



# ***Collaboration Framework***



# Preamble



This document aims to propose a collaboration framework which will enable to develop and promote fruitful and valuable partnerships among all stakeholders of Open Source Cloudware initiative.

## How to join

- Mailing list: [cloud-initiative AT ow2.org](mailto:cloud-initiative@ow2.org)
- Web: <http://www.ow2.org/view/Cloud/>

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# Mission in 3 points



## (1) Define a research agenda for enhancing state of the art of free / open source cloudware

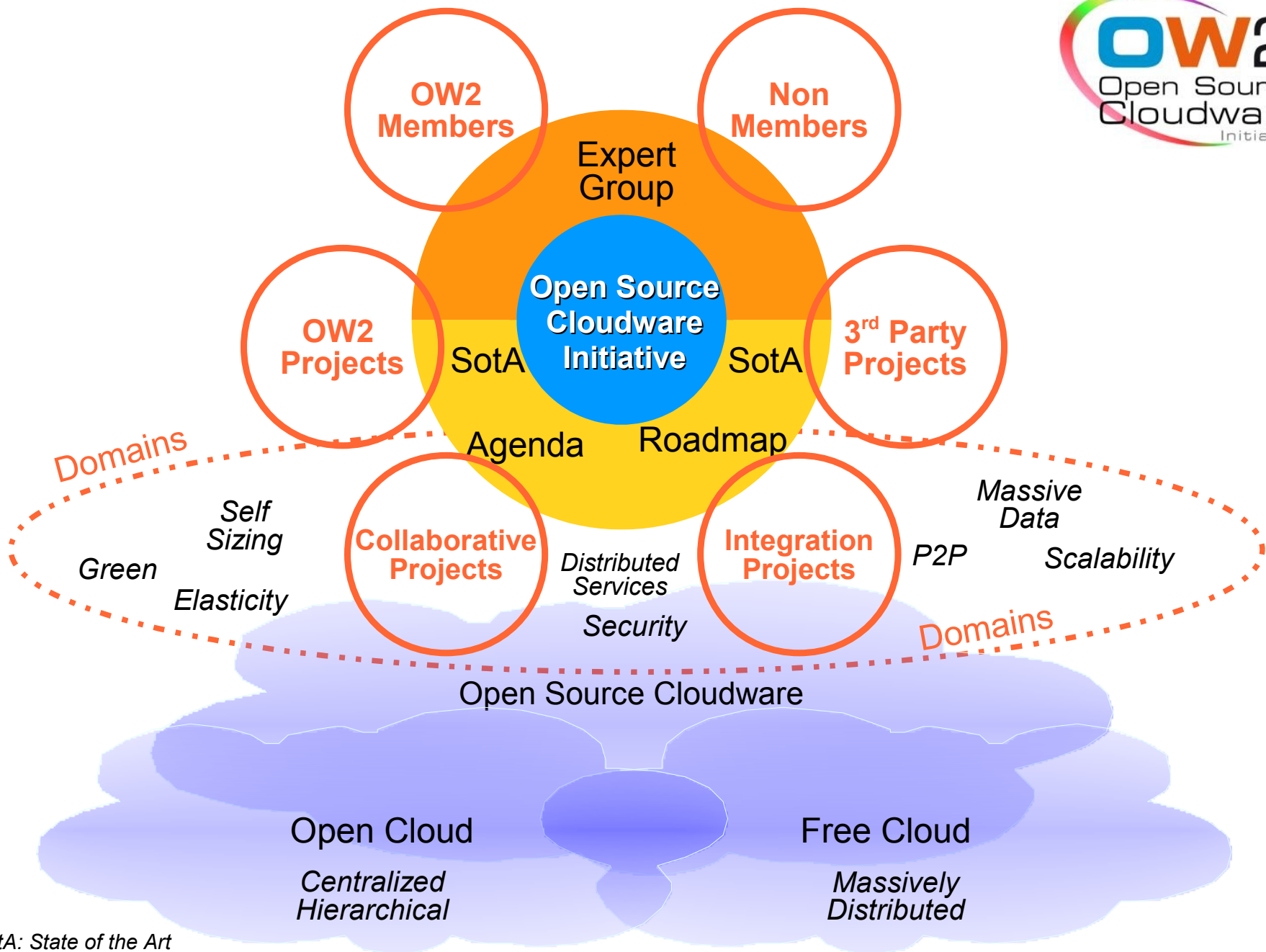
- Free / Open Source Cloudware for Open Cloud (XaaS) based on free / open source software and open standards
  - With specificity such as Elastic, Powerful, Green, ...
  - Addressing Massive distribution, Scalability, Security, Safety, Privacy, QoS, ...
  - Including Development / Deployment / Test Tools, ...

## (2) Propose a standard F/OSS architecture for cloud

- **Promote and integrate** « best of breed » F/OSS for cloud (OW2 projects and 3<sup>rd</sup> party projects)
- Participate in **collaborative Cloud Projects** with OSCi partners

## (3) Support collaboration based on common understanding and goals

- **Workshops** with R&D Labs and 3<sup>rd</sup> Party Projects to exchange about projects, domains and synergies to be explored / covered in OSCi
- **Roadshow** in France, Europe, China, Brazil, US to promote OSCi and to attract new contributions
- **Seminars** with Cloud users to promote OSCi and identify user's needs



SotA: State of the Art

# 3<sup>rd</sup> Party Projects (F/OSS)



- Libraries / APIs:  
Deltacloud, jCloud, libvirt, libCloud, ...
- VM:  
Abiquo, Convirt, KVM, OpenVZ, Qemu, VirtualBox, Xen, ...
- Development:  
JEE, Eclipse, POJO, Spring, Seam, Struts, GWT, Groovy, JRuby, V8, ...
- IaaS:  
ControlTier, Enomaly, Eucalyptus, OpenNebula, NiftyName, Nimbus, OpenStack, OpenQRM, Puppet, RabbitMQ, Reservoir, Traffic Server, Ubuntu, ...
- PaaS:  
Appscale, Gearman, Heroku, Joyent, WaveMaker, ...
- SaaS:  
Coadunation, Cornelios, eyeOS, Guacamol, TioLive, ...
- Deployment / Admin / Monitoring / Test:  
Bitnami, Capistrano, CDT, Cfengine, Chef, collectd, Bcfg2, Etics 2, Fabric, ganeti, Maven, Nagios, Puppet, Zenoss, ...
- Storage and NO/SQL:  
Cassandra, CouchDB, DRDB, Drizzle, Flare, Memcached, MongoDB, Neopod, XtremFS, ...
- File Systems:  
CloudStore, GlusterFS, Gpfs, Hdfs, Pohmelfs, ...
- Auto scalability:  
Scalr, ...
- Data processing:  
Hadoop, MapReduce, Pig Zookeeper, ...
- Green IT / Smart Grid:  
Nedo, ...
- Billing:  
Jbilling, ...

# Integration Project

## Collaborative project: Definition

### ➔ Integration Project

- project where partners have common interest in business or in approach to the market with common offer or in identified customer(s). In these cases, the integration effort and resources necessary for this effort, are supported by partners themselves.

### ➔ Collaborative Project

- project where partners agree on the benefits and common interests but do not have short term business interest or direct access to the market. They also agree these projects are necessary to facilitate access to a specific need of the market and decide to build in a common collaborative and co-funded effort. In order to achieve these goals, partners will look also to other sources of funding and therefore will have to set up altogether proposals and to answer call for projects from funding bodies.

# Existing Collaborative Projects



**4Caast** (EU FP7) Bull, Bonitasoft, UCM

*Jonas, Jasmine, Orchestra, Bonita, OpenNebula*

**Choreos** (EU FP7) PetalsLink, USP, Inria, **OW2**

*Petals*

**Compatible One** (FR FUI10) Inria, Bull, Institut Telecom, xWiki, **OW2**

*Jonas, Jasmine, ProActive, Entropy  
3<sup>rd</sup> party projects*

**EASI-Clouds** (EU EUREKA) Bull

*Jonas*

**InternetWare** (PRC 863) PKU

*Jonas, Jasmine,*

**OSAMI** (EU EUREKA) Large European consortium leaded by *Telvent* with Bull, Eteration

*Jonas, Easybeans, Jasmine, Eclipse WTP+STP*

**PLAY** (EU FP7) PetalsLink, INRIA, FT

*Petals, ProActive*

**SelfXL** (FR ANR) Bull, Inria, Ecoles Mines Nantes, FT

*Jonas, Jasmine, Clif, ProActive, Entropy*

**SOA4ALL** (EU FP7) Petals Link, Inria

*Petals, ProActive*

**SocEDA** (FR ANR ) Petals Link, ActiveEon, FT, Inria

*Petals, ProActive*

**Trustie** (PRC P863) Buaa, Nudt, Iscas, Pku, Cvic

???



# Domain: Definition



- ➔ **OSCi's entity under which identified technologies are grouped to cover all specific aspects addressed by this domain**
  - Domain may evolve and be enriched by new contributions, specifications etc.
- ➔ **A domain**
  - 1) Integrates different technologies: OW2 projects and 3<sup>rd</sup> party projects (only F/OSS)
  - 2) May need new technologies to be developed
  - 3) Gathers partners who work altogether to develop this domain
    - Partners identify altogether type of resources to make this work sustainable: Integration Project or Collaborative Project
- ➔ **A domain is characterized by**
  - a) Goal(s): define clearly the objectives and boundaries
  - b) Challenge(s): identify gaps and locks to be covered by domain
  - c) Use Case: a very well identified and powerful use case justifying the existence of these technologies
- ➔ **A domain has a status in term of time frame and life cycle**
  - 1) Short term (1 to 2 years) / Long term (2 to 5 years)
  - 2) Production ready / Work in progress / Discussions in progress

# Domain 1: Self-sizing and green PaaS

## ➔ Goal: improve the platform efficiency

- Performance
- Energy cost

## ➔ Challenges

- Cluster growth/shrink capabilities according to workload
- Data center multi-tenancy with limited capacities requires arbitration policies
- Data center placement for minimizing the energy consumption

## ➔ Use case: Orange Infrastructure

- Large-scale data centers (+40,000 x86 servers)
- JavaEE JOnAS middleware stack: +250 applications, +1,000 application server instances
- Static server consolidation (12/1) through virtualization: Utilization level increased from 20% to 75%

## ➔ Technologies

- OW2: JOnAS, Jasmine, ProActive, Clif, Entropy
- 3<sup>rd</sup> party: Xen, KVM + Collaboration in progress: OpenStack, OpenNebula, Ubuntu
- Technology to be developed:

