

Performance?

HSF and its role in performance?

What is Computational Efficiency for you?

- Holistic Performance Assessment?
 - Performance for a complete campaign!
 - Can we learn how to best spending money/effort?
 - Software (Frameworks)
 - CPU/DISK/NET
- How to measure?
 - Metrics
 - Phasespace

Can we have efficient Code/Algorithms in a heterogeneous world?

- Von Neumann
- Neuro Chips
- FPGAs
- GPUs.....
- ????
- Possible, affordable?

Joining the HPC community and/or the next wave of commodity computing?

- Supercomputers and/or Mobile Phones
- How can we use HPC efficiently?
 - Beyond filling the opportunistic use
 - Real costs?
- Market shifts from desktop to mobile devices
- Commodity computing has been in the past the most cost effective approach
 - Will this continue?

Do we have to rethink I/O and data organisation?

- Distributed
- Local
- In memory
- Data structures
- Do we understand the impact on performance ?
- Will this impact the “Framework”?

Culture of performance? Lost?

- Generations of developers have been raised by:
 - “You shall code for clarity, they who did not trust in Moore’s law are forsaken to wander the desert among profilers and the multitude of compiler switches”
- How to (re) create a Culture from performance?
- Society of the Two Cultures?
 - One who comes up with ideas and prototypes (Science)
 - One who turns this into a refined code for production (Engineering)
 - Recipe for disaster?

Evolution or Revolution?

- Can we gain the (expected) needed factors in performance by either of them?
- What might be additional gains from rethinking computing for HL-LHC?
- Could we afford a revolution?
- Could we afford not having a revolution?