



Multi-Site Security for Clouds

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The Cloud Marketplace



Lots of products
.... not much
integration

Multi-Site Clouds



Empowerment of
the user select
cloud provider
based on cost,
service quality etc

Security

Security worries hindering UK cloud adoption

UK businesses more worried about data security, privacy and control than a year ago, survey finds

By Phil Tottman

15 Jun 2015

More from this author

1 Comment



Rising levels of concern over security, privacy and lack of control are hampering cloud adoption in the UK, according to industry body the Cloud Industry Forum (CIF).

Some 70 per cent of those polled by CIF cited data security as among

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Gartner: Global

LastPass hack: online storage vault tells users to change master passwords

Web service that promises secure central storage for passwords says people's main accounts may have been compromised



New EU Data Protection Regulation will drive internet businesses 'out of Europe'

By Graeme Burton

15 Jun 2015

0 Comments

Follow @graemeburton



An organisation representing digital and online businesses in the European Union has warned that the EU's Data Protection Regulation could drive internet businesses out of Europe.

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Real use cases: Why 50% of enterprises are choosing hybrid cloud

313 shares

24

157

123

9

Share

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By Logicworks

25 June 2015, 18:06 p.m.
comment

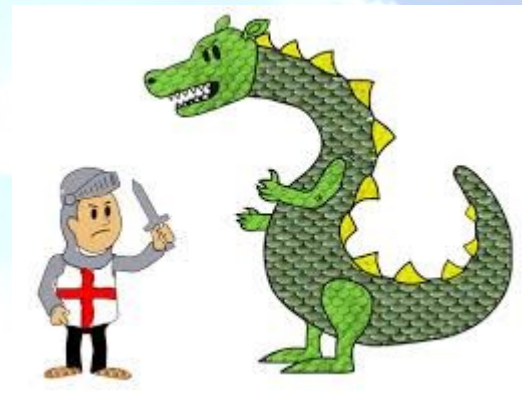
Categories

Disaster Recovery, Enterprise,
Hybrid, Infrastructure

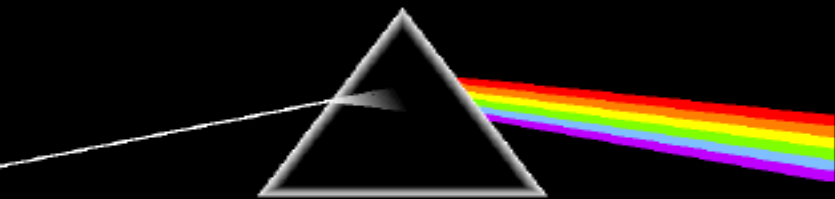


Technical Challenges

- Trust >>> Transparency
- Privacy >>> User Centric
- Portability >>> Migration between providers
- Brokerage >>> Comparison of solutions



Context: PaaSage Project



**Define your application once,
deploy it at the full spectrum
of the Clouds**



PaaSage Objective

To deliver

*an open and integrated **platform** to support both design and deployment of Cloud applications,*

*together with an accompanying **methodology** that allows model-based development, configuration, optimisation, and deployment of existing and new applications*

***independently** of the existing underlying Cloud infrastructures.*

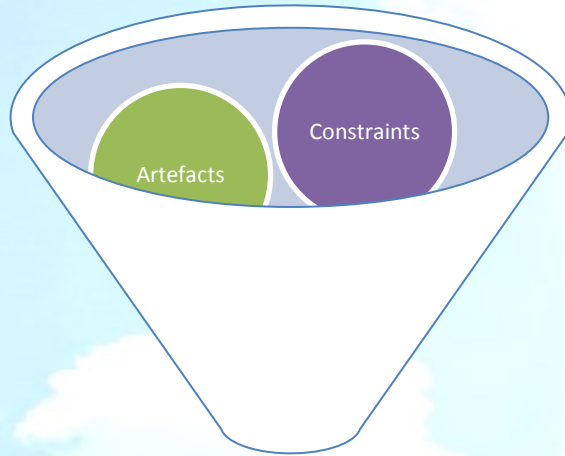


PaaSage is for...

- Software Application **Developers**
 - Facilitating the application migration to Clouds
 - Developing once and deploying on many Clouds
- Cloud **Providers**
 - Easing the move to their infrastructure and technology
- Cloud Solution **End-Users**
 - Reducing vendor lock-in
 - Accessing more performant solutions



Considering Cloud Deployment ...