## ➔ Partners

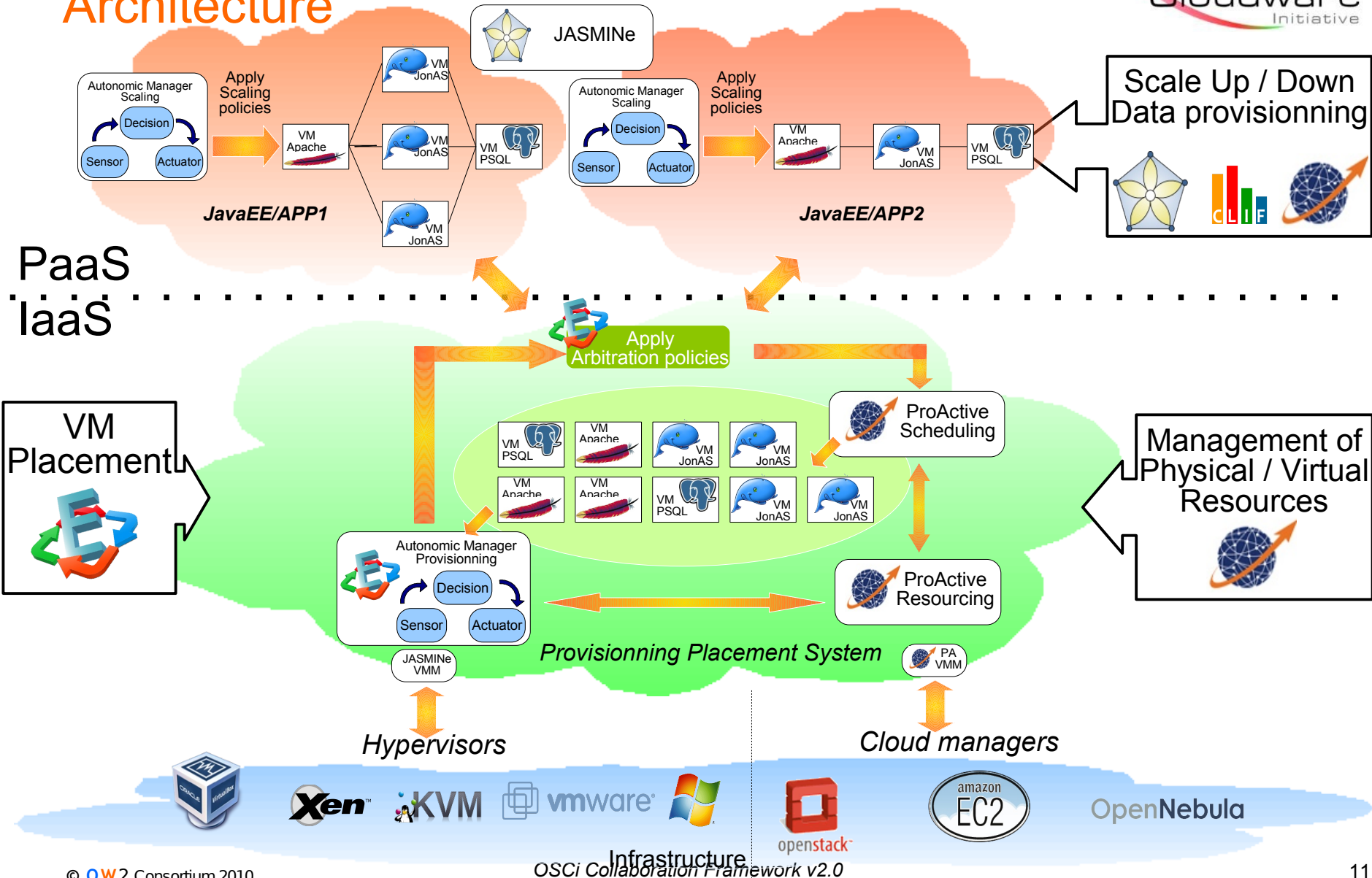
- Bull, Ecole Mines Nantes, Inria, Orange, ActiveEon  
O-Engine, Iscas, Buaa, PKU, UCM, ...

## ➔ Resources

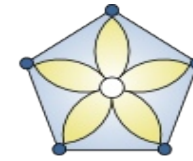
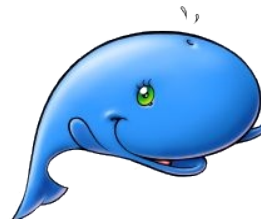
- Collaborative Projects: SelfXL (ANR), 4caast (FP7), Easi-Clouds (ITEA2), Compatible One (FU10), Interneware (863)

SHORT TERM  
Work  
in Progress

# Self-sizing and green PaaS Architecture



# JOnAS, Jasmine: Toolset for SaaS



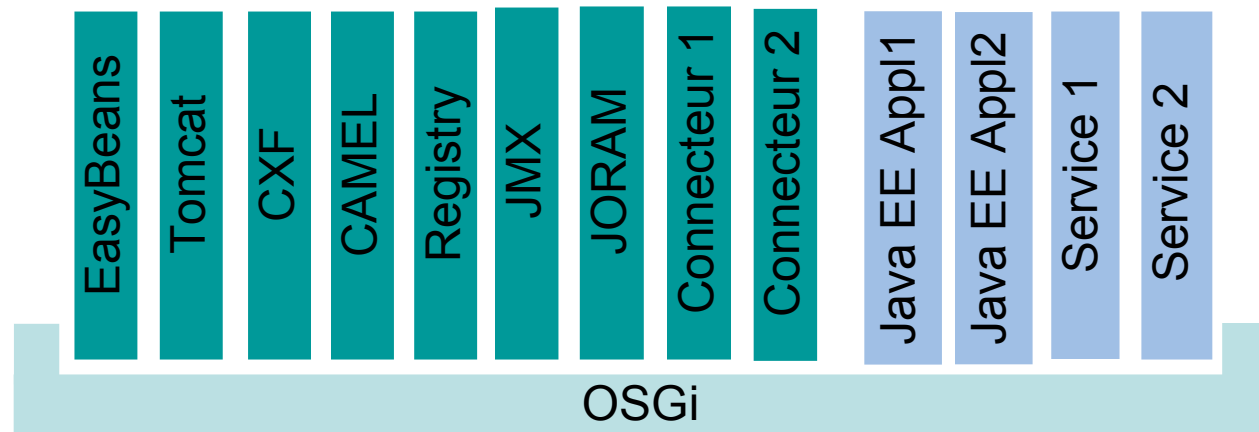
➔ **Deploy dynamically complex applications and services on Clouds**

