



The Italian Southern Partnership for Advanced Computational Infrastructures (SPACI) Selects HP for Strategic Grid Computing Implementation

Grid enables collaborative research and will offer invaluable resource to industry partners

INTERNATIONAL SUPERCOMPUTING CONFERENCE (ISC), HEIDELBERG, JUNE 23, 2004 – The Italian Southern Partnership for Advanced Computational Infrastructures (SPACI¹) has selected HP (NYSE:HPQ) as the lead technology partner in a project that will establish a grid-enabled research and development IT environment for its three members, the Universities of Lecce and Calabria as well as the National Research Council CPS/CNR² in Naples. The grid, which will initially comprise three clusters of Itanium2-based HP Integrity servers running Linux, plus services and applications, aims to integrate the geographically dispersed computing resources of each research center into a grid, allowing SPACI scientists and engineers to more effectively collaborate and conduct national and international research. Ultimately, SPACI's vision for the grid is not only to pave the way for future collaboration between Italian public and industrial research, but to provide the Italian industry with top level services and the knowledge of its scientists, thus helping achieve great results at little cost.

Valued at approximately three million Euro over the next two years, the development of the project will be led by HP. It is one of the first of its kind in Europe, and represents a significant milestone in the development of grid computing. Also, it complements HP's strategy to deliver grid-enabled computing environments based on open standards. Together with industry partners including Intel, HP will deliver HP XC high performance Linux clusters based on HP Integrity rx2600 servers with High Performance Quadrics Interconnect at each member site. Sixty-eight HP Integrity servers will be based at both the University of Lecce and the National Research Council, and 13 HP Integrity servers at the University of Calabria together with 16 HP AlphaServers. Each site will also feature an HP Storage Area Network (SAN), plus a range of cluster management and software development tools.

HP's experience and leadership in grid computing provides a solid foundation for the company to head the project implementation which will include both academic and enterprise application of grid computing. HP's solution offers a powerful means of virtualising resources and enables collaboration between users of these resources. These benefits reflect integral elements of HP's Adaptive Enterprise strategy, which aims

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¹ The original SPACI partnership has been recently extended to create the "SPACI Consortium". More information about the consortium can be found at the end of the text.

² The National Research Council CPS/CNR is now the Naples section of the Istituto di Calcolo e Reti ad Alte Prestazioni ICAR/CNR

at perfectly synchronising business and IT to capitalise on change.

With a computing power of up to 1837 GFlops, HP's Grid implementation for SPACI will provide the scalability, flexibility and performance required to support the most memory-intensive and demanding applications, even at peak times. Tapping into HP's unique industry knowledge, underpinned by HP's Collaboration and Competency Network (HP CCN), gives the SPACI consortium the ability to share experiences and expertise plus access to a global technical computing community.

"Our decision to select HP in favour of a major competitor was based on a number of critical factors", said professor Giovanni Aloisio, University of Lecce, President of the SPACI Consortium. "HP Italy's obvious commitment to the project and our access to HP's technical computing team (HPTC) at an EMEA level, provided invaluable support and consultancy, and demonstrated their belief in the strategic importance of the project."

"HP's unique CCN Programme was another cornerstone of its success in winning the contract, and clearly differentiated HP from its competitors. No one else was able to offer the experience and knowledge that HP demonstrates via this initiative which, crucially, allows us to further tap into HP's expertise and industry collaborations, and includes us as part of a wider community that will prove invaluable to our work. In addition, we believe that HP's partnership approach, which includes working closely with key third parties such as Intel to deliver the infrastructure and software development tools and direct support, is pivotal to the project's implementation", Aloisio continued.

