AVVISO DI SEMINARIO

Giovedì, 9 gennaio 2014, ore 11.00

Sala Garisenda – INFN-CNAF

Via Ranzani, 13/2, Bologna

Filippo Mantovani

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Supercomputing based on Mobile Processors

Abstract:

In the late 1990s, (mostly) economic reasons led to the adoption of commodity desktop processors in high-performance computing. This transformation has been so effective that in 2013 the TOP500 list is still dominated by x86-based computers. In 2013, the largest commodity market in computing is not PCs or servers, but mobile computing, comprising smartphones and tablets, most of which are built with ARM-based SoCs. This leads to the suggestion that once mobile SoCs deliver sufficient performance, mobile SoCs can help reduce the cost of HPC.

In view of the experiences within the Mont-Blanc project at the Barcelona Supercomputing Center, this talk will describe possibilities and challenges involved in developing a high-performance computing platform from low cost and energy efficient mobile processors and commodity components.

Bio:

Most of the scientific career of Filippo Mantovani has been in the area of computer architectures, with special focus on massively parallel systems based on both reconfigurable logics and general purpose processors.

He got his PhD at the University of Ferrara developing the Janus supercomputer, a special purpose parallel supercomputer for statistical physics simulations based on FPGAs. He has been working then on custom low-latency interconnections of HPC nodes within the QPACE and the QPACE2 projects and on code optimization for different architectures (IBM Cell, GP-GPU, multi- and many-cores).

He has international experience as junior researcher at the DESY laboratory (Germany) and at the University of Regensburg (Germany). He has recently joined the group of heterogeneous architectures at the Barcelona Supercomputing Center.

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