**Deployment
Decision**

Artefacts

- Code and Binaries

Constraints

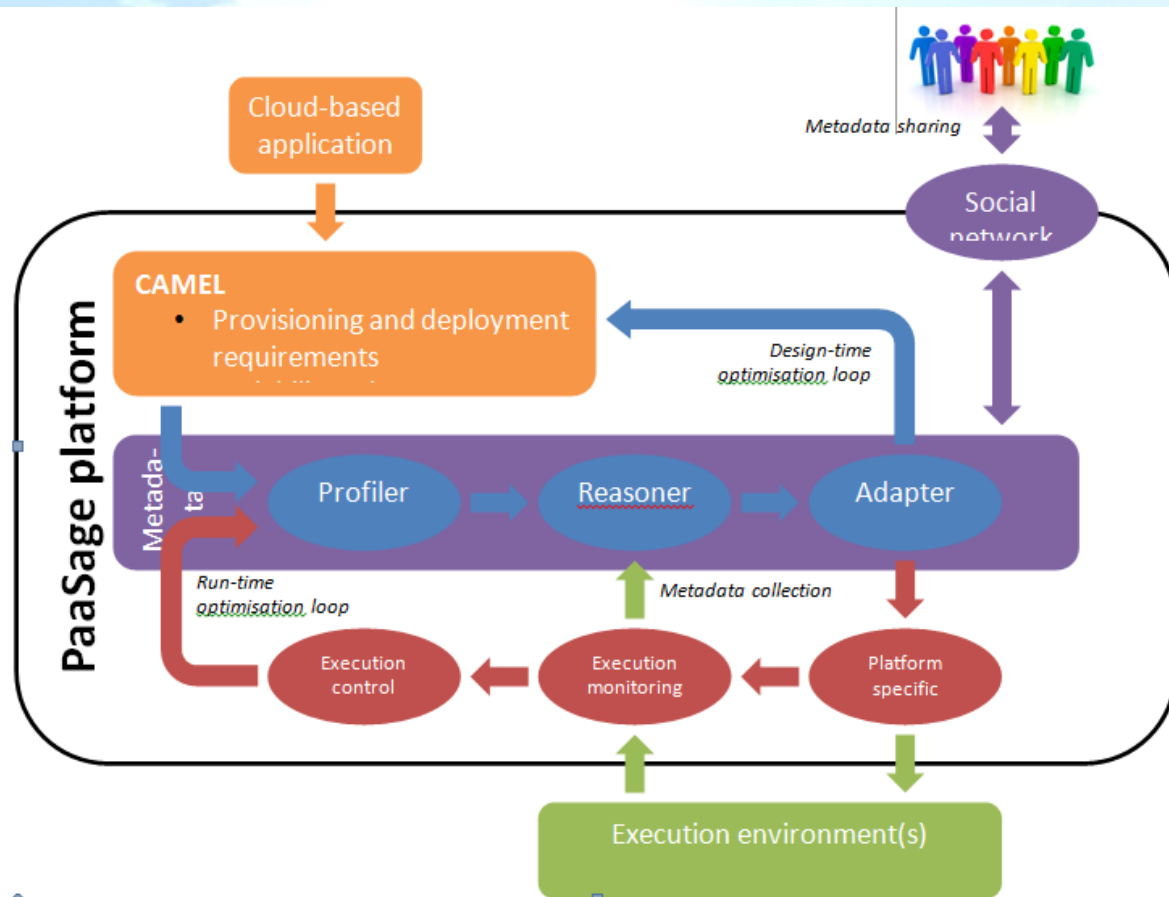
- $2 \leq \text{\#cores} \leq 8$
- Response time < 300ms

Policies

- Only in the EU

CAMEL

- Language for Modelling of Cloud Lifecycle
 - Consists of existing standards i.e. CloudML
 - Ability to add more standards
 - Expresses state of lifecycle as model
 - Plan, Deploy, Execution