Collaboration and Investment to benefit the region

Together with HP, SPACI will build on a legacy of conducting multi-disciplinary application-driven high performance computing, to provide a powerful, sophisticated yet cost-effective computing resource that can handle projects and research requiring industrial-strength computational power. HP's model for the project is based on creating a centre of excellence at each individual site, which will develop its own unique competencies. Following this model will allow SPACI to fulfil its objective of extending the use of the grid beyond public research, offering the grid's resources to be used for commercial collaboration and innovation by the local industry. By effectively allowing companies to 'rent' the grid for development purposes, and enabling them to tap into the knowledge of each centre of excellence, it can facilitate the rapid deployment of resources for projects, thereby ultimately helping to generate investment and employment opportunities in the region as well as improving the time to market and cost of developing new products within the region.

Martin Walker, scientific research manager EMEA, HP, said, "The SPACI grid initiative is a highly strategic and significant project for which HP is providing both consultancy services, and the product solution that forms the backbone of the grid infrastructure. In light of this, we have given it the very highest priority within HP at both an Italian and a European level. As a leading provider of grid solutions, we have been involved in a number of high profile grid implementations across the globe to date. We are delighted to be playing such a key role in this project, which has exciting ramifications from a technical and commercial standpoint. "

Application-Oriented Approach

As part of its aim to offer application-oriented grid services, SPACI's R&D is focused on the design and development of Problem Solving Environments (PSEs) for remote sensing,

medical imaging and bioinformatics, for atmospheric and climate modeling as well as for industrial simulation. Moreover, SPACI is leading the development of grid-oriented middleware based on the Globus toolkit. SPACI is actively involved in both European and national grid projects.

SPACI will use software developed by the European GridLab project (www.Gridlab.org). Both HP and the University of Lecce are participants in GridLab – a major European effort in the research and development of applications and middleware tools for grid environments. Funded by the European Commission, GridLab will produce a set of application-oriented grid services and toolkits providing capabilities such as dynamic resource brokering, monitoring, data management, security, adaptive services and more. Services are accessed using the Grid Applications Toolset (GAT). The GAT provides applications with access to various GridLab services, resources tools etc, in a way that allows end users and application developers to use and build applications on the grid, without needing to know details about the runtime environment in advance.

Moreover SPACI is one of the main Italian sites of the EU's EGEE (Enabling Grids for E-science in Europe) project which integrates current national, regional and thematic grid efforts to create a seamless European grid infrastructure for the support of the European Research Area.

About SPACI

The Italian Southern Partnership for Advanced Computational Infrastructures (SPACI) is a partnership among the Universities of Lecce and Calabria as well as the Italian Research Council, based on three geographically spread High Performance Computing (HPC) centres located in Southern Italy. Those centres are the University of Lecce's ISUFI/ CACT (Center for Advanced Computational Technologies), the Center for Research on Parallel Computing and Supercomputers (CPS) of the National Research Council (CNR), now section of the CNR Institute of HPCN (ICAR/CNR), and the MIUR/HPC Center of Excellence of University of Calabria. SPACI, funded by the Italian Ministry of Education, University and Research, has been established to pursue excellence in the field of Computational Science and Engineering.

The original SPACI partnership has been recently extended to create a "SPACI Consortium". The purpose of the SPACI Consortium is to create a broad collaboration between public and private research compliant with guidelines for scientific and technological policy issued by the Italian government. The SPACI Consortium consists of three entities today: the University of Lecce, HP Italy, and a company created by the three partnership institutions with the name Spaci SrL. The president of the SPACI Consortium is Prof. Giovanni Aloisio of the University of Lecce, while the president of Spaci SrL is Prof. Almerico Murli of the University of Naples Federico II. Two additional institutions will shortly join the SPACI Consortium: the University of Calabria and the Italian National Nanotechnology Laboratory located in Lecce. More information about SPACI is available at www.spaci.it.

About HP

HP is a technology solutions provider to consumers, businesses and institutions globally. The company's offerings span IT infrastructure, personal computing and access devices, global services and imaging and printing. For the four fiscal quarters ended April 30, 2004, HP revenue totaled \$76.8 billion. More information about HP (NYSE, Nasdaq: HPQ) is available at www.hp.com.