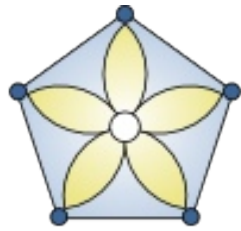
➔ **Smart Administration:**

- Supervision
- Self-management

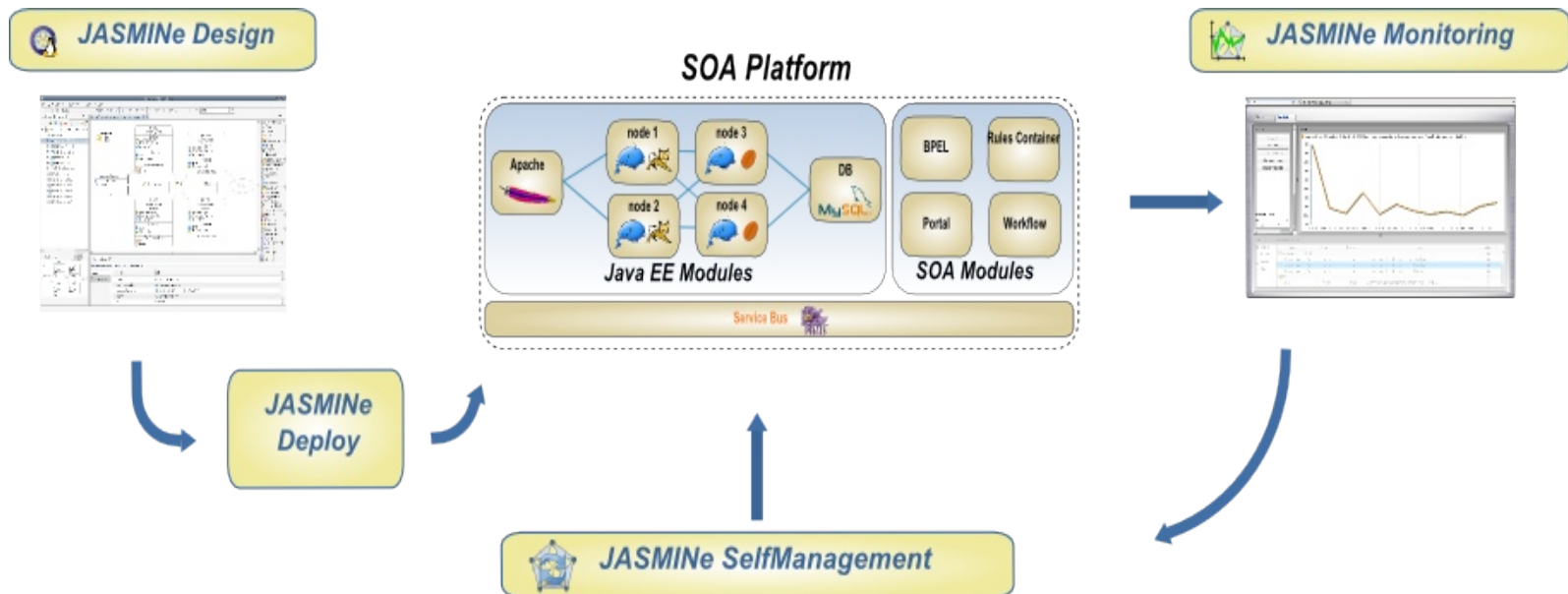
➔ **Technologies**

- JavaEE
- OSGi
- JOnAS
- JASMINe
- Orchestra

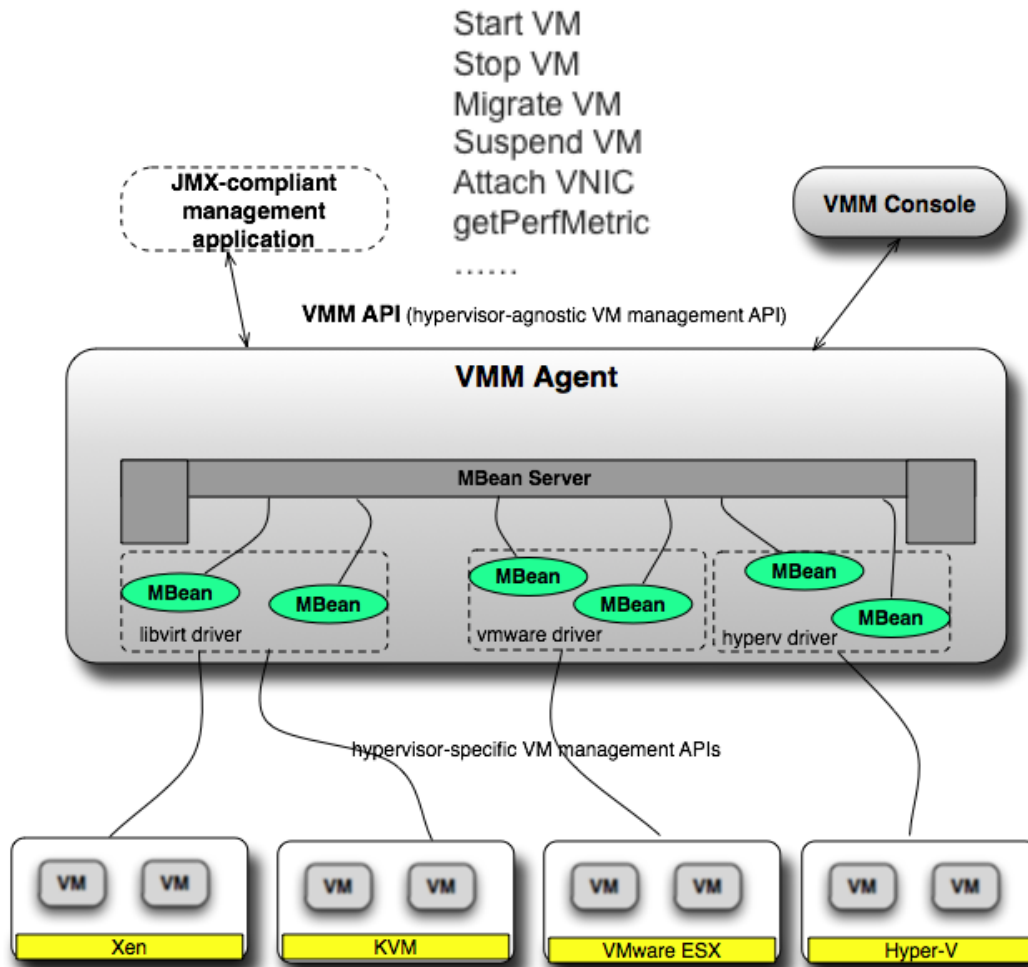




- ➔ Management tools for SOA platform
- ➔ Cross-platform (JOnAS AS prime target)
- ➔ Four main features: Design, Deploy, Monitoring, Self-\*



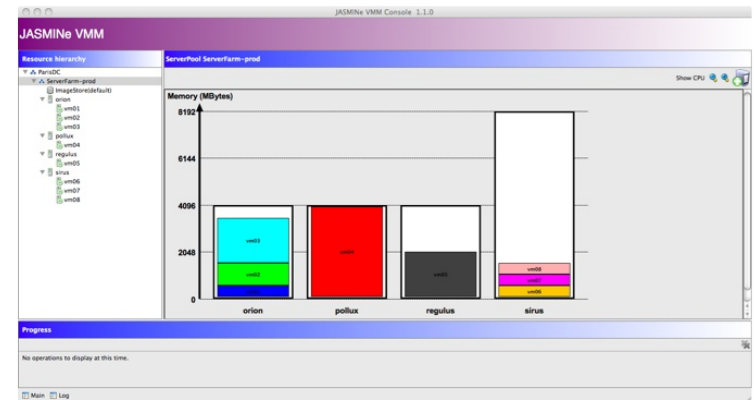
# JASMINe Virtual Machine Management (VMM)

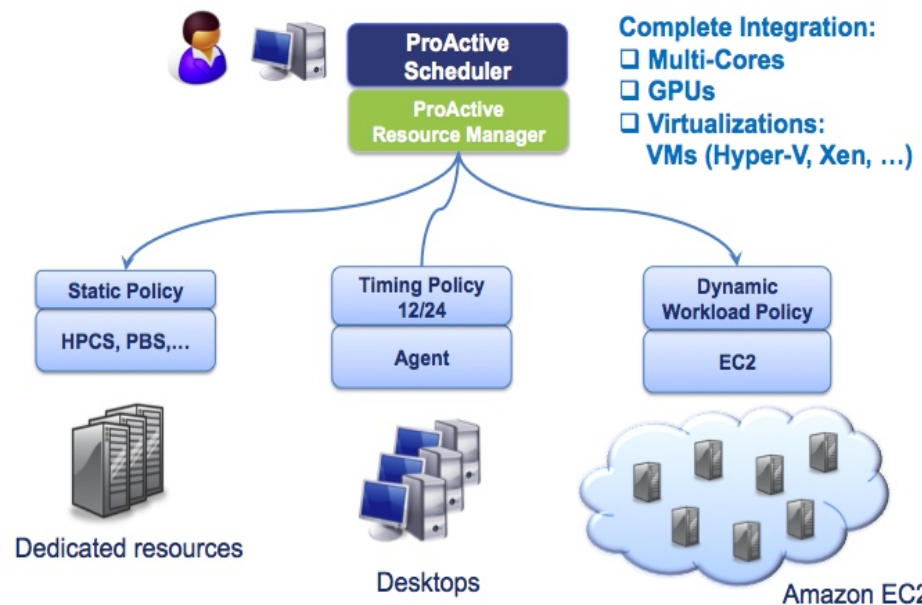
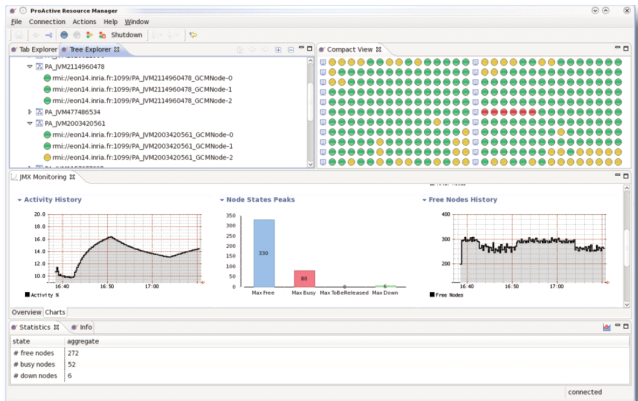


## ➔ Support for multiple hypervisors:

- Open-source Xen and KVM
- Citrix XenServer
- VMware virtualCenter 2.x
- Microsoft Hyper-V

## ➔ using xenapi, libvirt, VI API, wmi





- Complete Integration:**
- Multi-Cores
  - GPUs
  - Virtualizations: VMs (Hyper-V, Xen, ...)

## "Infinite" resources management

➔ Provisionning of new ressources in case of capacity overflow

## Java EE PaaS as a virtual ressource

➔ Java applications deployment and services execution (EJBs, WS, OSGi, ...)

## Java EE PaaS performance optimization

- ➔ EJB3.1 and asynchronous methods support
- ➔ Proactive Parallel library deployed as an OSGi service



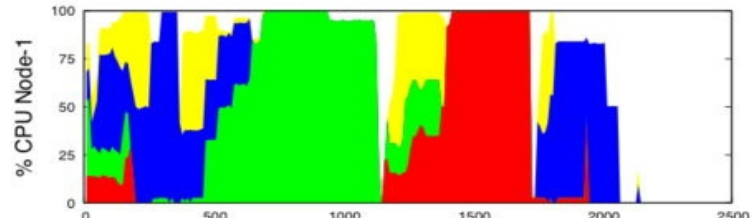
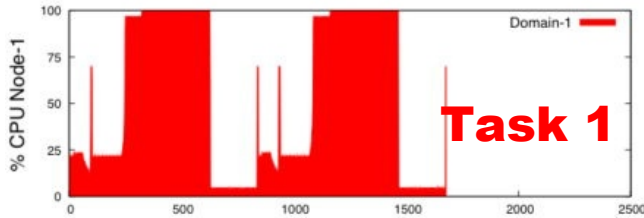
# 25% Energy Savings



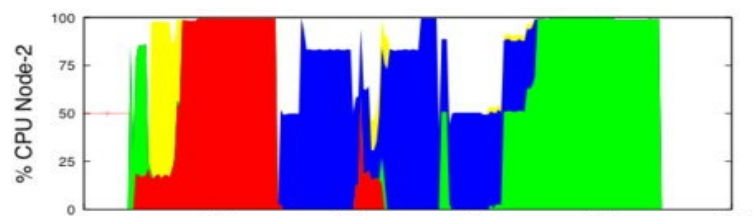
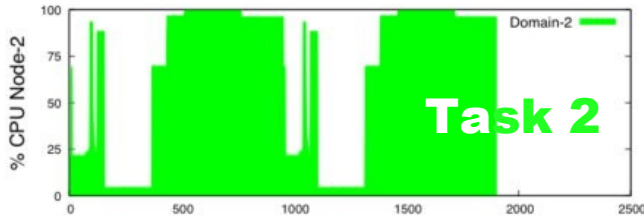
## Before

## After

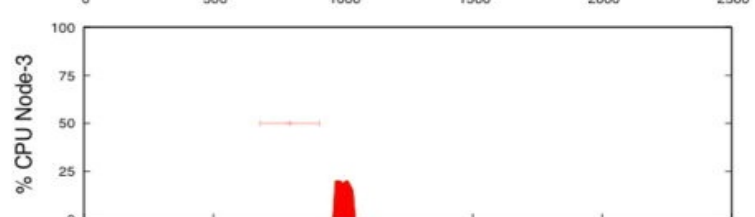
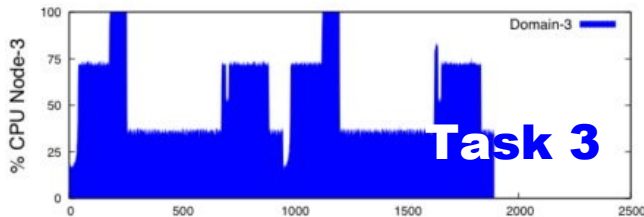
### Server 1



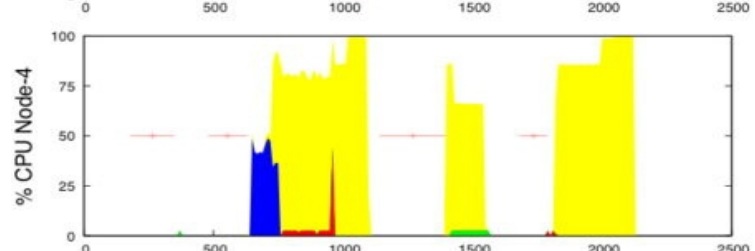
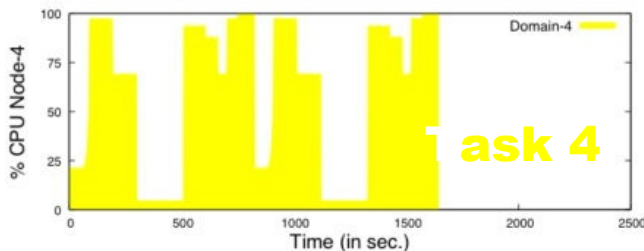
### Server 2



### Server 3



### Server 4





# Domain 2: Distributed interoperability architecture

## ➔ Goal: improve interoperability between heterogeneous service domains/clouds

- Distributed Service Bus (DSB) made of Petals nodes organized in domains/clouds
- Highly distributed service architectures
- Beyond first generation cloud

## ➔ Challenges

- Large scale P2P distributed registry
- QoS policy management over heterogeneous domains
- Inter clouds interoperability

## ➔ Use Case: Deployment on Grid 5000 (?)

- An infrastructure distributed in 9 sites around France, for research in large-scale parallel and distributed systems

## ➔ Technologies

- OW2: Petals ESB, ProActive
- 3<sup>rd</sup> Party: Eucalyptus, OpenNebula, NiftyName, OpenStack, ...
- Technology to be developed:...

