Project no. 034567

Grid4All

Specific Targeted Research Project (STREP)

Thematic Priority 2: Information Society Technologies

D6.4 - Dissemination events participation description and results

Due date of deliverable: 30/06/2009

Actual submission date: 5/08/2009

Start date of project: 1 June 2006

Duration: 37 months

Organisation name of lead contractor for this deliverable: FT

Revision 1

Table of Contents

Grid4All list of participants

Role	Participant N°	Participant name	Participant short name	Country
CO	1	France Telecom	FT	FR
CR	2	Institut National de Recherche en Informatique en Automatique	INRIA	FR
CR	3	The Royal Institute of technology	KTH	SWE
CR	4	Swedish Institute of Computer Science	SICS	SWE
CR	5	Institute of Communication and Computer Systems	ICCS	GR
CR	6	University of Piraeus Research Center	UPRC	GR
CR	7	Universitat Politècnica de Catalunya	UPC	ES
CR	8	ANTARES Produccion & Distribution S.L.	ANTARES	ES

1. Executive Summary

The Grid4All project was formulated almost 4 years ago. At the time, grids represented the state of the art in general-purpose distributed systems, and had some of the features required for democratic scenarios, such as sharing and aggregation of resources, and forming Virtual Organisations (VOs) across organisational boundaries.

The advent of utility computing, recently called Cloud computing has reduced the complexity of allocating and using commodity hardware and software. Virtualization, pay-as-use based accounting and pricing models, software as a service, horizontal and vertical scaling technologies in applications are enabling the entry of a large number of actors in this space, but the market for cloud computing infrastructure as a service is held by a few, Amazon, Google and some hardware vendors such as IBM, Sun and HP. These clouds offer a pay-per-use model with flat but opaque pricing.

We expect to see evolutions in Cloud computing and new business models to arise. In the long run, the Cloud market will expand. Interoperability will break vendor lock-in and enable a large number of actors to participate. The large numbers of small enterprises and organisations, individual users and participants on the Internet together possess a huge amount of ICT resources.The oligopoly formed by few large cloud vendors could be broken to create a competitive and efficient resource market place; organizations, enterprises (small, medium or large) and even individuals may sell capacity that they can spare and buy capacity when they have load spikes.

# 2. Dissemination event at Orange Labs research exhibition

Cloud computing is both a threat and opportunity for telecom operators. A threat since they could be delegated to the role of 'pipe' providers and an opportunity since operators may have a unique position in this market since they can leverage their network assets. In this context, Orange is trying to understand possible roles that it can play and the differentiators that could demarcate it from the Cloud players.

Clearly operators have a role to play in federating and mediating such market places. In January this year, Deutsche Telecom launched a spin-off, Zimory that aims to leverage this burgeoning field. With Zimory's technology, businesses can turn underused resources into a cloud that's available for other internal purposes. Those cloud resources can also be resold through the Zimory Public Cloud.

We took this opportunity to present some results that have been achieved within the Grid4All project. We proposed a web-based application to give managers and decision makers an idea of what could be a resource market place where providers offer their computational resources and consumers select and execute applications. The combinatorial auction that was developed in the project was used as the back-end engine. We developed a strategic tool to automate the conversion of consumer requirements to bid specifications. Consumers select only the application, the time horizon and the maximum budget.

Orange Labs organises a research exhibition twice every year. Its world-wide units propose their latest innovation through demonstrative applications. The demonstration we proposed (using Grid4All results) was one of 40 proposals that were retained. More than 200 proposals were submitted. This demonstration was one of the five selected for VIP visits, including top-level management. We had fairly positive feedback and useful advice. While clearly at this time, we do not have a complete platform that is ready to be deployed and operated, we believe that we can leverage on the results obtained to move further in this direction.

