



The SIENA initiative drives Europe's Cloud computing Strategy

Cloudscape III - Brussels 15-16 March 2011

Robert Madelin, Director-General, DG Information Society and Media of the European Commission opened Cloudscape III hosted by the SIENA initiative, 15-16 March in downtown Brussels. Robert Madelin's keynote focused on Cloud computing and the Digital Agenda, underscoring that *"the potential benefits of cloud computing in business, public services and scientific research are widely recognised. Efforts like the SIENA standardisation roadmap will be very useful in making these benefits materialise"*.

Herein lies the very focus of Cloudscape III, which connected experts from eGovernment, scientific research initiatives and standards groups with service providers and end-users to explore the technical, legal and commercial challenges that need addressing to ensure that mainstream adoption is driven by open standards.

With over 30 speakers and panellists, 25 use cases and position papers and a first iteration of the SIENA standardisation Roadmap, Cloudscape III has brought a 360° overview on the Cloud computing landscape, covering benefits for enterprise, research and government alongside challenges spanning scalability, data movement, ownership and privacy, security and legal issues, openness and interoperability.

Cloudscape III perfectly illustrated the broad consensus that challenges are universal and call for a global approach. Data protection was spotlighted as one of the hottest topics that needs addressing at policy level. Experts also stressed the value of risk assessments and feasible exit strategies for anyone thinking about moving to the Cloud. A number of other challenges were highlighted, such as changing mindsets to embrace new paradigms and business models. Investing now for longer term benefits to drive innovation and ensuring broadband for all will mean that every citizen can reap benefits from new and enhanced government services powered by the Cloud. Cloud security was also brought into sharp relief. Cloud computing has uncovered security issues that have tended to be sidelined in the past. Cloud pushes the boundaries of traditional IT, while the diversity it is bringing across different sectors is synonymous with a higher number of security requirements. It is, though, important not



to undermine the many benefits of Cloud, including the opportunities that security actually opens up.

"More emphasis needs to be placed on best practices, reference implementations, testing and demos. Extending joint work on standards and educating people on Cloud at the right time, especially graduates as the next generation of ICT workers, are both very important steps", said Vincent Franceschini, Hitachi Data Systems, SNIA and a long-standing SIENA Expert. A number of speakers underscored the critical role of use cases to pinpoint commonalities across the board and the value-add of reference architectures to categorise services and map current standards development against those services. Gregg Brown, Microsoft, said *"Use cases are a lingua franca in the dialogue between customers and vendors, helping to define the steps needed to respond to their interoperability requirements"*. Industry engagement in the standards process is therefore important to help bridge the gaps between standards and stakeholder needs, while also bringing important insights on a national and international scale.

Dawn Leaf from NIST, who showcased the U.S.'s approach to Cloud adoption by government agencies, said *"implementation and deployment need to be in parallel with the development of standards, building on experiences and a knowledge base with testing along the way as standards evolve"*.

From a scientific perspective, many applications are suited to the Cloud, including climate change where simple workflows could easily be ported to the Cloud. However, several hurdles need to be overcome, such as the seamless movement of data across the Internet and interoperability. With 2011 described as the "year of the platform", the way forward could be the easy deployment of interoperable platforms deployed as a service alongside software-as-a-service solutions that hide the complexity. Such an approach leaves resource configuration to the technical experts so researchers can focus on their core work.

Summing up, it is important that the policy pillars designed to address legal and regulatory issues are integrated at a global level and that the EU directive currently under review takes into account regulations around the world. Standards are there to make a difference but we need to aim for performance-quality standards and a minimal guarantee to avoid stifling uptake and innovation. The growing interest in "privacy by design" is expected to encourage engineers and technical communities to think about the issues early on.

"To ensure progress is made, we need to bring on board all the stakeholders at every stage of the process towards interoperability through open standards. Funding agencies and initiatives like SIENA play a key role in making that happen. SIENA will be incorporating the main conclusions of Cloudscape as it drives the production of its Roadmap on Grid and Cloud Standards for e-Science and Beyond in synergy with a committed team of experts that is truly international in scope with representatives from standards groups, business and scientific communities", said Martin Walker, Independent Consultant and Chair of the SIENA Roadmap Editorial Board. Priorities include arriving at an economy of services, cutting data centre costs, and addressing data management challenges. The six European Distributed

Computing Infrastructures are embarking upon a Lighthouse Implementation for standards proof of concept testing aimed at demonstrating inter-compatibility and functionality in a reference setting that is specifically designed to provide illustrations of their value. Work is already under way on a profile for Clouds, taking as a starting point OGF31 taking place this week in Taiwan.

About SIENA

SIENA (Standards and Interoperability for e-Infrastructures Implementation Initiative) is funded by the GÉANT and e-Infrastructure Unit of the European Commission. The SIENA project is a six-member, pan-European consortium representing enterprise, standards organisations, and academic institutions: Barcelona Supercomputing Centre (BSC), Spain; European Chapter of the Open Grid Forum EEIG (OGF.eeig), UK; The Chancellor, Masters & Scholars of the University of Oxford - Oxford e-Research Centre, UK; ATOS Origin, Spain; National Institute for Nuclear Physics (INFN), Italy and Ludwig-Maximilians-Universität München, Germany. The main strategic objective of SIENA is to accelerate and co-ordinate the adoption and evolution of interoperable Distributed Computing Infrastructures through engagement with industry, standards development organisations and major stakeholders to forge community agreements on best practices and standards for distributed computing. The main output of the project will be the "European Roadmap on Grid and Cloud Standards for e-Science and beyond" through close liaison with the European Commission. More information can be found on the SIENA Channel (www.sienainitiative.eu), also a dynamic repository for distributed computing infrastructure content.



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