon to 17:30

Prepare to analyse your own application codes

- Ensure your application codes build and run to completion with appropriate datasets
  - initial configuration should ideally run in less than 15 minutes with 1-4 compute nodes
    - to facilitate rapid turnaround and quick experimentation
  - larger/longer scalability configurations are also interesting
    - turnaround may be limited due to busyness of batch queues
- Compare your application performance on other systems
  - VI-HPS tools already installed on a number of HPC systems
    - if not, ask your system administrator to install them (or install a personal copy yourself)

Tools will ***not*** automatically make you, your applications or computer systems more *productive*.

However, they can help you understand ***how*** your parallel code executes and ***when / where*** it's necessary to work on *correctness* and *performance* issues.

DON'T PANIC!

The workshop presenters are here to assist you.

NB: On the assumption that nothing terrible is going to happen and everything's suddenly going to be alright really, all advice may be safely ignored.

Evaluation / Feedback

- PRACE Advanced Training Centre workshop sponsorship
  - All participants required to complete on-line evaluation form on portal
    - http://events.prace-ri.eu/event/HLRS-2015-VI-HPS
- Please also complete the VI-HPS workshop paper form
  - provides valuable feedback
    - to tools developers for improving their tools and training material
    - to improve future tuning workshops
  - can be anonymous if desired
- Tools support queries and bug reports are also welcome
  - should be submitted to respective support mailing lists