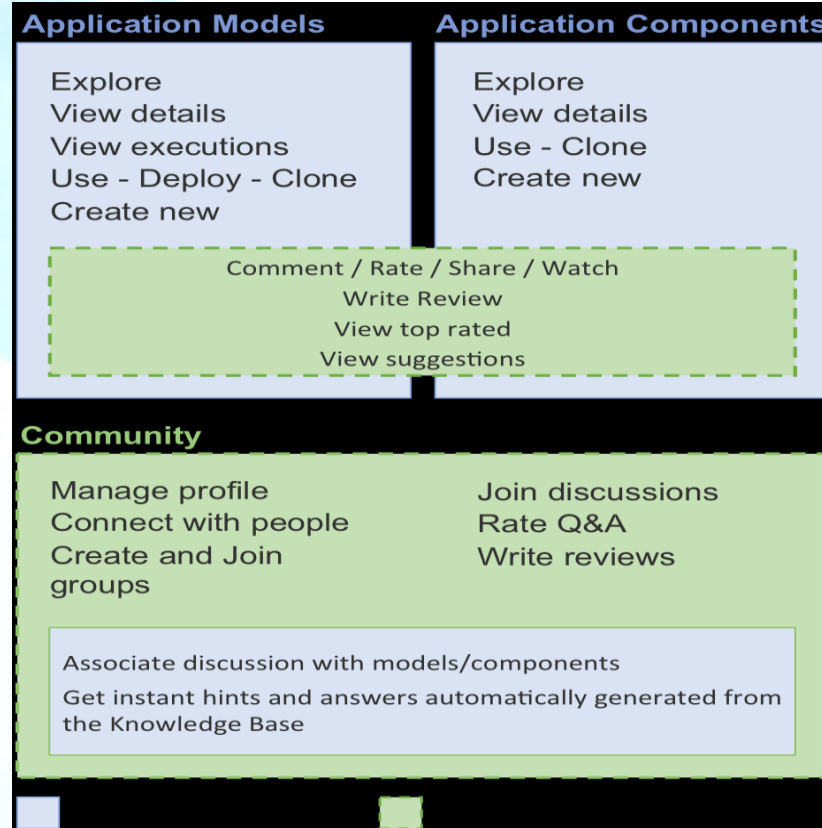
Security Challenges: Metrics

- How do we get common metrics from providers?
 - Cloud Security Alliance
 - EU Service Agreements Guidelines

Availability
Level of uptime (Often termed "availability")
Percentage of successful requests
Percentage of timely service provisioning requests
Average Response Time
Maximum Response Time
User authentication and identity assurance level
Authentication
Third party authentication support
User authentication and identity assurance level
Logging parameters
Log access availability
Logs retention period
Certifications applicable



Sharing Data: PaaSage Social Network



Models

RECOMMENDED FOR YOU (12)

Areas of Interest

- ☒ All
- ☐ Databases
- ☐ MongoDB
- ☐ Benchmarking
- ☐ OLTP
- [View all](#)



SPECJModel Everything

CloudML, Puppet

by John Doe Smith

Benchmarking, OLTP, Statistics, Performance
SPECJEnterprise2010, Apache, MySQL, component 1, test component 2

400 uses

115 runs

1.5K watches

...



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FEATURED

[View all \(17\)](#)

SPECJModel with MongoDB

CloudML, Puppet

by John Doe Smith

Communication and Information, OLTP

SPECJEnterprise2010, Apache, MySQL, component 1, test component 2

400 uses

115 runs

1.5K watches

...



kartograph

Puppet

by John Doe Smith

Communication and Information, Statistics

RaphaeUS, component1, Map Component 2, component 3

280 uses

80 runs

135 watches

...



Kozea

CloudML

by Ahti Virtanen

Communication and Information

Graph Plotting Z, MySQL, test component 1

261 uses

198 runs

659 watches

...



Samizdatco

CloudML

by Maria Bianchi

Communication and Information, Benchmarking

Apache, MySQL, component 1, test component 2

187 uses

123 runs

1K watches

...



Trifacta

CloudML

by Gerhard Gruver

Communication and Information, E-Commerce

Apache, MySQL, component 1, test component 2

480 uses

230 runs

876 watches

...



Leaflet

CloudML, CHEF

by Steve Peeters

Communication and Information, Productivity ...

Map Component X, Mongo DB, Apache, test component 1, test component 2

400 uses

115 runs

1.5K watches

...



MatPlotLib

CloudML

by Kristian Jakob

Communication and Information, Performance

Statistics Z, Plotting component Z, Graph Visualiser 2, other component

87 uses

76 runs

328 watches

...



OKFN

CloudML, Puppet

by Alice Smithers

Communication and Information

E-mail X, Chat X, Ajax

200 uses

99 runs

987 watches

...



