

## ERASMUS (Teacher) Staff Training

<b>RECEIVING INSTITUTION/ORGANIZATION</b>	
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<b>DETAILS OF THE WORK PLAN</b>	
Duration in Day	4
Department/Service:	Department of Informatics and Communications
<b>Contact person</b>	
Position:	
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<b>OVERALL AIM AND OBJECTIVES</b>
The programme will focus on learning and training of the planning, installation and management of small-scale HPC (high performance computing) clusters. Open source facilities and commodity hardware will be used to deploy a high-performance platform and prove that is feasible to use HPC in research and in advanced studies without significant costs.

<b>PROGRAMME FOR THE PERIOD</b>

Day 1	1)UNIX user-level concepts: file system organization, shell features, commands for user-level tasks; 2)UNIX administration-level concepts: user-accounts, file-system, network and services configuration; 3)cluster computing concepts: basic concepts, technologies and approaches (including ROCKS)
Day 2	ROCKS clusters: physical layout; selection of software packages; installation of the frontend and worker nodes; cluster monitorization tools; management of user-accounts; tailoring/updating of the software packages deployed to worker nodes; configuration of job submission and execution tools;
Day 3	1)parallel processing capabilities of ROCKS clusters: deployment of PVM, MPI and OpenMP examples; - parallel storage capabilities of ROCKS clusters: configuration of cluster file systems (PVFS2); 2)high performance message passing capabilities of ROCKS clusters with Myrinet technology;
Day 4	virtual ROCKS clusters with XEN: installation, configuration and demonstration

### EXPECTED LEARNING OUTCOMES

Upon completion of the course, the attendees will have the necessary skills to plan, install, configure and manage a small scale ROCKS-based HPC cluster. Working knowledge of user-level tools and libraries for the development of parallel applications is also an expected outcome, as a way to ensure a basic initial support for cluster 1st time users. Attendees will also gain insight on the concept of virtual clusters and their applicability scenarios.

### REMARKS

### COMMUNICATION LANGUAGE OF INSTRUCTIONS

English