## ➔ Partners

- Petals Link, ActiveEon, Inria, USP, Fokus

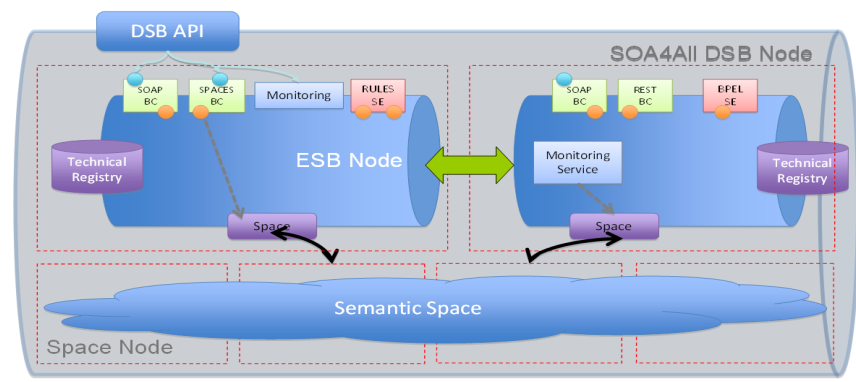
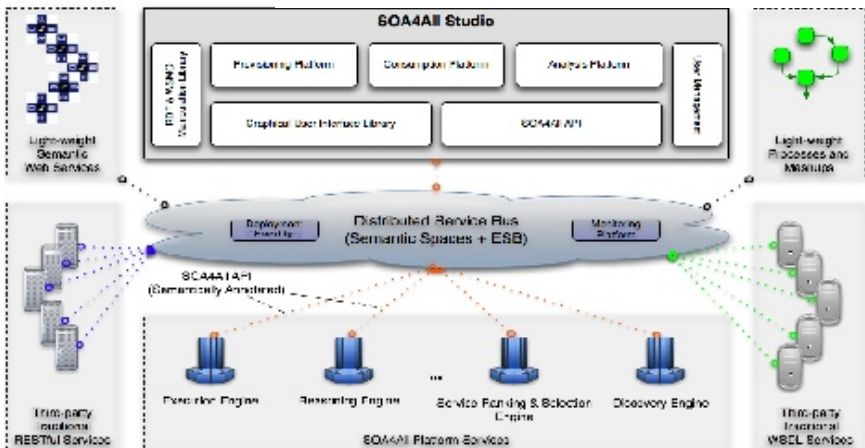
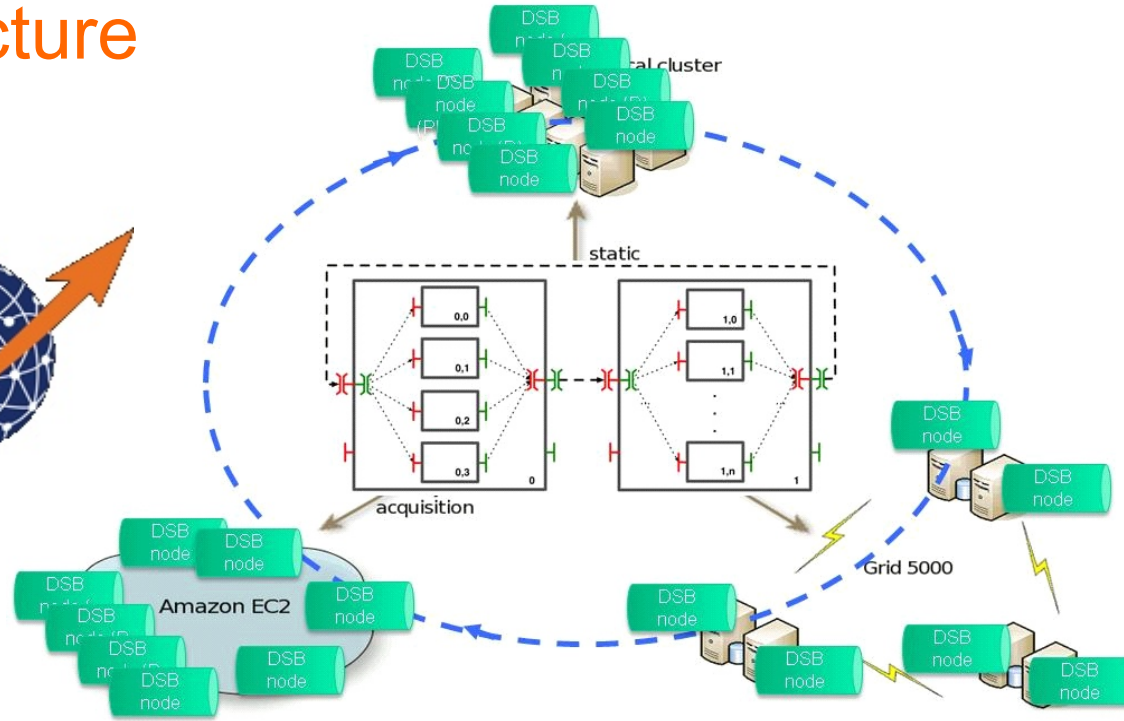
## ➔ Resources

- Collaborative projects: Soceda (ANR), Soa4all (FP7), Choreos (FP7), ...



SHORT TERM  
Work  
in Progress

# Distributed interoperability Architecture

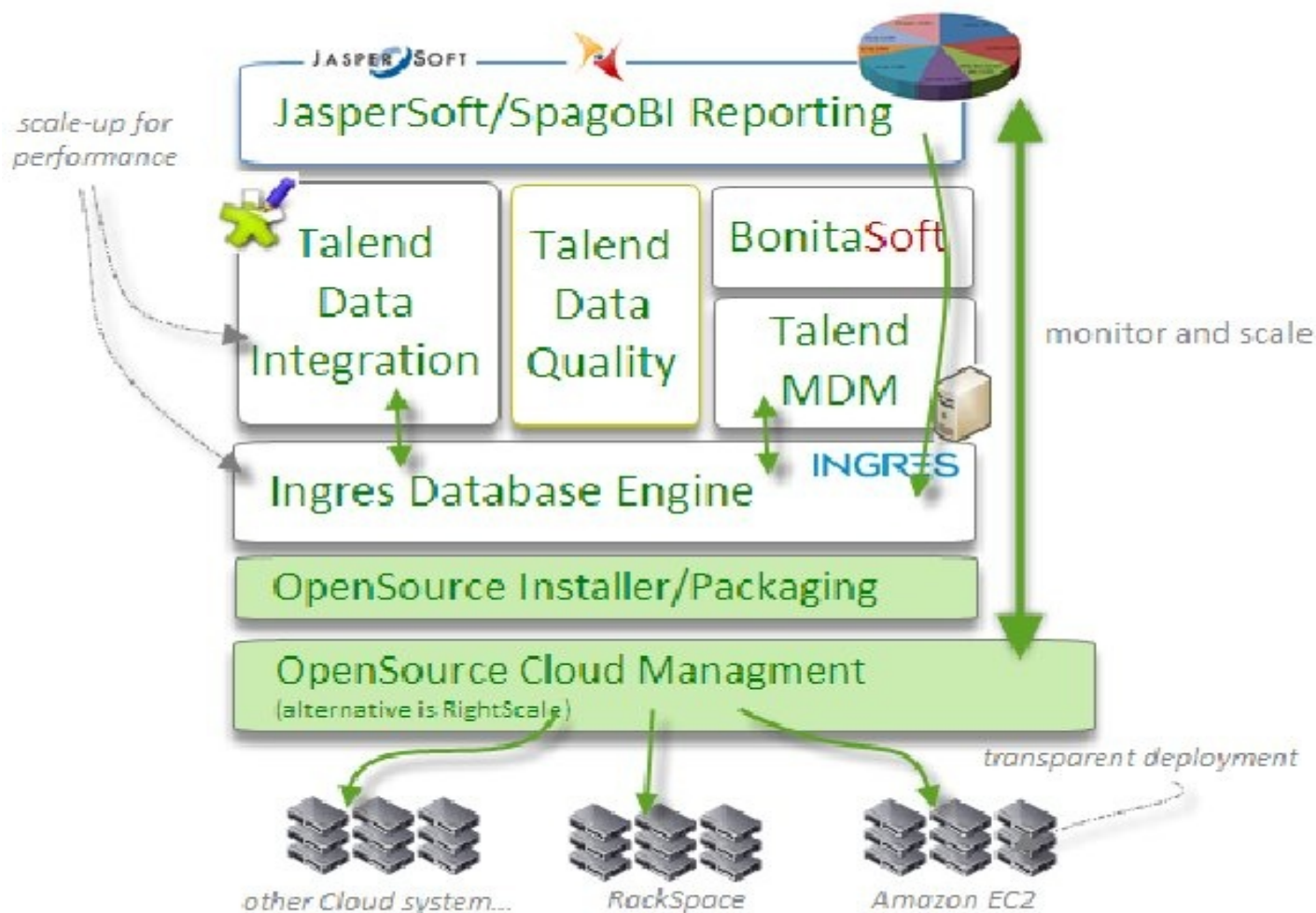


# Domain 3: BI 4 Cloud

- ➔ **Goal: Provide a framework to develop agile and robust Business Intelligence systems on the Cloud**
  - Provide cloud images pre-compiled with components for BI from industry's leading vendors
  - Provide expandable, scalable, interconnected, and robust Cloud images
  - Create separate images for database layer, data processing, reporting, monitoring and metadata exchange
- ➔ **Challenges:**
  - Sharing resources and metadata by all applications
  - Global licensing model
  - Monitoring usage and automatically scaling up/down based on usage
  - Providing upgrades as different partners promotes newer versions individually
- ➔ **Use Case:**
  - A few client's project from different industries (TBD)
- ➔ **Technologies**
  - OW2: Bonita (BPM), SpagoBi, Talend(DI,DQ,MDM)
  - 3<sup>rd</sup> Party: Ingres(RDBMS), Jaspersoft (BI),
- ➔ **Partners**
  - OW2: Bonitasoft, Engineering, Ingres, Jaspersoft, Talend (DI,DQ,MDM)
  - Non-OW2 : Bitnami, **non F/OSS: RightScale (F/OSS alternative TBD)**
- ➔ **Resources: Integration project**
  - Integration project

**SHORT TERM**  
Discussions  
in Progress

# BI 4 Cloud Architecture



# Domain 4: Massively distributed clouds

## ➔ Goal: improve sovereignty and privacy

- Non hierarchical and massively distributed cloud
  - “Freedom in the cloud” by E. Moglen, Feb 2010  
see <http://www.2020flossroadmap.org/2010-version/>
    - From SeaMicro to ViFib or Hedera Tech, from Marvell ShivaPlug ( TonidoPlug, PogoPlug, Ctera CloudPlug, Axentra HipServ, Eyecon, ...) to TI Beagle Board and Open Hardware
- Next generation cloud architecture
- New home services (private cloud): *“access your applications, files, photos, music and media from anywhere via a web browser “*

