SAJACC Use Cases

Standards Acceleration to Jumpstart Adoption of Cloud Computing

Breakout Sessions
Nov. 5, 2010
Overall Starting Points

• Want use cases that work across multiple clouds and in different environments

• Aim at specific use cases that can provide insight as to how clouds CAN work as well as demonstrations of how clouds work now

• Reference implementations to enable feasibility exercises

• Continuously growing, publicly accessible portal to showcase results
Methods to be used

• Initial use cases provided by government with community input
• Legacy specifications also provided for reference
• Generate use cases including testing
• Starting point: http://www.nist.gov/itl/cloud/use-cases.cfm
• Following methods of book by A. Cockburn, “Writing Effective Use Cases”
Cloud Computing Use Cases

Initial Cloud Computing Use Case TBD, 2010

A set of twenty five use cases that seek to express selected portability, interoperability and security concerns that cloud users may have.

****WORKING DOCUMENT****

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Appendix B
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Appendix D

http://www.nist.gov/itl/cloud/use-cases.cfm
SAJACC Presentation

• Error, failure and exceptions need to be documented and recorded
• Several different types of “actors” kept coming up and were documented by SAJACC for use in initial scenarios.
• Taxonomy from these initial exercises should be documented and recorded
• Several worked out scenarios were presented
• “SAJACC not about getting cloud started - it is already started!”
General Comments

• Of the 11 different cloud offerings approved by GSA so far, interoperability and portability between these has not been demonstrated. Should it be required? (Note: these are IaaS at present.)

• Many ways based on existing standards to meet each of the use case requirements

• Four breakout sessions followed (of which three met):
  • Actors
  • Missing Use Cases
  • Intellectual Property
  • Available Standards
Breakout Group 1: Actors

Lee Badger and Alan Sill
“Actors” = Anything With "Behavior"

**Important Actors for Public Clouds**

<table>
<thead>
<tr>
<th>Actor Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>unidentified-user</td>
<td>An entity in the Internet (human or script) that interacts with a cloud over the network and that has not been authenticated.</td>
</tr>
<tr>
<td>cloud-subscriber</td>
<td>A person or organization that has been authenticated to a cloud and maintains a business relationship with a cloud.</td>
</tr>
<tr>
<td>cloud-subscriber-user</td>
<td>A user of a cloud-subscriber organization who will be consuming the cloud service provided by the cloud-provider as an end user. For example, an organization's email user who is using a SaaS email service the organization subscribes to would be a cloud-subscriber's user.</td>
</tr>
<tr>
<td>cloud-subscriber-administrator</td>
<td>An administrator type of user of a cloud-subscriber organization that performs (cloud) system related administration tasks for the cloud-subscriber organization.</td>
</tr>
<tr>
<td>cloud-user</td>
<td>A person who is authenticated to a cloud-provider but does not have a financial relationship with the cloud-provider.</td>
</tr>
<tr>
<td>payment-broker</td>
<td>A financial institution that can charge a cloud-subscriber for cloud services, either by checking or credit card.</td>
</tr>
<tr>
<td>cloud-provider</td>
<td>An organization providing network services and charging cloud-subscribers. A (public) cloud-provider provides services over the Internet.</td>
</tr>
<tr>
<td>transport-agent</td>
<td>A business organization that provides physical transport of storage media such as high-capacity hard drives.</td>
</tr>
</tbody>
</table>

... from [http://www.nist.gov/itl/cloud/actors.cfm](http://www.nist.gov/itl/cloud/actors.cfm)
Further Actor Examples

Definition of Terms

Portal
a web site or web service that provides functionality to Web Users via web-specific applications.

Web User
a human individual that accesses Grid resources through a Portal. This individual may or may not be (also) enrolled in a Virtual Organisation.

Grid User
a human individual registered in a Virtual Organisation.

Anonymous Web User
a Web User who does not provide unique credentials to the Portal when invoking functionality.

Pseudonymous Web User
a verifiably-human Web User that provides authenticated non-identifying information to the Portal when invoking functionality. The aim of verifying that the user is a human is to prevent "automated" use of the portal to stop overload of the portal or use by another service. There are several ways that this could be achieved, e.g. a captcha, a one-time email address on a non-authenticated email (gmail, hotmail, etc) or knowledge that the portal can only be used by people sitting at a public login station (e.g. library walk-up system).

Identified Web User
a Web User that provides authenticated personal identification to the Portal when invoking functionality, but...
Breakout Group 2: Missing Use Cases

Winston Bumpus et al.
SAJACC Missing Use Cases

• Existing ones are mostly IaaS
• Need criteria for completeness
• Mention variations of and variants within use cases
• Need a method (= twiki!) to gather additional use cases
• Need to prioritize these and analyze gaps
• Users (community) should prioritize use cases (interactive user input)
• Need to look at methods for categorization and analysis of use cases
Breakout Group 3: Intellectual Property and Testing Issues

Jin Tong et al.
Intellectual Property Issues

(More questions than answers)

• What’s the motivation/impact to the vendors/providers?
• Why would the cloud provider care?
• What is the role of the service vendor? User?
• Is the provider going to participate, and how to participate in the testing?
• How much IP collaboration from the vendor/provider that is needed?
• Answers to these questions will play a strong role in the success of SAJACC
• Testing:
• What's the purpose of doing the whole testing process? How to interpret the test results?
• In the output of the use case testing, should publish whether or not standards are used
• How many systems/interfaces need to be identified?
• If to prove feasibility, one provider should be enough
• Use WS-I.org lessons learned to benefit the process
• Software (SaaS) level interoperability testing is a little harder
Breakout Group 4: Role of Existing Standards

Mark Carlson et al.
3.1 Open An Account

- Existing Standards
- PCI
- OAuth
- Banking industry standards – needs researching
3.2 Close An Account

- Existing Standards
- PCI
- CDMI – data sanitization
3.3  Terminate An Account

- Existing Standards
- PCI
- Customer protection rules should be looked at
- Disposition of privacy data
3.4, 3.5, 3.6 Copy Data Objects Into, Out Of A Cloud; Erase Data

- Existing Standards
- CDMI (including data sanitation)
- SRM
- OCCI
3.7 VM Control: Allocate VM Instance

- Existing Standards
- OCCI
3.8 VM Control: Manage Virtual Machine Instance State

- Existing Standards
- OCCI
3.9 Query Cloud-Provider Capabilities and Capacities

• Existing Standards
• OCCI
• CDMI
4.1 Copy Data Objects between Cloud-Providers

- Existing Standards
  - CDMI
  - FTP, gridFTP
  - scp
  - SRM
- Comment:
  - Failure Condition needs to take the verification of a successful copy into account
  - The use case is unnecessarily complicated by the use of Virtual Machines here – the data movement should be able to happen provider, client, provider as well, also this case should use the hard disk as well.
4.5 Migrate (fully-stopped) VMs from one cloud-provider to another

- Existing Standards
- OVF