

OpenNaaS, a toolkit for IP Networks as a Service

Tuesday, 18 September 2012 15:00 (20 minutes)

Description of the work

OpenNaaS was born with the aim to create an open source software project community that allows several stakeholders to contribute and benefit from a common NaaS software stack. OpenNaaS offers a versatile toolset for the deployment of NaaS oriented services. With an eye on versatility and smooth integration, OpenNaaS offers a powerful remote command line, as well as web-service interfaces. This web-service interface will offer the possibility to both build a GUI and integrate it with existing middleware applications already deployed in the virtual research organisations.

Initially four research communities will benefit from OpenNaaS powered services: the Danish Health Data Network, the High Performance Networks Group from the University of Essex, the Irish NGL, and NORDUnet through their cloud services.

The Grid-Ireland Operations Centre (<http://grid.ie>) in Trinity College Dublin runs the Irish NGL. Grid and cloud computing use-cases are being explored by the Grid-Ireland Operations Centre. As Grid-Ireland has resources distributed across Ireland and connected via HEAnet it is an ideal test bed for OpenNaaS.

The Grid-Ireland research explores novel approaches to sharing and connecting computing and storage resources. This includes creating a distributed computing cloud between institutions with resources federated at the network level, with an intended use as a platform for agent-based computing. This raises issues relating to adding and removing sites amongst others. A similar approach is taken for integrating computing resources into grid batch systems, transferrable to use of academic clouds for grid computing.

These use cases will be demonstrated at the EGI Technical Forum 2012.

Link for further information

<http://www.mantychore.eu/> <http://www.opennaas.org/>

Wider impact of this work

Mantychore FP7 will carry out pre-operational deployments of the IP network service at UNI-C, NORDUnet and HEAnet. Part of the project effort will be dedicated to consolidate and enhance the community of providers (NRENs but also commercial) and users of the IP network service.

In general, by working with research communities in higher-education and research institutions Mantychore will gather real-world requirements for OpenNaaS connecting dynamic and user-controlled networks to traditionally managed networks.

Printable Summary

Dynamic and multi-domain provisioning of network resources has been a long-standing research area, and the rise of grid and cloud computing brings even more challenges. In order for operators to be able to deploy innovative Networks as a Service offerings, the Mantychore FP7 project has created the OpenNaaS framework. Grid and cloud computing provide some of the first use cases for OpenNaaS, making it possible to federate –at the network level –computing and storage resources between grid resource centres or to create a distributed computing cloud spanning several organisations.

This 20-30 minute presentation will give infrastructure operators and user communities with unique network requirements an overview of OpenNaaS capabilities and the development roadmap and will demonstrate relevant use cases, all with a view to gathering additional requirements and interest in deploying the software.

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Session Classification: Providing cloud services

Track Classification: Virtualised Resources: challenges and opportunities (Michel Drescher: track leader)