## ➔ Challenges

- Large scale distribution, super elasticity and automation for massively decentralized systems
- Security, safety and privacy e.g. cryptography for the masses, personal control
- Energy efficiency on massive scales
- High speed public network

## ➔ Use Case: domestic cloud for citizens

### ➔ Technologies

- Key R&D trend for next 5 years with technological challenges

### ➔ Partners

- Research: INRIA (J-B. Stefani, F. Lefessant, P. Merle), CNRS (E. Benazera)

### ➔ Resources

- Which collaborative projects? ANR, FP7, FUI, Grand Emprunt, Economie Digitale

LONG TERM  
Discussions  
in Progress

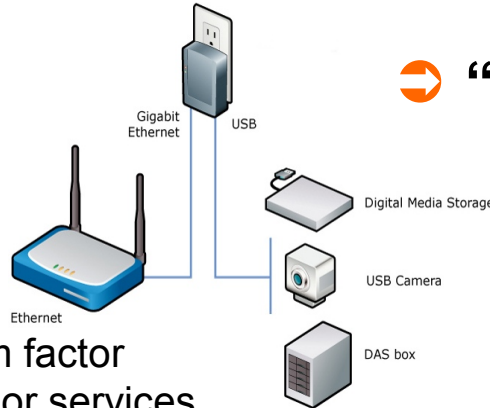
# Massively distributed clouds

## Specifications (as for 2010)



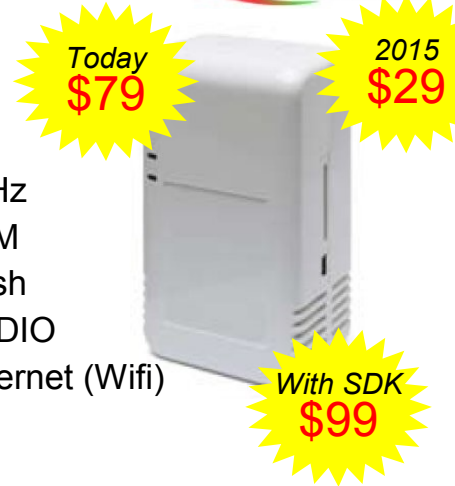
### ➔ Features

- **Mobile**
  - pluggable on network
- **User friendly**
  - “wall wart” form factor
  - set-up by vendor services
- **Smart appliance**
  - automated boot
  - network connectivity (dynamic IP address)
  - data synchronization (personal data from any social networks)
  - encrypted backup to trustworthy clouds with multiple replication
  - secured connection with trustworthy clouds
- **Power efficient**
  - green computing device



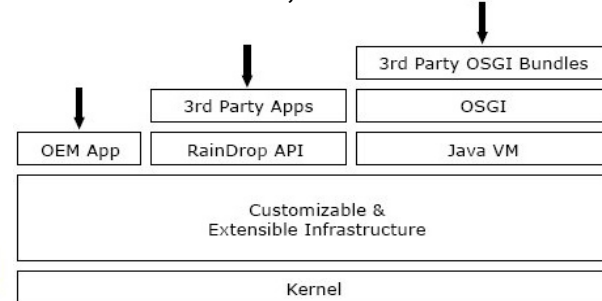
### ➔ “Open” HW

- ARM 1.2GHz
- 512MB RAM
- 512MB Flash
- USB 2.0, SDIO
- Gigabit Ethernet (Wifi)
- 5 -7 Watts

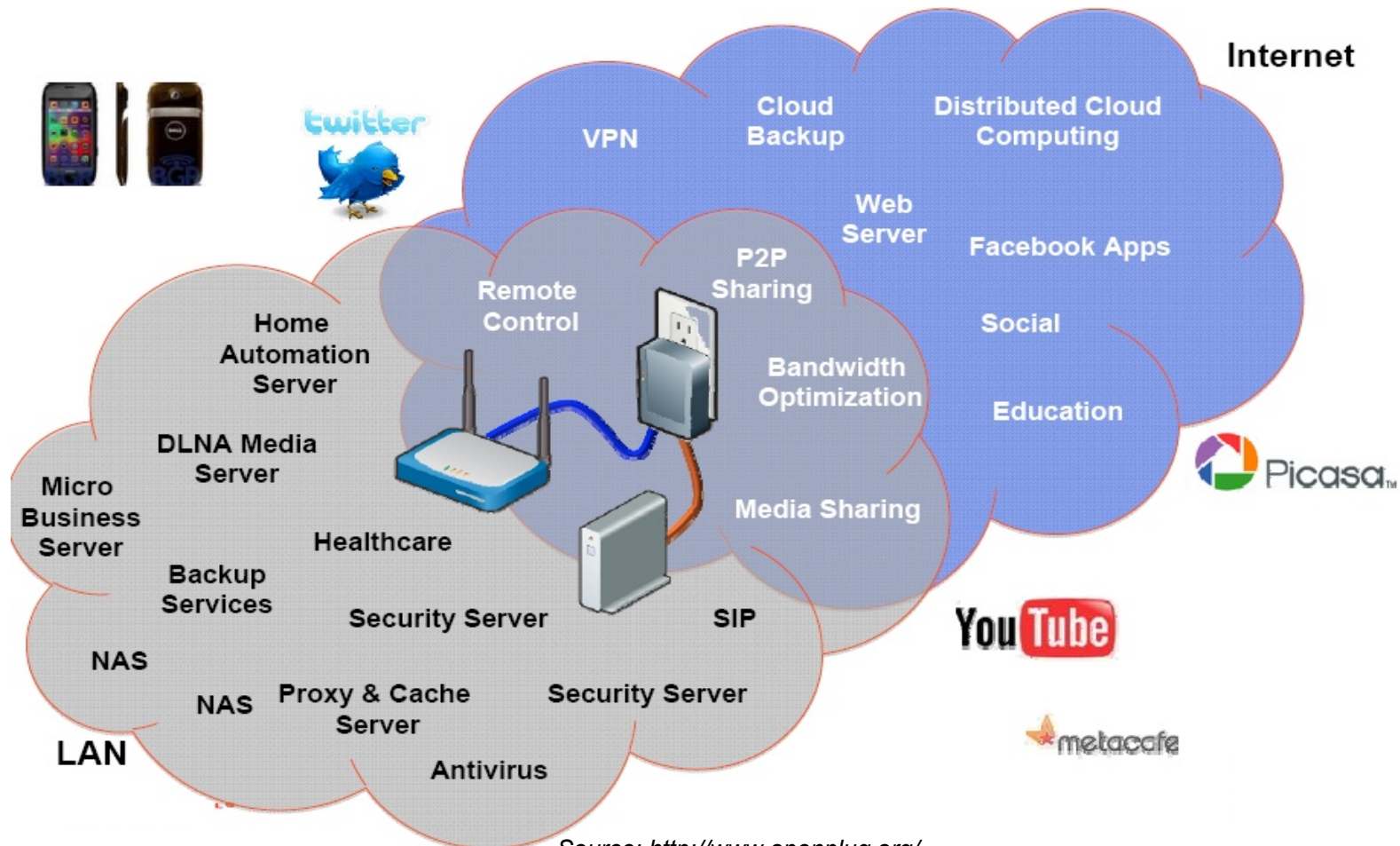


### ➔ F/OSS

- OS: GNU Linux, TCP/IP, HTTP server (Apache, lighttpd, tiny httpd, ...), VPN, Backup + **SDK**
- OW2 cloudware: JOnAS, Petals
- Social: Plexus, Diaspora, Torrent, Identi.ca ...



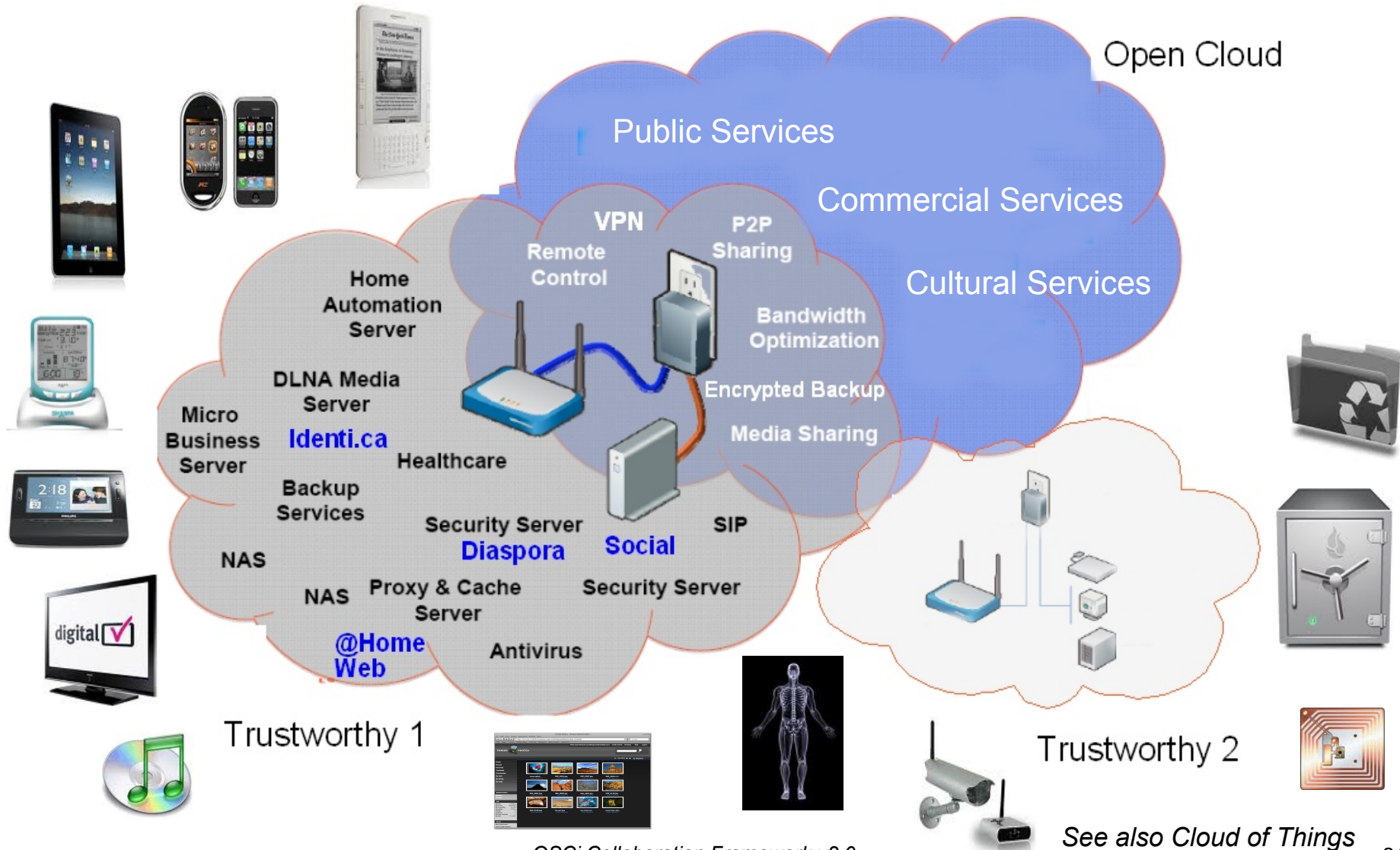
# Massively distributed clouds Architecture (as for 2010)



Source: <http://www.openplug.org/>

[http://www.youtube.com/watch?v=3y72F3SDjM4&feature=player\\_embedded](http://www.youtube.com/watch?v=3y72F3SDjM4&feature=player_embedded)

# Massively distributed clouds Architecture (as for 2015 - Draft)





# Other related domains

## ➔ Open Standards for Cloud

- interoperability
- common APIs to integrate any services / component at any layer of the cloud
- intelligence at the interface in Paas and Saas
- service-oriented and component-based applications
- event-based architecture for the cloud
- programming and scheduling
- virtual desktop
- workflow / business process
- ...

