



Objectives

To research how new computational architectures (such as multi- and many-cores), infrastructures (I/O and networking), and paradigms (such as virtualisation and cloud computing) all geared towards better performance/cost ratios, can be combined and effectively used to support software systems and applications that foster multi-disciplinary scientific research.

Methodology

In [1] a method to maintain a strong coherence of the cluster file system cache has been proposed and implemented.

For [2], a partnership has been established with an industry leader and a solution that addresses some limitations on a particular product line is being developed.

Collaborations have been established with other scientific areas, such as Physics [3] and Civil Engineering [4], to optimize and/or develop faster applications needed to gain insight in their respective areas.

Expected Results

Core Research:

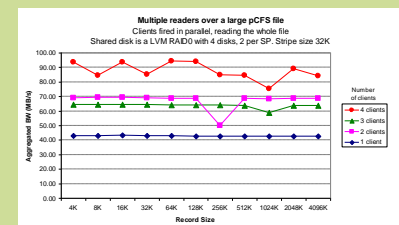
High performance POSIX-standard compliant cluster file systems [1]

Applied Research:

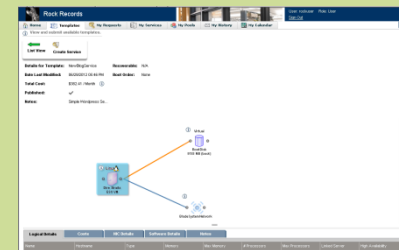
An IaaS cloud consumer portal for fine-grained resource allocation [2]

Parallel Computing and Protein Design [3]

Optimization of a Large scale granular contact dynamic computation [4]



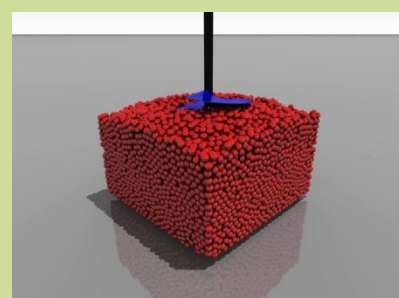
[1] Parallel cluster filesystem



[2] IaaS portal (w/ HP Portugal)



[3] Protein design (w/ CCMAR, U. Algarve)



[3] Granular computation (w/ DEC/FCT-UNL)