The flyer distributed to visitors is presented in the following two pages. The demonstration is itself interactive and presents the following home page.
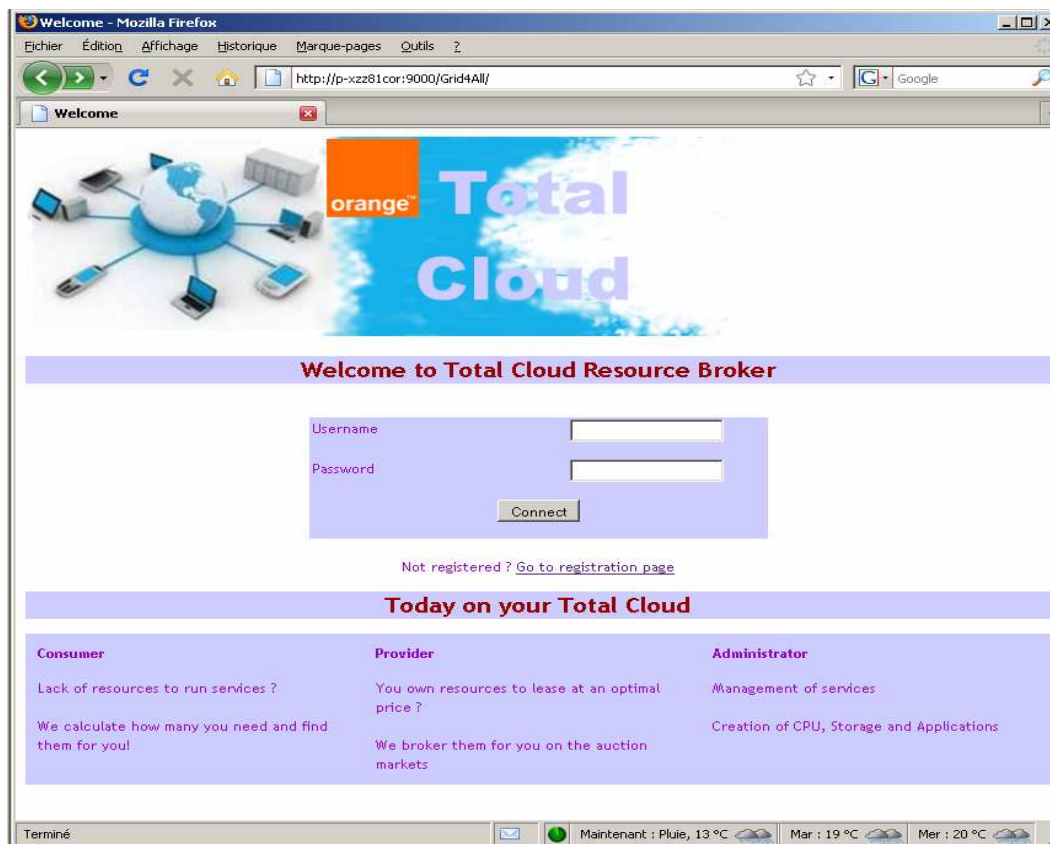
Orange Labs

Total Cloud

Edge Devices Can Be

in the Cloud Too!

Research Object:
Virtualization, Storage &
Autonomics

This demo envisions Internet as a worldwide online resource platform & market leveraging storage and computing resources of edge devices (PCs, mobile phones, etc.) in addition to server-based cloud computing.
The concept is illustrated here by a market-based allocation of the resources that are necessary to support a service. The resource providers may be any individuals.

Presentation

As usual in computation clouds, resources are seamlessly allocated and used in a **pay-as-use manner**.
So, service providers can deploy their applications & services without over sizing their hosting platform.

But here auction markets are used to allocate resources.
The resource providers may be owners of small quantities and not necessarily of large-scale datacenters.
Applications and computation resource consumers adapt their resource needs based on market feedback.
Applications are self-managing and automatically scale.

The demo shows how consumers and providers interact with a service through a web interface in order to rent or lease resources.
(details are given on next page)

June 2009

What is the innovation?

- Democratization of the Utility and Cloud/grid concept
- Computing (and storage) as a service using available edge resources, without necessarily building and provisioning a data center
- Resource market places and dynamic pricing based on supply and demand
- Robustness through self-management, enable applications to reliably execute on volatile environment

Who is it for?

- Domestic users
- Non-profit organizations such as schools
- Small or Medium enterprises

All may act both as consumers or as providers of resources

Customer's benefit?

- As a resource consumer: pay for resources by consumption
- As a resource provider: exploit idle computational resources

(and/or) Orange group's benefit?

- New business models in Cloud computing area
- Opportunity to position as a value-added broker aggregating resources from different providers
- Social networking and dynamic collaboration

Open Innovation: (which cooperative project? which partners?)

- Grid4All European FP6 project, which embraces the vision of a democratic Grid as a ubiquitous utility
- Grid4all comprises under the Orange Labs leadership: ICCS (Greece), INRIA (France), KTH (Sweden), Swedish Institute of Computer Science (Sweden), Technical University of Catalonia (Spain), UPRC (Greece), Antares (Spain)

Ruby Krishnaswamy   Daniel Stern
tel/mob: +33 1 45 29 60 34   tel/mob: +33 1 45 29 42 99
e-mail : ruby.krishnaswamy@orange-ftgroup.com   e-mail : daniel.stern@orange-ftgroup.com

France Telecom Group restricted

orange

June 2009

Level of confidentiality and dissemination

By default, each document created within Grid4All is © Grid4All Consortium Members and should be considered confidential. Corresponding legal mentions are included in the document templates and should not be removed, unless a more restricted copyright applies (e.g. at subproject level, organisation level etc.).

In the Grid4All Description of Work (DoW), and in the future yearly updates of the 18-months implementation plan, all deliverables listed in section 7.7 have a specific dissemination level. This dissemination level shall be mentioned in the document (a specific section for this is included in the template, both on the cover page and in the footer of each page).

The dissemination level can be defined for each document using one of the following codes:

PU = Public

PP = Restricted to other programme participants (including the EC services);

RE = Restricted to a group specified by the Consortium (including the EC services);

CO = Confidential, only for members of the Consortium (including the EC services).

INT = Internal, only for members of the Consortium (excluding the EC services).
This level typically applies to internal working documents, meeting minutes etc., and cannot be used for contractual project deliverables.

It is possible to create later a public version of (part of) a restricted document, under the condition that the owners of the restricted document agree collectively in writing to release this public version. In this case, a new document code should be given so as to distinguish between the different versions.