## ➔ Administration, deployment, security, ...

- mission critical requirement performance / scaling / QOS
- admin process automation
- digital identity, federating Identities, policies and accounting elements
- security / privacy

## ➔ Massively distributed cloud incl. storage and data

- autonomic, distributed systems
- security and safety
- web intelligence for pervasive environment
- ...

## ➔ Internet of things on Cloud

- cloud as a bus for connecting smart objects
- home automation, smart cities, transportation
- ...

## ➔ Software for Green IT

- energy savings
- smart grids
- ...

# Standards for cloud interoperability by Fraunhofer FOKUS

- ➔ Current standardization activities in the area of Cloud Computing interoperability focus on aspects of service operation such as virtual machine formats, APIs, languages, etc.
- ➔ Areas beyond those standards (on APIs, languages, etc) to enable the operation of Cloud services on different Cloud Computing platforms can be identified:
  - Large scaled service provisioning requires more than a suitable infrastructure of (virtualized) resources.
  - Processes for services management supporting the complete service lifecycle (definition, design, development, operation, termination, improvement) need to be in place.
  - This includes e.g. financial management, risk management, definition of SLAs and OLAs, continuity management, testing and validation, identity management, event, incident and problem management, as well as mechanism for measurements, taking user feedback into account, and for driving a proper improvement process.
  - In particular if federated scenarios are considered where services are provided across several Cloud providers (horizontally or vertically, permanent or temporal) the problem is how to provide effective and suitable service management support.
  - Standardized processes and interfaces will not only support the definition of tailored management infrastructures, where customers can chose a service bundle which suits their management needs, but will also create market opportunities for "service-management as a service", both on the software level (e.g., open source software to be operated by a PaaS-Provider) or on service level (SaaS offerings).

## ➔ Any OW2 member or non member with

- a clear and declared interests for OSCi
- an active role in OSCi

## ➔ Directory of partners

- Organization:
- Contact(s):
- Email(s)
- Phone(s):
- OW2 members (y/n)
- OW2 or 3<sup>rd</sup> Party Project(s)
- Role(s) in OSCi
- Quote (your interest for OSCi)

# A business ecosystem at work

75 subscribers to cloud-initiative mailing list – 4 Oct 2010

**ActiveEon\***

**Bonitasoft\***

**Buaa\***

**Bull\***

**Cohesive FT\***

**Cvic\***

**Ecole Mines Nantes\***

*(Edifixio)*

**Engineering\***

**Fraunhofer Fokus\***

*(Funambol)*

*(Gsia)*

**Ingres\***

**Inria**

*Oasis\*, Sardes, Adam\**

**Iscas\***

**Jaspersoft\***

**Konsultex\***

*(Neociclo)*

**Nudt\***

**O-Engine\***

**Orange Labs\***

**Pku\***

**Petals Link\***

**Talend\***

**Technical University  
Berlin\***

**Institut Telecom\***

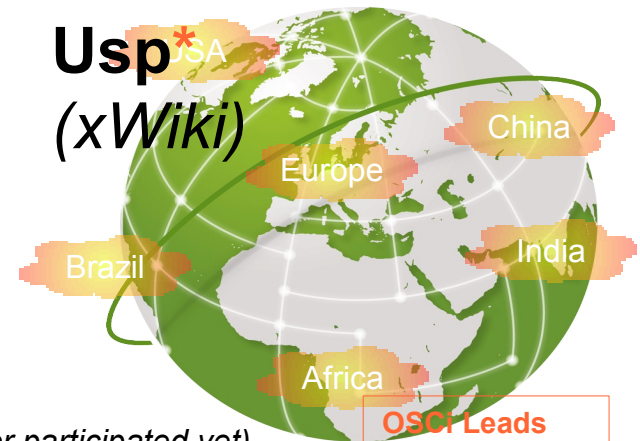
*Telecom St-Etienne*

**Ucm\***

**Unifor\***

**UShareSoft\***

**Usp\***  
*(xWiki)*



\* *have expressed their interest for OSCi (see Appendix 1) (have not expressed or participated yet)*

OSCi Leads  
OW2 Members  
Non Members

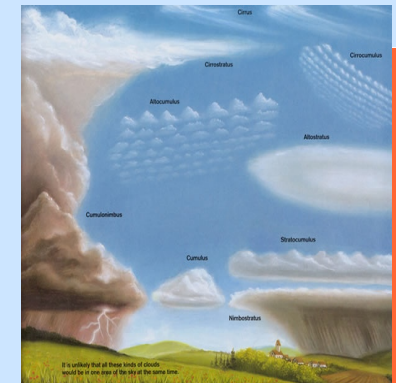
# Expert Group: Definition

## ➔ Responsible for the scope of the initiative and the R&D Agenda

- brainstorm, look for synergies and regularly exchange news about projects to get in sync.
- open dialogue with other contributors, projects and collect info and innovative ideas

## ➔ R&D Agenda

- Scope and Vision (domains to explore)
- State of the Art
  - Description
    - OW2 Project(s) or 3<sup>rd</sup> Party Projects
- Competitiveness analysis
- R&D Domains (including integration)
  - Topics with well identified gaps and locks
    - Use case, market analysis, ...
    - Synergies with Project(s) OW2 / Non OW2
    - Collaborative project or Integration Project
      - » Partner(s):
      - » R&D program(s):
    - Milestones
- Roadmap



State of the art



Innovation

# Governance of Expert Group



## ➔ **Members of the OSCi expert group are**

- Invited / co-opted
- Active (meritocracy)
- Individuals

# Expert Group: Members



Alexandre Lefebvre  
Benoit Pelletier  
Bruno Bompar  
Cédric Carbone  
Charles Souillard  
Denis Caromel  
François Exertier  
Hailong Sun  
Hongbo Xu  
Huanying Liu

Jean-Pierre Laisné  
Jean-Pierre Lorré  
Jun Wei  
Lionel Seinturier  
Patrick Moreau  
Pierre-Yves Gibello  
Shi Dianxi  
Yin Gang  
Yuri Glickman

Jean-Bernard Stefani (to be invited)

# R&D Agenda: Definition



## ⇒ « Open Cloud » map including

### ▪ **Strategic, economical and technological arguments**

- it will focus on key technological **domains** which partners aim at developing together
  - Identify **OW2 projects and 3rd party projects to be integrated**
  - Identify **technology gaps, locks and challenges with technology to be developed**

### ▪ **Exemplary use cases**

- Identify ways to apply these projects to **trial applicative areas** such as smart cities or smart energy (market impact, societal results; ...)

### ▪ **A competitiveness analysis**

- define an open source position on a highly competitive market.

### ▪ **A roadmap**

- Short term and long term objectives
  - combine long term vision and short term agility for delivering technology which provides open source differentiation

## ⇒ **This agenda to be communicated to any sponsor and funding bodies**

- proposal for **integration and collaborative projects** referring to this agenda



# R&D Agenda: Contacts



- Scope and Vision
  - All Members of Expert Group
- State of the Art
  - Lionel Seinturier
  - Jean-Pierre Lorré
- Competitiveness analysis (including F/OSS strategy)
  - Patrick Moreau
- R&D Domains (including integration)
  1. Self sizing and green PaaS: Alexandre Lefebvre, Benoit Pelletier, Denis Caromel, François Exertier, Jun Wei
  2. Massively distributed services: Denis Caromel, Jean-Pierre Lorré, Pierre-Yves Gibello, Yuri Glickman
  3. BI4Cloud: Bruno Bompar, Cedric Carbone, Charles Souillard, Davide Zerbetto, Mike Moody, Stefano Scamuzzo, Yuri Glickman
  4. Massively distributed cloud: Jean-Pierre Laisné, Alexandre Lefebvre, Jean-Pierre Lorré, Jean-Bernard Stefani, Noel de Palma,, Yuri Glickman
- OSCi Roadmap
  - Alexandre Lefebvre, Cedric Carbone, Charles Souillard, Jean-Pierre Laisné, Jean-Pierre Lorré, Patrick Moreau
  - Global Coordination: Jean-Pierre Laisné and Hongbo Xu

# Community Management Team: Definition



- ➔ **Define and organize communication (counting on OW2's support and infrastructure) in order to let the world know about OSCi, its partners and its projects**
- ➔ **Community Management**
  - **Virtual**
    - Directory of partners
    - Mailing lists, web site, wiki
    - Webinars, social networks
  - **Physical**
    - For developers: Workshops, seminars, tutorials, code camp
    - For users: Show, conferences
- ➔ **Communication**
  - Material: Slides, White papers
  - Call for participation (papers, seminars, workshops, projects, ...)
  - Announcements (R&D Agenda, project results, collaborative projects, ...)
- ➔ **Lobbying**
  - New members for OW2, new partners for OSCi
  - International funding bodies (ANR, EC, EUREKA, ...)

