



# **PaaSage**

## **Model Based Cloud Platform Upperware**

### **Deliverable D9.4.1**

#### **Workshops prototype design**

Version: 0

# D9.4.1

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Project	
Grant Agreement number	317715
Project acronym:	PaaSage
Project title:	Model Based Cloud Platform Upperware
Funding Scheme:	Integrated Project
Date of latest version of Annex I against which the assessment will be made:	31/10/13
Document	
Period covered:	
Deliverable number:	D9.4.1
Deliverable title	Workshops prototype design
Contractual Date of Delivery:	31/03/2014 (M18)
Actual Date of Delivery:	
Editor (s):	Kostas Magoutis
Author (s):	Kostas Magoutis, Pierre Guisset
Reviewer (s):	Brian Matthews, Franky Vanraes
Participant(s):	All
Work package no.:	9
Work package title:	Training and Dissemination
Work package leader:	Pierre Guisset, ERCIM
Distribution:	
Version/Revision:	
Draft/Final:	
Total number of pages (including cover):	

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<sup>1</sup> Usually the contact person of the coordinator as specified in Art. 8.1. of the grant agreement

<sup>2</sup> The home page of the website should contain the generic European flag and the FP7 logo which are available in electronic format at the Europa website (logo of the European flag:

[http://europa.eu/abc/symbols/emblem/index\\_en.htm](http://europa.eu/abc/symbols/emblem/index_en.htm) ; logo of the 7th

FP: [http://ec.europa.eu/research/fp7/index\\_en.cfm?pg=logos](http://ec.europa.eu/research/fp7/index_en.cfm?pg=logos)). The area of activity of the project should also be mentioned.

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**PaaSage is a project funded in part by the European Union.**

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## 1 Executive summary

This deliverable describes the PaaSage design and implementation plan for scientific workshops, the experience gained so far from participating in past events, and plans of actions to take in organizing and participating in different types of scientific workshops. The implementation plan presents a list of target events to consider participating in during the course of the project.

## 2 Introduction

This document describes the PaaSage plan and design for scientific workshops, covering their objectives, implementation plan, and expected outcome. PaaSage will hold two types of workshops: Scientific-oriented workshops, and end-user, industry-focused workshops. The focus of this deliverable is scientific workshops. The target audience of scientific workshops is academic and industry researchers and graduate students. The goals of scientific workshops are

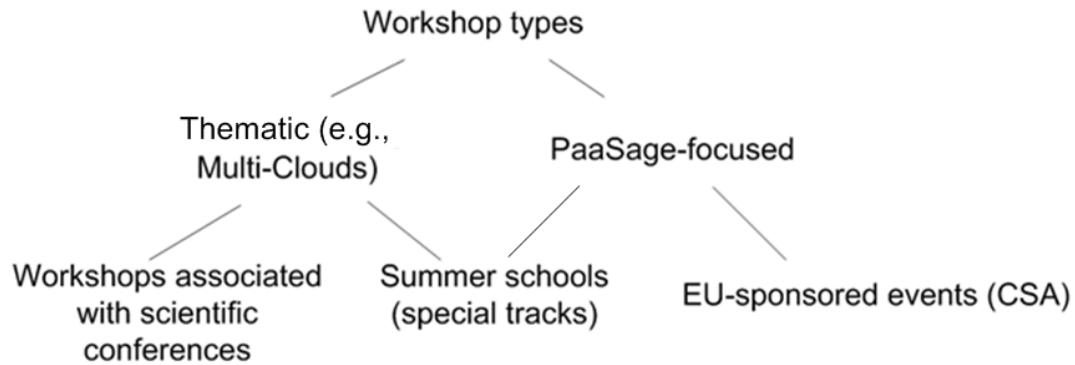
- To increase awareness within the target audience
- To build a community around PaaSage (see T8.2)
- To organise training activities (incl. Summer school) for the target audience in collaboration with other projects

An upcoming deliverable (D9.4.2) will focus on end-user, industry-focused workshops, targeting software developers, business analysts, and software and Cloud practitioners in general. The goals of end-user, industry-focused workshops are to initiate adoption, in support of exploitation planning.

## 3 Scientific workshops

Scientific workshops are targeted at the scientific community; typically a scientifically-trained audience of at least 15-20 participants. The goals of scientific workshops are: to build a community around PaaSage and to stimulate collaboration; promote the adoption of PaaSage technologies; and promote the open and free exchange of ideas. Scientific workshops will be organized in venues ranging from conferences, summer schools, and EU-sponsored events. They will typically last from between half a day and a full day.

