Standards für die Cloud

Über die Arbeit der ETSI Cloud Standards Coordination
Overview

Perspectives on Cloud and standardisation

Cloud standardisation – paradigm shift in standards development

EU Policy making in the area of Cloud

ETSI Cloud Standards Coordination
Perspectives on the Context of Cloud and Standardisation

**Customers**
- Efficiency and Flexibility
- Certainty, Openness
- Trust and Security
- Private / Public

**Policy**
- Wide adoption of Cloud
- Innovation
- Growth
- Efficiency

**Standardisation**
- Interoperability
- Portability
- Promote competition
- Prevent vendor lock-in
- Ensure trust

**Business Opportunity**
- Private / Public Clouds
- Flexibility
- Fair competition, Global scope

**Vendors**
- Business Opportunity
- Promote technologies
- Adoption of standards

**Standards Bodies**
- Policy
- Standardisation
- Interoperability
- Portability
- Promote competition
- Prevent vendor lock-in
- Ensure trust
Partnering and Collaboration

- **VENDORS**
  - Requirements
  - Platform
  - Business success
  - Trust
  - Policy objectives

- **PUBLIC**

- **CUSTOMERS**

- **COMMUNITIES**
Cloud standardisation – paradigm shift in standards development

How Cloud standardisation shows that a re-thinking of the approach towards standardisation takes place and is important for business success.
The Global Standards Environment for Cloud

➔ Cloud is not a new technology but a combination of technologies
➔ Cloud does not require massive development of new standards
➔ Many standards are already available for integration in the context of Cloud architectures, e.g. general internet/web standards

Examples of global organisations involved in global Cloud standardisation:

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Standards/Specifications</th>
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<tbody>
<tr>
<td>DMTF</td>
<td>CIMI, Cloud Audit, OVF</td>
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<td></td>
<td>Cloud Infrastructure Management Interface</td>
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<td></td>
<td>Open Virtualization Format</td>
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<td>IETF</td>
<td>OAuth</td>
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<td></td>
<td>Web authorization protocol</td>
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<td>ISO/IEC JTC 1</td>
<td>CCRA</td>
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<td></td>
<td>Cloud Computing Reference Architecture</td>
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<tr>
<td>OASIS</td>
<td>TOSCA, IDCloud</td>
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<td></td>
<td>Topology &amp; Orchestration Specification for Cloud Applications</td>
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<td>Identity in the Cloud</td>
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<tr>
<td>The Open Group</td>
<td>Reference Architecture</td>
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<td>SNIA</td>
<td>CDMI</td>
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<td></td>
<td>Cloud Data Management Interface</td>
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<td>W3C</td>
<td>Linked Data</td>
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<td></td>
<td>Data format standard</td>
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Rethinking the Approach towards Standards for the Cloud

**Innovative**
Open standards for cloud: Invention? Reinvention?
Cloud computing is changing the economics of IT and requires a rethinking of how we all engage in standards development.

**User-driven**
The members of the Cloud Standards Customer Council create a cross-industry view into market-leading Cloud use cases and best practices.

**Practical**
Business success is not theoretical. Practical cloud computing is grass roots plain and simple: it involves leveraging real world implementations of standards & open source.

**Architectural**
Standards allow enterprises to manage change across market evolution cycles extending the value of customers’ services based architectures and investments.
Putting Customer Needs in Focus

- End user advocacy group
- Accelerate cloud's successful adoption
- Standards, security and interoperability issues relevant for transition to the cloud
- Drive client requirements into standards development organizations
- Deliver materials such as best practices and use cases

- Global collaboration of developers and cloud computing technologists – Cloud platform development
- Ubiquitous Infrastructure as a Service (IaaS) open source cloud computing platform for public and private clouds
- Cloud operating system that controls large pools of compute, storage, and networking resources throughout a datacenter, all managed through a dashboard

Available under the Apache 2.0 license.
FI-WARE: OpenStack-Based Cloud Hosting Infrastructure

- FP 7 project
- Mission:
  - Provide core platform for Future Internet applications in multiple industries
  - Based on OpenStack
  - First release available to partners of FI-PPP (will be available to public in spring 2013)
- Contribute to development of
  - Open Architecture Specifications
  - Open API Specifications
  - Reference implementation

The FI-WARE project will introduce a **generic and extendible ICT platform for Future Internet services**. The platform – also referred to as the “Future Internet Core Platform” or “FI-WARE” – aims to meet the demands of key market stakeholders across many different sectors, **strengthen the innovation-enabling capabilities in Europe** and overall ensure the long-term success of European companies in a highly dynamic market environment.
EU Policy making in the area of Cloud