DC

CloudML, Puppet

by Tom Dubois

Communication and Information, Statistics

Statistics component 3, Visualization K, E-mail X, component 3

800 uses

200 runs

541 watches

...



SPECJModel Everything

CloudML, Puppet

by John Doe Smith

Benchmarking, OLTP, Statistics, Performance

4.5

99.9%

20 ms



Turbulenz

CloudML

by John Papadakis

Communication and Information, Benchmarking

4.1



Spring

CloudML, Puppet, CHEF

by Donny Schmit

Communication and Information

2.6

CATEGORIES

Any Category

[Communication and information](#)[Productivity and creativity](#)[Entertainment and education](#)[Personal management](#)[Simulation software](#)[Signal analysis software](#)[Idle-time data analysis](#)[Authentication tools](#)[E-Commerce](#)[E-Government](#)[E-finance](#)[Statistical / risk analysis](#)[Data warehousing](#)

RECENTLY USED MODELS

[View All](#)

SpecJModel

SpecJModelCustom

SocialModel

LufthansaModel

SpecJEnterprise



by

n



SPECjEnterprise 2010 v2.3

Benchmarking, OLTP, Statistics, Performance

The SPECjEnterprise2010 benchmark is a full system benchmark which allows performance measurement and characterization of Java EE 5.0 servers and supporting infrastructure such as JVM, Database, CPU, disk and servers.

The workload consists of an end to end web based order processing domain, an RMI and Web Services driven manufacturing domain and a supply chain model utilizing document based Web Services. The application is a collection of Java classes, Java Servlets, Java Server Pages , Enterprise Java Beans, Java Persistence Entities (pojo's) and Message Driven Beans.

Uptime: 99.9%
 Response time: 20 ms
 Throughput: 1.9 GB/s

4.2 /5
Rating from 700 reviews

Excellent application. I deployed it on the Amazon cloud. It has been running for one month with excellent results. I recommend it to anyone looking for ...

Mary, P. 10 January 2013

v2.3
11/04/2014

2.5K RUNS
\$15 CONFIGS

400 USES

1,200 WATCHES

2,000 SHARES

CONTRIBUTORS (12)
View All

Alice Smith
Project Manager

45 mutual

5 Models 0 Components

TAGS
View All

Beans + Benchmarking

Persistence Entities Java

Persistence Entities

Add another tag

RUNS
COMPONENTS
DISCUSSIONS
REVIEWS
SIMILAR MODELS

FILTERS

Dates: 01/05/2014 - 02/05/2014

Cost: € to € € / hr

Transaction: Any

Uptime greater than: %

Response Time less than: ms milliseconds

Throughput greater than: bps b/sec

Geography: ☒ All
☐ North America
☐ South America
☐ Europe
☐ Asia
☐ Africa
☐ Australia

Clouds: ☒ All
☐ Amazon
☐ Google
☐ Rackspace
☐ Flexiant
☐ MS Azure
View all Clouds