We distinguish between two types of scientific workshops: those focusing solely or mostly on PaaSage (right branch of Figure 1); and those that focus on a core topic of PaaSage (e.g., model-driven software engineering, Multi-Clouds, etc.) but involving contributions from other projects as well (left branch of Figure 1).



**Figure 1 : PaaSage workshop types**

Workshops focusing solely or mostly on PaaSage can usually be organized in the context of EU-sponsored events that invite such participation, such as within (e.g., concertation) meetings organized by Coordination and Support Actions (CSAs) – examples of such CSAs are the currently running SUCRE (<http://www.sucproject.eu/>) and the research infrastructures CP-CSA EUDAT Collaborative Data Infrastructure (<http://www.eudat.eu/>).

Workshops targeting a core topic of PaaSage (e.g., model-driven Cloud software engineering, constrained optimization of Cloud performance, Multi-Clouds, etc.) but openly inviting contributions from the scientific community are usually organized either jointly with well-known conferences (for example the Multi-Clouds workshop organized in the context of the ACM ICPE conference in 2013 in Prague, Czech Republic and the Krakow Grid Workshop (CGW) held on an annual basis in Krakow, Poland) or in the context of acclaimed Summer Schools such as the Advanced Summer School in Service Oriented Computing (SummerSOC) organized annually in Hersonissos, Crete, Greece.

We examine the experience gained so far and outline the planning steps involved in as a guide to organizing upcoming workshops. In Section 4 we describe our implementation plan for scientific workshops.

### ***3.1 EU-sponsored events***

Large-scale EU-sponsored coordination and support actions usually organize scientific workshops in the context of their regular meetings, aiming to bring the communities they serve closer to cutting-edge developments in the field. Figure 2 provides an example of the scientific workshops accepted and organized at the sidelines of the 2<sup>nd</sup> Conference of the EUDAT coordination and support action in 2013. Such workshops are typically attended by between 10-30 scientifically trained participants; they involve hourly keynote-type lectures by 2-4 project experts highlighting key results and may include short demos, although the focus of the workshop is primarily on lectures.



**Figure 2: Organization of project-focused scientific workshops in context of CP-CSA**

In the context of PaaSage, a closely related CSA providing an opportunity for the organization of scientific workshops is SUCRE (Figure 3). Although collaboration between PaaSage and SUCRE has been successful and ongoing, SUCRE will be completing its mission in 2014 and therefore PaaSage should consider alternative venues in recent CSA projects within that space.



**Figure 3: Workshops are planned to be organized in the context of Coordination and Support Actions such as SUCRE**

Experience from past organizations of such workshops showed that the following are the key steps in organizing one:

1. Identify suitable EU-sponsored CSAs or other community-building projects in one of the key thematic areas of PaaSage
2. Submit workshop proposal (possibly in coordination with related projects). An internal call for participation (CFP) within PaaSage will solicit a team of 3-4 project experts that will participate as lecturers in the particular event.
3. Create half-day or full-day programme of hourly keynote-type lectures providing good coverage of project areas and highlighting key results. Topics covered in a PaaSage-focused workshop will be drawn from the project's core contributions in the general area of model-driven Cloud software engineering.
4. Programme may include short demos
5. Audience participation (beyond questions during or after talks) can be encouraged via the organization of panels where possible.

### **3.2 Scientific conferences**

Scientific conferences provide suitable venues for organizing thematic workshops that invite participation by the broad scientific community. One such recent example co-organized by PaaSage was the 1st International workshop on multi-cloud applications and federated clouds, organized 22 April 2013 in Prague, Czech Republic. The workshop took place in conjunction with 4th ACM/SPEC International Conference on Performance Engineering and was jointly organized by the FP7-ICT projects MODAClouds, PaaSage and ARTIST.

Figure 4 depicts the final programme of the workshop including contributions by PaaSage partner teams. Experience from this workshop showed that the following key steps must be taken to ensure the successful organization of a scientific workshop:

1. Identify suitable conferences in one of the key thematic areas of PaaSage
2. Submit workshop proposal (possibly in coordination with related projects)
3. Assemble organizing committee and programme committee, including senior project partners
4. Notify all project partners well in advance so that they have ample time to prepare and submit quality papers
5. Along with a top-notch workshop programme, organize
  - a. Keynote talk(s)
  - b. Panel(s) so that participants have the chance to participate in exchange of ideas



The goal of this workshop is to bring together researchers and practitioners who investigate concepts, models and tools for running applications on multiple and heterogeneous Cloud systems.

