

Real Applications on Parallel Systems — RAPS

A European Community Benchmark Effort

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A chairman is elected every second year at the ECMWF HPC workshop.



Who participates?

The European NWP and Climate research community and vendors:

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- ▶ Bull
- ▶ Cray
- ▶ Fujitsu
- ▶ IBM
- ▶ Intel
- ▶ Mellanox
- ▶ NEC
- ▶ SGI



What should be done?

Original aim

- ▶ Centers provide benchmarks
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like DrHook, libsct, ...



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New initiative: Standards

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- ▶ Simple profiling library
like DrHook, libsct, ...
- ▶ Portable binding library on top of hwloc?



IS-ENES2 offers to support RAPS

- ▶ two communities
- ▶ close to identical applications
- ▶ NWP weak scaling — Climate strong scaling
- ▶ NWP big data with large single sets — Climate big data with many, many single sets
- ▶ NWP constraints on maximum run time — Climate as little as possible wallclock time
- ▶ ...

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Open to other communities on request.

IS-ENES2 funded by EU FP7 to help

DKRZ is leading this effort for IS-ENES2.



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5. provide kernels for the asynchronous behaviour of systems (eg. a model coupling benchmark)

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Initial model set

Support will be made available for:

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- ▶ ICON
- ▶ NEMO/CAM
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- ▶ eventually EC-Earth



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Possible interesting side effect: code convergence — positive?



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RAPS currently requested standards

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- ▶ unified interfaces for profiling tools (like hpct, pat, ...)
- ▶ unified standard for process/thread binding - hwloc?



Where to go from here?



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- ▶ globalize centers participating



Where to go from here?

- ▶ globalize centers participating
- ▶ put more effort into being better prepared for a future with hardly visible development paths

