

## Open Grid Forum High Performance Computing (HPC) Basic Profile Interoperability Demonstrations at SC07

SC07 sees the second interoperability demonstration between multiple third party resource managers and Web services platforms using the Open Grid Forum's (OGF) High Performance Computing (HPC) Basic Profile specification. For more details of the demonstrations taking place at SC07 see http://www.ogf.org/HPCBasicProfile. The HPC Basic Profile specifies how to achieve interoperability between job schedulers managing HPC resources located in different administrative domains.



The HPC Basic Profile enables common usage scenarios found within many research and commercial organizations. Example usage scenarios include:

**Web Application**: Users access applications with their web browser while the application server uses the HPC Basic Profile to initiate the execution of the application. The user does not need to be aware of the actual resource manager being provided.

<u>Metascheduler</u>: The user submits their job to a local resource manager, which then uses the defined policy to route the job to a suitable execution resource. This resource may be accessed through the HPC Basic Profile and use a different resource manager or be located in a different organization.

**<u>Rich Client</u>**: An engineer or scientist runs a "workbench" application that includes running simulations that test elements of the design. When the user runs a simulation, the rich client dispatches it to a compute resource using the HPC Basic Profile.

**Workflow Engine:** Various applications are chained together into a workflow of computing tasks. Users define job nodes and their dependencies into a graph. The workflow engine does not need to be aware of the different resource managers and can execute each node in the graph based on the job description and the HPC Basic Profile.

## **Participating Organizations**

| Participant                                        | Booth<br>Number | Web Service Tooling                    | Resource Manager                               |
|----------------------------------------------------|-----------------|----------------------------------------|------------------------------------------------|
| Altair Engineering, Inc                            | 720             | gSOAP on Linux                         | PBS Professional                               |
| EGEE/OMII-Europe                                   | 2523            | Axis on Linux                          | gLite CREAM with OMII-<br>Europe BES extension |
| Microsoft                                          | 1407            | Windows Communication<br>Framework     | Windows Compute<br>Cluster Server              |
| Platform Computing                                 | 814             | gSOAP (BES++)                          | LSF                                            |
| UK eScience<br>(London eScience<br>Centre/OMII-UK) | 571             | Axis/OMII-UK on Linux<br>(GridSAM)     | Linux, Globus                                  |
| NorduGrid/KnowARC                                  | 173/182         | ARC1 HED                               | ARC Grid Manager                               |
| NIC/FZJ/OMII-Europe                                | 2633            | XFire (WSRF) on Linux                  | Torque                                         |
| University of Virginia<br>eScience group           | N/A             | Microsoft Web Services<br>Enhancements | Windows Compute<br>Cluster Server              |
|                                                    |                 | gSOAP (BES++)                          | PBS & SGE                                      |

The HPC Basic Profile demonstrations can be seen in the following booths on the exhibit hall floor:

## About OGF and HPC Basic Profile Working Group

Open Grid Forum (OGF) was formed in June, 2006 with the merger of the Global Grid Forum (GGF) and the Enterprise Grid Alliance (EGA). OGF works to accelerate grid adoption, providing an open forum for grid innovation and developing open standards for grid software interoperability. The HPC Profile Working Group, co-chaired by Marty Humphrey of the University of Virginia and Steven Newhouse from Microsoft, is part of the compute area within the OGF Standards function. For more information on the HPC Basic Profile, the activities of the working group and the interop demonstration, please visit http://www.ogf.org/HPCBasicProfile.



Open Grid Forum | 15700 103<sup>rd</sup> Street, Suite 210 Lemont, IL 60439 | (312) 895-5930 www.ogf.org