### Program

#### Session 1. 10:00-11:15. Multi-Cloud Background and General Issues. Chair: Prof. Elisabetta Di Nitto

- Welcome from the chairs
- Dana Petcu. Multi-Cloud: *Expectations and Current Approaches*
- Keith Jeffery, Geir Horn and Lutz Schubert. *A vision for better Cloud applications*

#### Session 2. 11:40-12:40. Development of Multi-Cloud Applications. Chair: Dr. Arnor Solberg

- George Baryannis, Panagiotis Garefalakis, Kyriakos Kritikos, Kostas Magoutis, Antonis Papaioannou, Dimitris Plexousakis and Chrysostomos Zeginis. *Lifecycle Management of Service-based Applications on Multi-Clouds: A Research Roadmap*
- Davide Franceschelli, Danilo Ardagna, Michele Ciavotta and Elisabetta Di Nitto. *SPACE4CLOUD: A tool for System Performance and Cost Evaluation of CLOUD systems*

#### Session 3. 14:00-16:00. Monitoring and Execution Support. Chair: Dr. Clara M Pezuela Robles

- Piotr Bar, Rudy Benfredj, Jonathon Marks, Deyan Ulevinov, Bartosz Wozniak, Giuliano Casale, William J. Knottenbelt. *Towards a Monitoring Feedback Loop for Cloud Applications*
- Claudia Canali and Riccardo Lancellotti. *Automatic Virtual Machine Clustering based on Bhattacharyya Distance for Multi-Cloud Systems*
- Fawaz Paraso, Philippe Merle and Lionel Seinturier. *Managing Elasticity Across Multiple Cloud Providers*
- Foued Jrad, Jie Tao and Achim Streit. *A Broker-based Framework for Multi-Cloud Workflows*

#### Session 4. 16:30-18:30. Cloud Migration and Panel Discussion. Chair: Dr. Claudia Canali

- Alexander Gunka, Stepan Seycek and Harald Kuehn. *Moving an application to the cloud – an evolutionary approach*
- Clément Quinton, Nicolas Haderer, Romain Rouvoy and Laurence Duchien. *Towards Multi-Cloud Configurations Using Feature Models and Ontologies*
- **Panel: Moderator: Dr. Clara M Pezuela Robles.** Panelist: Dr. Keith Jeffery, Prof. Paola Inverardi, Prof. Dana Petcu, Dr. Miguel Vidal.
- Conclusions

**Figure 4: MultiClouds workshop featuring PaaSage participation (PaaSage partner participants highlighted in solid rectangles)**

Another example is the Krakow Grid Workshop which is held on an annual basis in Krakow, Poland. The last two workshops (CGW'12 and CGW'13) included PaaSage-focused keynote presentation by Stefan Wesner (in 2012) and Pierre Guisset (in 2013).

### 3.3 Summer schools

Summer schools provide another excellent opportunity to organize PaaSage-related scientific workshops. PaaSage recently participated at the 7th Advanced School on Service Oriented Computing (SummerSOC'13) in Heraklion, Crete, Greece (1-6 July, 2013). PaaSage's contribution at this event was focused on expert tutorials on the subjects of software product line engineering on hybrid cloud infrastructures and on the specification and use of CloudML.

Figure 5 depicts the part of the SummerSOC'13 program that includes PaaSage-related talks as well as the PaaSage-organized collaboration session featuring the participation of the MODAClouds and ARTIST projects.

<b>Afternoon Session, Session Chair: Kostas Magoutis</b>	
Tutorial (Emerging Topics): " <a href="#">Product line engineering and architecture that optimally exploit hybrid cloud infrastructures</a> ", Dirk Muthig, Lufthansa Systems	
Coffee Break	
Industry talk (Cloud): " <a href="#">Big Data Stream Processing</a> ", Harald Schoening, Software AG	
Industry talk (Emerging Topics): " <a href="#">Crowd-sensing: an Internet of Things Approach</a> " [ppt], Iacopo Carreras, Founder and CEO, U-Hopper S.r.l.	
Free activities	
Dinner at traditional Cretan Tavern	
<b>Thursday, July 4</b>	
... <b>Morning Session -- Session Chair: Vasilis Andrikopoulos</b> ...	
Industry talk (Emerging Topics): "Smart Communities and Health: Real-Time Sensing and Services", J. Sairamesh (Ramesh), 360Fresh Inc.	
Tutorial (Emerging Topics): " <a href="#">u-map: a user-centric QoE-based recommendation system for mobile devices, or who is afraid of the active network users?</a> ", Maria Papadopoulou, U. of Crete	
Coffee Break	
Tutorial (Formal Methods for SOC): "Temporal Logic and Model Checking" [ppt], Wolfgang Reisig, Humboldt U. Berlin	
Lunch	
<b>Afternoon Session, Session Chair: Kostas Magoutis</b>	
Tutorial (Cloud): " <a href="#">Towards model-driven provisioning, deployment, monitoring, and adaptation of multi-cloud systems</a> " [ppt], Alessandro Rossini, SINTEF	
Tutorial (Cloud): " <a href="#">QoS guarantees in cloud environments</a> " [ppt], Danilo Ardagna, Polytechnico di Milano	
Coffee Break	
Industry talk (Cloud): "The ARTIST project" [ppt], Ilias Spais, ATC	
Industry talk (Cloud): " <a href="#">BonFIRE: Building service testbeds for Future Internet Research and Experimentation</a> " [ppt], Bastian Koller, Michael Gienger, SANE-HPPC	
Free activities	