# Community Management Team: Contacts



## ➔ Community Management

- OSCi co-leaders: Jean-Pierre Laisné, Alexandre Lefebvre, Patrick Moreau
- OW2 Management Office: Cedric Thomas

## ➔ Communication

- OW2 Management Office: Cedric Thomas

## ➔ Lobbying

- Jean-Pierre Laisné
- Cedric Thomas
- Hongbo Xu



# Next steps

- (1) Invitation to OSCi Expert Group
- (2) Organize OSCi Community Management Team
- (3) Develop OSCi Research Agenda
- (4) Develop international collaborations
- (5) Organize integration and collaborative projects
- (6) Organize first OSCi workshop

*23 Nov 2010 in INRIA Paris (day before OW2 Annual Conference)*

# OSCi's presence in Q4 2010

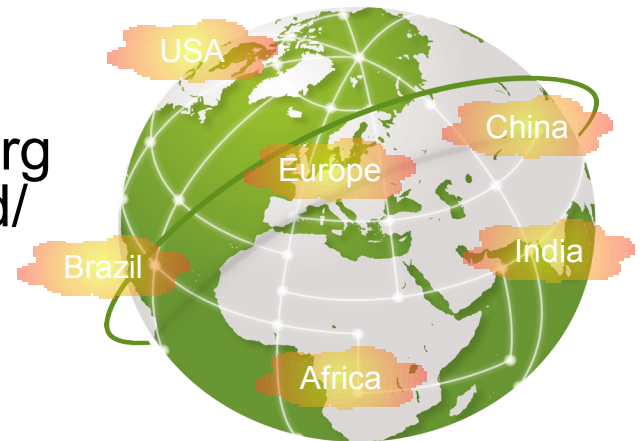


- OW2 Cloud Computing Workshop  
*Beijing, 21 Sept <<< OSCi Introduction + Call for participation*
- ICT2010 Networking Session - Research/Industry Collaboration on Open Source Cloud Middleware  
*Brussels, 28 Sept*
- Open World Forum – Open Cloud Panel & Workshop  
*Paris, 30 Sept - 1 Oct <<< OSCi Introduction + Call for participation*
- IRILL Open Days  
*Paris, 4 - 5 Oct <<< OSCi Introduction + Call for participation*
- ANSSI  
*Paris, 18 Oct <<< OSCi Introduction + Call for participation*
- EC Collaboration Meeting  
*Brussels, 19 - 20 Oct. <<< OSCi Introduction + Call for participation*
- ITEA2 Symposium - Cloud Parallel Session  
*Ghent, 27 Oct. <<< OSCi Introduction + Call for participation*
- OSCi 1<sup>st</sup> Workshop  
*Paris, 23 Nov. <<< 1<sup>st</sup> Draft of R&D Agenda + Domains*
- OW2 Annual Conference  
*Paris, 24 - 25 Nov. <<< Call for paper + Panel*



## How to join

- Mailing list: [cloud-initiative AT ow2.org](mailto:cloud-initiative@ow2.org)
- Web: <http://www.ow2.org/view/Cloud/>



# Appendix 1: Synergies

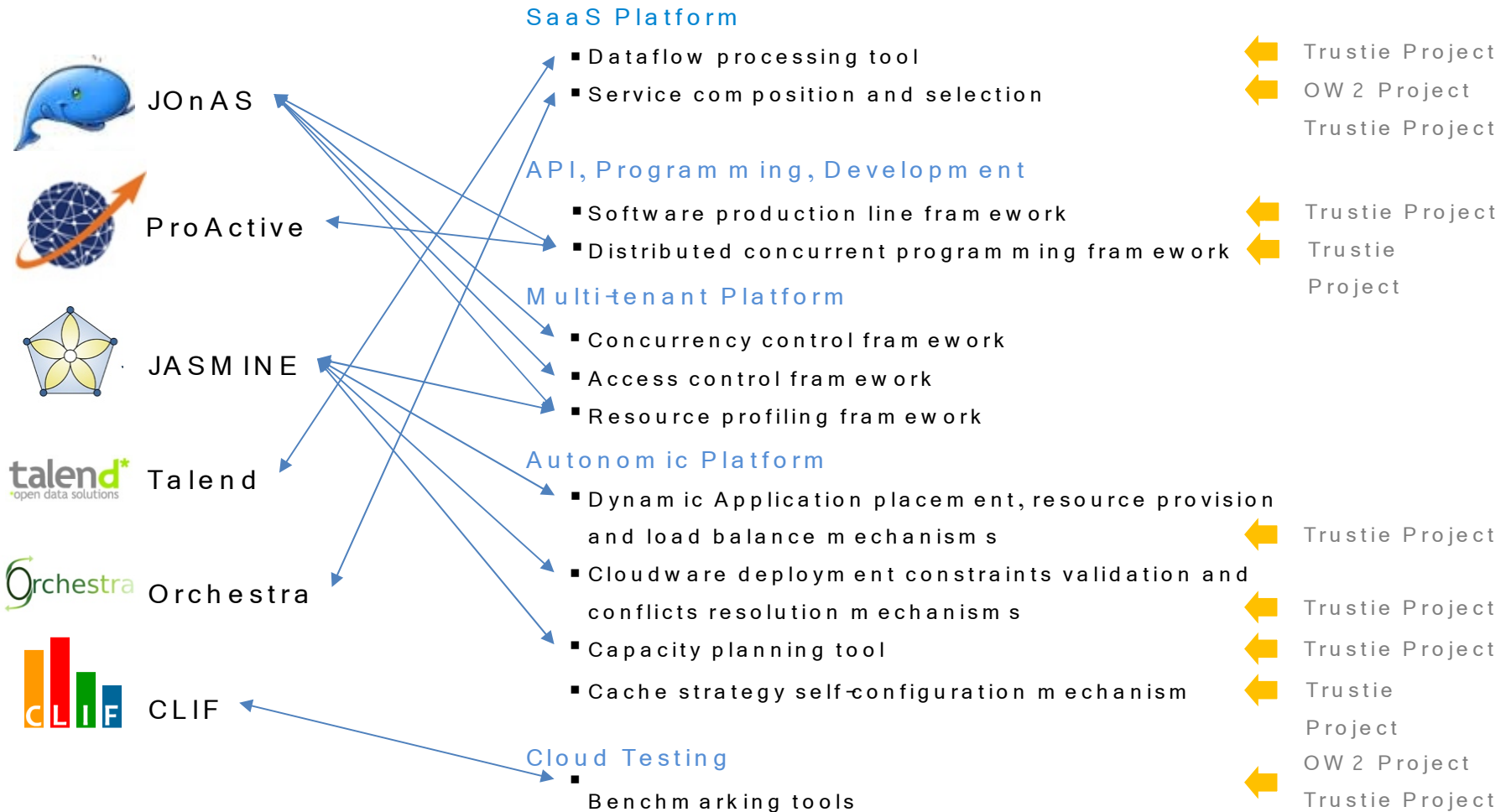




# Synergies envisioned by ISCAS

## OW2 Code Base

## ISCAS technology 4 Cloudware



## Canonical's request: an opportunity for enlarging domain 1?

- > To: Jean-Pierre Laisné <jean-pierre.laisne@bull.net>
- > From: Nicolas Barcet <nick.barcet@canonical.com>
- > Date: 07/02/2010 01:44PM
- > cc: John Pugh <john.pugh@canonical.com>
- > Subject: OW2 scalable platform
- >
- > Bonjour Jean-Pierre,
- >
- > Following up on our conversation today, I would be very interested in
- > working with OW2 to build a demo running on Ubuntu Enterprise Cloud and
- > EC2 demonstrating how your PaaS platform can benefit from our IaaS offering.
- >
- > Target would be for this demo to be used by our joint forces to
- > demonstrate the benefits of automated scalability to projects building
- > high demand platforms.
- >
- > Deliverables:
- > - A machine image for UEC/EC2 built on Ubuntu including
- > - OW2 PaaS components
- > - A sample application
- > - A demo script demonstrating how the application can dynamically spawn
- > and kill instances of itself as demand increases and decreases
- >
- > This means that your PaaS component needs to be EC2 API enabled, but I
- > would doubt that it is not.
- >
- > Possible subsequent followups:
- > - Inclusion of the demo image in the UEC appliance store
- > - More formal partnership between Canonical and OW2
- >
- > Let me know what you think of this.
- >
- > Best regards,
- > Nick



# OpenStack & OSCi



## OW2 Consortium will Support OpenStack with its Open Source Cloudware Initiative

OSCON, July 22, 2010

The two organizations share the vision for truly open and interoperable cloud computing architecture.

*“By collaborating with the OW2 OSC Initiative, OpenStack users will have access to a scalable, ondemand JavaEE autonomic server provisioning system,”*  
Bret Piatt, Community Stacker

[www.openstack.org](http://www.openstack.org)



Press release FOR IMMEDIATE RELEASE

### OW2 Consortium will Support OpenStack with its Open Source Cloudware Initiative

*OW2 Open Source Cloudware Initiative will collaborate with the OpenStack™ Community to provide users a fully open source cloud software stack.*

Portland, Oregon, July 22, 2010 – The OW2 Consortium announces its intention to collaborate with the newly launched OpenStack™ community to create open source middleware compatible with OpenStack. The two organizations share the vision for truly open and interoperable cloud computing architecture.

A broadscale community effort, the OW2 Open Source Cloudware Initiative (OSC Initiative) is developing an integrated portfolio of open source components for cloud computing. The OSC Initiative will help Cloud users to build and manage self-sizing distributed applications on elastic and virtualized execution environments.

“The open cloud middleware developed by the OSC Initiative is uniquely positioned to leverage the OpenStack project” says OW2 CEO Cedric Thomas, “OW2 welcomes the opportunity to work with the OpenStack community to jointly deliver state-of-the-art and open solutions for enterprise applications in the Cloud.”

On July 19, Rackspace® Hosting announced the creation of the OpenStack™ community, an open-source cloud platform designed to foster the emergence of technology standards and cloud interoperability. The primary goal of the OpenStack community is “to produce the ubiquitous Open Source cloud computing platform that will meet the needs of public and private cloud providers regardless of size, by being simple to implement and massively scalable.”

“By collaborating with the OW2 OSC Initiative, OpenStack users will have access to a scalable, on-demand JavaEE autonomic server provisioning system,” Bret Piatt, Community Stacker, “Without an open design and development process, global collaboration between these two open source communities would not be possible.”

#### About OW2

Founded in January 2007, OW2 is an independent industry community dedicated to developing open source code infrastructure (middleware and generic applications) and to fostering a vibrant community and business ecosystem. The OW2 Consortium hosts some one hundred technology projects, including Aceleo, ASM, Bonita, eXo Platform, Funambol, JOnAS, Lomboz, Orbeon Forms, PetALS, ProActive, SpagoBI and XWiki.

#### About OpenStack™

OpenStack is a large-scale open source cloud project and community established to drive industry standards, end cloud lock-in and speed the adoption of cloud technologies by service providers and enterprises. The project currently includes OpenStack Object Storage, a fully distributed object store, and OpenStack Compute, a scalable compute provisioning engine. OpenStack was founded by Rackspace® Hosting has the support of more than 25 technology industry leaders. For more information and to join the community, visit [OpenStack.org](http://OpenStack.org)

Visit [www.ow2.org](http://www.ow2.org) and [www.openstack.org](http://www.openstack.org)

#### Contact

OW2 Management Office, [mo@ow2.org](mailto:mo@ow2.org)  
Catherine Nuel, Tel: +33 8 777 959 15  
Cedric Thomas, Tel: +33 611 430 431

# Appendix 2: Partner's Statements



- Beijing University of Aeronautics and Aerodynamics (BUAA) has expertise on IaaS & PaaS (virtualisation) and PaaS (composite services, modeling, monitoring, ...) to share in OSCi. BUAA's work related to OSCi is service oriented software development (BPIDE, ServiceXchange) and virtualization technologies (iVIC: vHaaS and vSaaS).