By: ☒ All Users
☐ Me
☐ My Network

APPLY

Showing 15 of 40 Runs

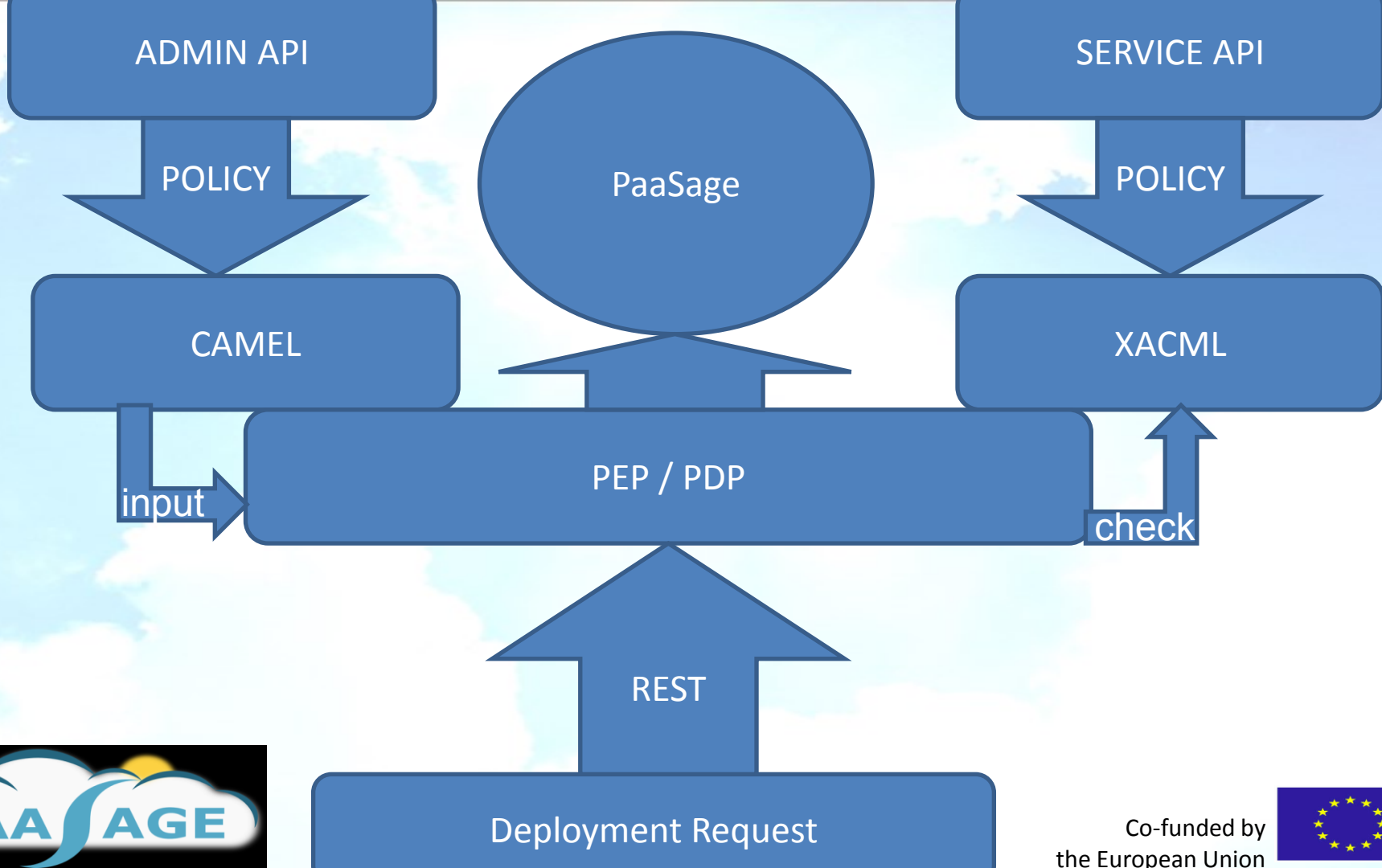
39%
61%
Providers

PROVIDERS
GEOGRAPHY

#	Date	Duration	Uptime	Response Time	Throughput	Cost	Cloud Providers	Geography	Status
1.	dd/mm/yyyy	x days	90%	x ms	x Gb/sec	1.234 \$	Amazon, Google	N. America, S. America	active
2.	dd/mm/yyyy	x days	90%	x ms	x b/sec	99.000 €	Amazon	Asia	active
3.	dd/mm/yyyy	x weeks	99%	x ms	x Gb/sec	1.234 \$	Google	Asia	
4.	dd/mm/yyyy	y months	87%	x ms	x Gb/sec	1.234 \$	Google	Asia	
5.	dd/mm/yyyy	x days	87%	x ms	x b/sec	99.000 €	Amazon	N. America, S. America, Europe, Asia	
6.	dd/mm/yyyy	x hours	32%	x ms	x Gb/sec	1.234 \$	Amazon, Google	N. America, S. America, Asia	

Security Challenge: Enforcement

- Security has to be built into deployments
 - Managed in a way to support multi clouds
- Models developed to express security
 - Models used to defined policy
 - Policy Enforcement linked to specific providers.



Multi-Site Security

- Security layer manages the Cloud lifecycle
- Policies taken from CAMEL (organisation) and direct input
- Policy Enforcement at each PaaSage lifecycle phase
 - Plan, Deploy, Execute



Use Case

- SME looking to deploy ERP to customers on Cloud
- Each customer has different and specific security concerns
- PaaSage provides means to cater for the wide range of concerns.