“The Commission therefore aims at enabling and facilitating faster adoption of cloud computing throughout all sectors of the economy which can cut ICT costs, and when combined with new digital business practices, can boost productivity, growth and jobs” (p. 2)

“A jungle of standards generates confusion by, on one hand, a proliferation of standards and on the other hand a lack of certainty as to which standards provide adequate levels of interoperability of data formats to permit portability; the extent to which safeguards are in place for the protection of personal data; or the problem of the data breaches and the protection against cyberattacks.” (pp. 5-6)

Key action 1: Cutting through the jungle of standards
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- Promote trusted and reliable cloud offerings by tasking ETSI to coordinate with stakeholders in a transparent and open way to identify by 2013 a detailed map of the necessary standards (inter alia for security, interoperability, data portability and reversibility).

- Enhance trust in cloud computing services by recognising at EU-level technical specifications in the field of information and communication technologies for the protection of personal information in accordance with the new Regulation on European Standardisation.

- Work with the support of ENISA and other relevant bodies to assist the development of EU-wide voluntary certification schemes in the area of cloud computing (including as regards data protection) and establish a list of such schemes by 2014.

- Address the environmental challenges of increased cloud use by agreeing, with industry, harmonised metrics for the energy consumption, water consumption and carbon emissions of cloud services by 2014.

(pp. 10 – 11; highlighting added)
ETSI Cloud Standards Coordination

The task ETSI has been given is about coordination between stakeholders.

It is not about developing standards but about identifying relevant standards necessary in the context of Cloud.
ETSI with the Global Information and Communication Technologies (ICT) Standardisation Ecosystem

➔ ETSI is one of three formally recognised European Standardisation Organisations

➔ High expertise and broad membership in ETSI
Cloud Standards Coordination: Set up

- ETSI acts as Coordinator
  - Secretariat
  - Web site
  - Other support

- Very open and transparent set up
  - Anybody may participate, simple registration

- Rapporteurs and Co-Rapporteurs for different tasks
Organisation and time line of Cloud Standards Coordination

Reference Group (Coordination level)

Task Group 1
Stakeholders

Task Group 2
Use Cases

Task Group 3
Identification of Standards
  - Sub-Task Group 1: SLAs
  - Sub-Task Group 2: Interoperability
  - Sub-Task Group 3: Security

Jan 2013

WORK FINISHED

Work will continue throughout 2h2013 for final report by year end.
From Input to Outcome: Collection, Selection, Structuring

- Standards Specifications
- Reports Studies

Valid Input

TG2: Use Cases

Final Outcome
(Standards mapped and listed)
Use Cases: Example

HLUC4:_Operate Service: Here is sconsidered everything has to be done for providing the service to whatever customer, from the startup of the service to its termination. It seemed suitable to decompose it into the following lower level Use Cases:

HLUC4.1:_Activate Service: all the activities necessary to start the service for whatever customer. The main actor here is the Service Provider or a Partner who have to enable the customer to operate on the service according to agreed Service Level.

HLUC4.2: Migrate Service: Customer may want to migrate some existing application and data and/or integrate the cloud service with existing services systems and applications. This can either be for moving the service to another provisioning mode or to a more suitably sized environment.

HLUC4.2: Maintain Service: The activities associated to normal operation with the service. This may also include administartive activities either delegated to the customer or provided by e Service Provider or by a Partner.

HLUC4.2: Terminate Service: Customer wants to exit the contract, and possibly migrate its application or data to another provider.
Output of Cloud Standards Coordination

- Intermediate report:
  - Proposal for the outline of the final report
  - 3 sample Use Cases selected for including in intermediate report – including
    - Methodology
    - Presentation of output

- Key part: Cloud Standards Mapping:

  General introduction
  Presentation of the context, relevance in the context of Cloud computing, scope, etc...

  High level Use Cases selected (one by one, or grouped as appropriate)
  Per high level use case in 1/2 page (or per group of high level use cases) describe when standards come into play (for the customer), and which standards are particularly relevant.

  Selected Use Cases
  Per use case or family of use case describe the relevant standards in this use case.

  Mapping of standards to selected use case #n
  Possibly a look-up table linking Use Cases to Standards

  Concluding remarks (bullets of issues, remarks, ideas for future work)
Cloud is primarily about integrating technologies and combining different standards.

Global standards are key for Cloud technologies and global market success.

Most of the required standards have been available for a while

The ETSI Cloud Standards Coordination will provide a map of the standards available, relating them to concrete Use Cases.

The ETSI mapping will provide added value to all who wish to implement Cloud technologies and leverage their potential for business success and optimisation.
Many thanks for your attention...

... happy to answer your questions, take up ideas and discuss further.

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