- BonitaSoft provides Business Process Management (BPM) by providing flexible, powerful Business Process Management Solutions for all types of organizations.

Bonita Open Solution sets a new standard for BPM. It combines three solutions in one: an innovative process design studio, a powerful BPM engine and a breakthrough end user interface. We definitely want to provide a web based modelling tool.

SaaS / PaaS: We want provide a full on-line solution in the cloud, to move Bonita Runtime to the cloud and so we need to support features like multi tenancy / data isolation.

# Bull



- Bull interested by PaaS based on open standards (vs. Google AppEngine and vendor lock-in) and will contribute with Jonas, Jasmine, Orchestra. Bull will participate to collaborative projects, R&D agenda and lobbying

- CohesiveFT is a cloud-oriented engineering organization which builds onboarding solutions to simplify and speed migration to cloud computing while avoiding vendor lock-in. Its offer goes from virtual server assembly through to cloud boot time server contextualization; all wrapped by a secure, user managed virtual network, where clients control addressing, protocol, topology, and security of their information as it moves in, between, and to the clouds. CohesiveFT is committed to evolution of open standards to include the needs of the enterprise. They contributed to RabbitMQ and were involved in the AMQP open standards process, their open source implementation being widely used.



- CVIC aims to build a close relationship between middleware and virtualization software, especially better than coupled loosely style e.g. just run middleware in a virtualization environment. CVIC are interested in elastic cloud based on middleware, in design some policies for smart administration including hardware, vm, applications and middleware.

# Engineering



- Engineering is interested in SpagoBI working in SaaS (OSGI compliant), next work is parallel processing. Engineering is also interest to address specific security aspects of virtualization e.g. compliancy with security certifications (ISO27001 and PCI), to evolve Engineering open source framework for federating Identities, Policies and Accounting elements in grids/cloud environment, to experiment open source cloud solutions (e.g. Eucalyptus and OpenNebula) in production environments (Collaborative Projects: VENUS-C, Passive, VISION-Cloud, ARISTOTELE)

# France Telecom Orange



- Based on an open architecture and APIs shared by open source communities, France Telecom Orange's would like to be able to integrate interoperable components into its infrastructure (IaaS), into its platforms (PaaS) and into its SaaS solutions, in order to enrich its customer solutions and to answer its internal IT requirements.
- France Telecom Orange's interests in OSCi include:
  - interoperability at the infrastructure level, between multiple providers
  - development of generic and extensible APIs between the PaaS and the IaaS layers
  - standards compatibility: ability to influence and adapt to the emerging Cloud standards (in particular, standards for identity and security, for portability at the infrastructure level (e.g. OVF and its extensions, vCloud, ...), for storage)
  - availability of open source alternative to commercial solutions
  - availability of PaaS middleware components for designing, configuring and deploying distributed applications onto the Cloud (in particular, R&D issues related to self sizing and self sharing)
  - availability of metering components to be used for SLA checking and billing, and associated framework in order to build complete management solutions for the cloud
  - open source solutions to Cloud storage (in particular, solutions for data availability in offline mode)
  - Cloud solutions for the mobile, personal and M2M environments (in particular device independence)
  - provide services in SaaS mode, including development services (e.g. testing as a service, BI, ...)

# Fraunhofer Fokus

- Fraunhofer Fokus is interested in usage of cloud in public sectors, in participation to funded collaborative projects on topics such as interoperability, definition of standards APIs, secured distributed data, security and digital identity

- Ingres is interested in participating in OSCi and has expertise in topics such as distributed data and security. Collaboration with Talend and JasperSoft on Talend on Cloud is a good starting point in OSCi. Ingres is very happy to be partner in the OSCi project, and I'll be glad, now being part of the Experts group to help implementing Ingres in every place a Relational Database is needed.

- INRIA has teams which will provide a lot of technologies to this initiative. Inria proposed to open GRID5000 <https://www.grid5000.fr> to OW2 OSCi. This proposal has been unanimously accepted. This represents a real plus for OSCi to have access to a real test bed in order to test and to prove OW2 cloudware is efficient.

- INRIA ADAM develops the FraSCAti middleware platform which implements the OASIS SCA standard for service-oriented and component-based applications. As such, FraSCAti provides a contribution for the SaaS layer. FraSCAti has been integrated as a service engine in the Petals ESB developed by Petals Link. We wish to pursue such a direction in order to reinforce the links between the SaaS and PaaS layers. FraSCAti is an OW2 project. ADAM participates to the ANR SocEDA project which is led by Petals Link. The project targets to develop an event-based architecture for the cloud. In the project, ADAM will more precisely be involved in the definition of the layer for distributed complex-event processing.

- Institute of Software – Chinese Academy of Science (ISCAS) interested in OSCi for Programming & Scheduling, Performance & Scaling, Security & Controlling, Administration and proposes OnceWorkManager, Bench4Q, DisCacheSRF, BundleProfiler, Capacity Planning Tools for Web Applications, Once Dataflow, Access Control Framework for multi-tenant applications in Cloud, Model Base SOA application deployment Framework



- JasperSoft develops open source business intelligence is the world's most widely used BI software enabling true multi-tenancy while providing a common platform for on-premise, virtualized, SaaS and Cloud deployments. Jaspersoft is a key element in the "Business Intelligence in the Cloud" solution together with Talend, RightScale, Vertica and based on Amazon EC2. Jaspersoft provides also a true multi-tenancy, capability critical for secure/optimized SaaS applications

- Konsultex is interested in virtualizing the desktop for private clouds. MOD will try to recruit some open source virtualized desktop to OW2 OSCi (this initiative is also open to SaaS)

- National University of Defense and Technology (NUDT) is interested in OSCi for the open cloud issues such as massive distribution, scalability, resource monitoring and scheduling, as well as the extension mechanisms from cloud to end user environments, etc. NUDT will propose OSCi with middleware in on-demand resource aggregation and autonomic collaboration in Internet-scale infrastructure, runtime monitoring and scheduling of distributed systems, and component-based pervasive computing. Currently, the project packages from NUDT include (but not limit to): (1) iVCE: Internet-based virtual computing environment (iVCE), the middleware and tools are innovative mechanisms for on-demand aggregation and autonomic collaboration in large scale distributed systems. (2) PanGu: PanGu is a pervasive computing middleware platform based on the extended software services and components.

# O-Engine



- Being a founding member of OW2, O-Engine believes open source and open standards are two most important cornerstones for future internet based services be adopted by the market. We are interested to apply OSCi to many research and industrial projects in China. For example, in one of the Chinese national key project, we are working together with China Telecom and BUAA to implement a cloud platform that provides services to more than one million SMEs in Southern China. In the meantime, we would like to contribute our experience and expertise in the cloud platform for domains like Smart Cities, eGovt, Mobile Internet Services, and next generation internet based learning. Hence we are interested to be an active partner of Domain 1, we would like to contribute in areas like User Scenarios, Technologies and Experimentation.

- Peking University (PKU) would like to contribute to OW2 OSCi from two aspects:
  1. InternetWare as a new paradigm that supports cloud computing.  
*More information about Internetware will be given later.*
  2. we propose a resource management method for the shared cluster, and we are going to extend JOnAS 5 with this method to support shared cluster.
- PKU would like to contribute domain 1 from two perspectives. On one hand, we are always working quite hard to contribute on JO2nAS and Jasmine, on the other hand we will look for opportunities to contribute models, architectures, application scenarios to OSCi with the resources and results we have on Internetware.

# Petals Link



- Petals Link is interested in Petals to be executed and integrated in cloud and in orchestration tools. Petals Link will contribute to R&D Agenda, to definition of standards (api, etc.), to promote use of OW2 OSCi components in use cases, to facilitate technology transfer and to collaborative projects set up

# ProActive



- ProActive Parallel Suite is co-developed by the OASIS Team and the ActiveEon company ProActive offers 3 complementary framework:

ProActive Programming: Java Parallel Toolkit,  
ProActive Scheduling: Multi-Platform Job Scheduler with Workflow,  
ProActive Resourcing: Desktop, Cluster, Grid & Cloud.

ProActive is designed to be open and flexible, so we are excited about the opportunity given by OSCi to collaborate and integrate with complementary OW2 software such as JOnAS, JASMINe, Talend ...

- Talend provides 3 offers dedicated for SaaS or Cloud topics called :  
Talend On Demand (not for OSCi),  
Talend Cloud with JasperSoft (an OW2 member leader in Business Intelligence area), RightScale [1],  
Vertica (a Columna based DBMS [2]) and based on Amazon EC2  
Talend Hadoop/Hive

[1] <http://www.rightscale.com/lp/bi-stack.php>

[2] <http://www.vertica.com/Cloud-and-Virtualization>

[3] <http://wiki.apache.org/hadoop/Hive/Tutorial>



- The Database Systems and Information Management (DIMA) group conducts research in the management and optimal processing of large-scale (semi-)structured data and huge collections of unstructured documents.
- Currently research "Information Management on the Cloud" through the "Stratosphere" Collaborative Research Unit. Stratosphere explores the power of massively parallel computing for complex information management applications. Building on the expertise of the participating researchers, we aim to develop a novel, database-inspired approach to analyze, aggregate, and query very large collections of either textual or (semi-)structured data on a virtualized, massively parallel cluster architecture. Open Source release of Stratosphere is planned in the first quarter of 2011.

- Télécom Saint-Etienne / Institut Telecom has expertise in adaptive systems and web intelligence for pervasive environments and is interested in intelligence at the interface in Paas and Saas.

- Universidad Complutense de Madrid (UCM) has expertise is mainly in IaaS Clouds and leads Open Nebula projects.

- Universidade de Fortaleza (UNIFOR) is interested in service management and self-adaptation, cloud interoperability and standardization and deployment tools for cloud applications.

- UShareSoft simplifies software delivery, automating the creation of software appliances (SA) and vApps, for physical, virtual or cloud environments. Uforge, a SaaS SA factory, automates the assembly, generation and deployment of production-ready SA using any OS and generate a SA (ISO, VMware ESXi, EC2, Xen, Virtual Box, OVF, KVM, EMI) for Amazon EC2, IBM Cloudburst, Eucalyptus and other cloud platforms. UForge's vApp technology configures a multi-tier solution. UShareSoft is already an OW2 partner and integrates some OW2 projects into UForge catalog. UShareSoft would be happy to work with the Initiative on interoperability, to propose a UForge account to Cloudware partners for free and to offer to a dedicated Cloudware collaboration workspace on UForge, . We are willing to build close relationship with the Initiative and work with its partners in order to help build specific software appliances dedicated to the Cloudware initiative e.g. the BI4Cloud Appliance.

- Universidade de São Paulo (USP) is interested in participating to OSCi on distributed systems and grid.



## How to join

- Mailing list: [cloud-initiative AT ow2.org](mailto:cloud-initiative@ow2.org)
- Web: <http://www.ow2.org/view/Cloud/>