Steps to Adoption

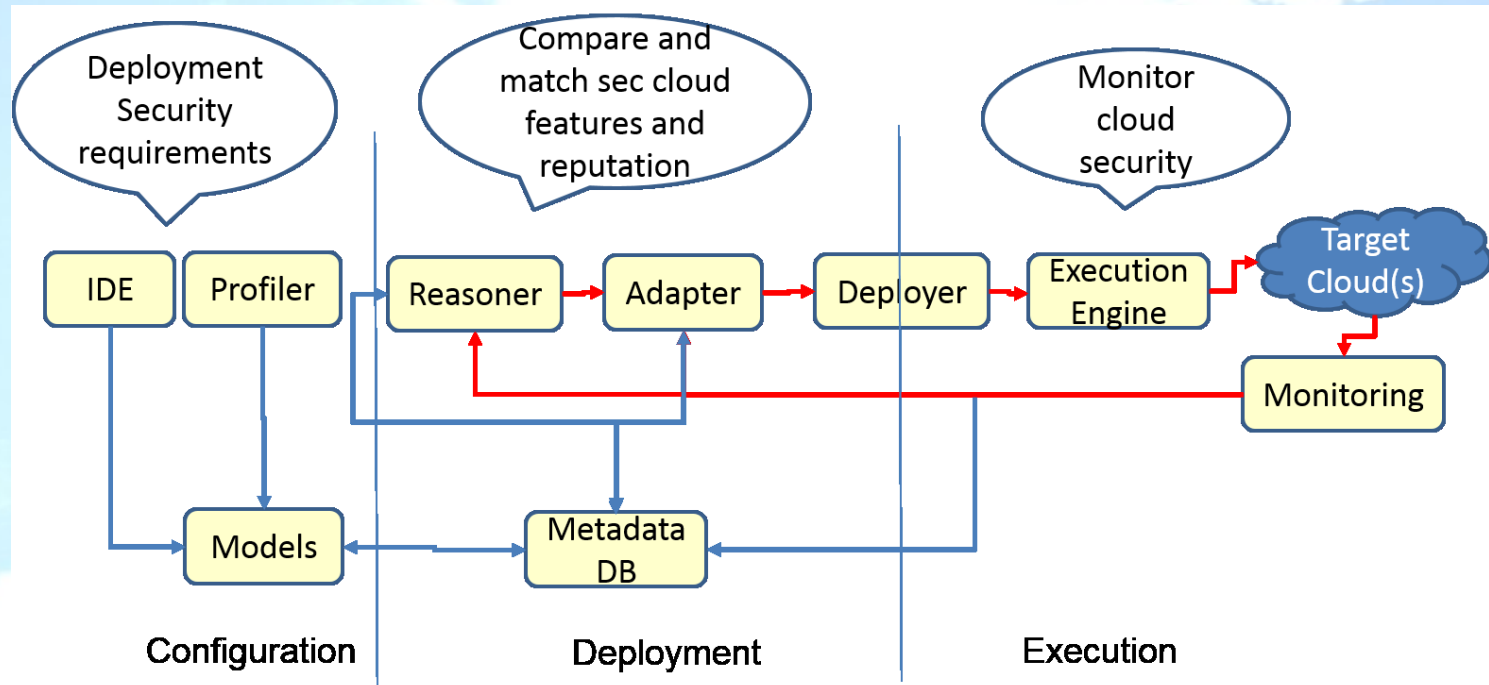
Integration with system requirements

- Identity > Role > Action > Policy

Capture of deployment requirements.

- SLO > Constraints > CAMEL

Application



Back to CAMEL

Requirement	Profiling	Deployment	Execution
Availability	➤ 99%	Providers ABC	99.2%
Level of uptime (Often termed "availability")	➤ 99%	Providers ABEG	99.3%
Percentage of successful requests	➤ 99%	Providers ABCEG	99.8%
Percentage of timely service provisioning requests	➤ 99%	Providers ACG	99.0%
Average Response Time	0.1ms	Providers ABCF	0.04ms
Maximum Response Time	0.3ms	Providers ABG	0.15ms

Summary

- PaaSage is released as open source at OW2
- PaaSage looks to simplify Cloud adoption
- Encouraging standards based technology
- Promoting transparency through the Social Network.



Thanks for listening

<http://www.paasage.eu>

<http://socialnetwork.paasage.eu>

Invitation to join and contribute

... and to fill out the survey

<http://socialnetwork.paasage.eu/Usability.docx>