**Figure 5: Special collaboration session organized in the context of SummerSOC'13 (PaaSage related participants and sessions highlighted in solid rectangles)**

This session was attended by about 60 participants of the Summer School including about 25 graduate students participating in the Erasmus Mundus International Master in Service Engineering (IMSE) and about 35 experts (academics and industry researchers) in the area of Cloud and services computing. Organization of this session provided us with significant insight into the planning of a PaaSage-focused scientific workshop at future editions of the Advanced School on Service Oriented Computing as well as other similarly structured summer schools. In particular, the key steps are:

1. Identify suitable summer schools in one of the key thematic areas of PaaSage
2. Engage organizing committee early on in approving a special session or parallel track focusing on one of the key thematic areas of PaaSage
3. Send a call for participation (CFP) within PaaSage planning for 3-4 lectures lasting 30-45' each (include other projects in case of thematic workshops)
4. Since students are a key part of the audience, sessions with demos or hands-on use of training material between lectures are recommended
5. Organize a panel so that participants have the chance to participate in exchange of ideas

## 4 Implementation Plan

In PaaSage we have had an early start in organizing scientific workshops, such as the Multi-Clouds workshop organized in the context of the ACM ICPE conference in 2013 in Prague, Czech Republic, the Krakow Grid Workshops (CGW) organized with the active participation of PaaSage partners in 2012 and 2013 in Krakow, Poland, and in the context of the Advanced Summer School in Service Oriented Computing (SummerSOC) in 2013 and 2014. We plan to continue along these lines, planning for additional workshops at the following venues:

<b>In conjunction with:</b>	<b>Target population:</b>	<b>Objective:</b>	<b>Date</b>
CGW'12 in Krakow, Poland	Scientific community	Create awareness and disseminate results	October 2012
MultiClouds'13 in Prague, Czech Republic	Scientific community	Create awareness and disseminate results	May 2013
CGW'13 in Krakow, Poland	Scientific community	Create awareness and disseminate results	October 2013
SummerSOC'13 in Heraklion, Crete	Scientific community and young researchers	Training and community building	July 2013
SummerSOC'14 in Heraklion, Crete	Scientific community and young researchers	Training and community building	July 2014
SummerSOC'15 in Heraklion, Crete	Scientific community and young	Training and community building	2015

	researchers		
EC Unit E2 Software and Services, Cloud Concertation Meeting	Academic and industrial research community	Create awareness, encourage adoption and disseminate results	2015
CGW'15 in Krakow, Poland	Scientific community	Create awareness and disseminate results	2015
SummerSOC'16 in Heraklion, Crete	Scientific community and young researchers	Training and community building	2016
Coordination and support actions (to be investigated)	Academic and industrial research community	Create awareness, encourage adoption and disseminate results	TBA

In each case, the practical organisation will be under the control of an Organisation Committee (OC) constituted by senior PaaSage partners (along with personalities from collaborating projects if needed) and from the scientific community, and supported by the local/regional PaaSage partner in each case. The local/regional PaaSage partner will have the responsibility of planning each event in advance, including triggering the composition of the OC and the interaction with it. This plan may be reviewed dependent on specific opportunities with other research initiatives, projects and events.

## 5 Expected Outcome

We expect to co-organise and participate in 6-9 thematic scientific workshops in the areas of Cloud computing, Multi-Clouds, model-driven software engineering, and related areas during the course of the project. PaaSage has participated in four such events so far (2012-2013), receiving valuable feedback and experience in organizing future events. During the fourth year of the project we plan to organize a PaaSage-focused workshop (Section 3.1) in the context of an EU-sponsored event.