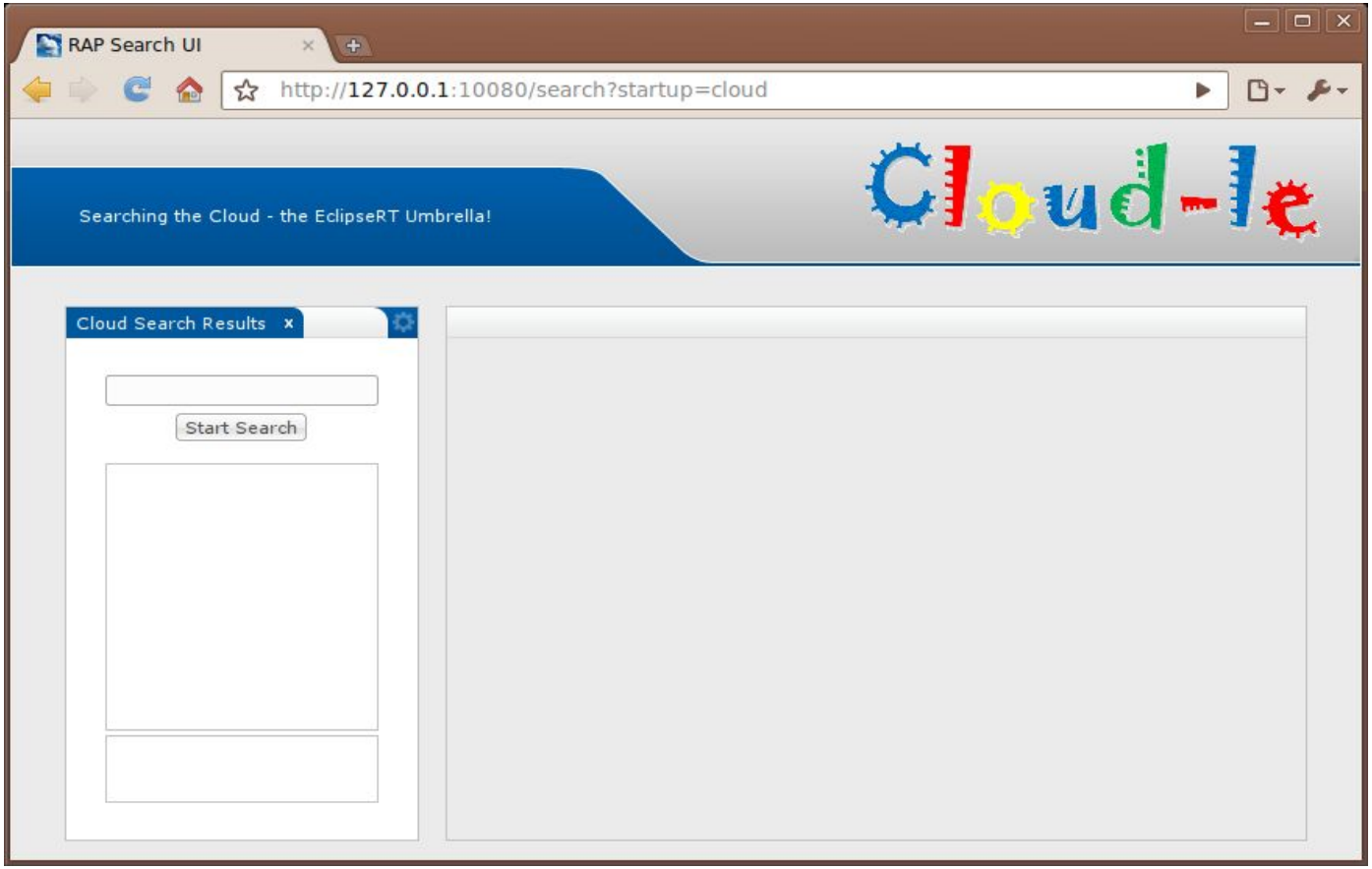
Searching the Cloud
The eclipseRT Umbrella!
Markus Knauer
EclipseSource

The Goal: Cloudle



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Individual Cloud Experience?!

- Google mail accounts
  - Do you use it for your mails
- Amazon Simple Storage Service
  - Did you know that you downloaded Eclipse Helios from S3 / CloudFront?
- Amazon Elastic Cloud Computing
- Salesforce.com (CRM)
- Microsoft Windows Azure
- Google AppEngine

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Cloud Definition

Many definitions exist!

NIST definition

“Cloud computing is a model for enabling available, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.”

(National Institute of Standards and Technology).

Essential characteristics

- On-demand self service
- Ubiquitous network access
- Location independent resource pooling
- Rapid elasticity
- Measured services

Delivery Models

- IaaS
- PaaS
- SaaS

Deployment models

- Private
- Community
- Public
- Hybrid

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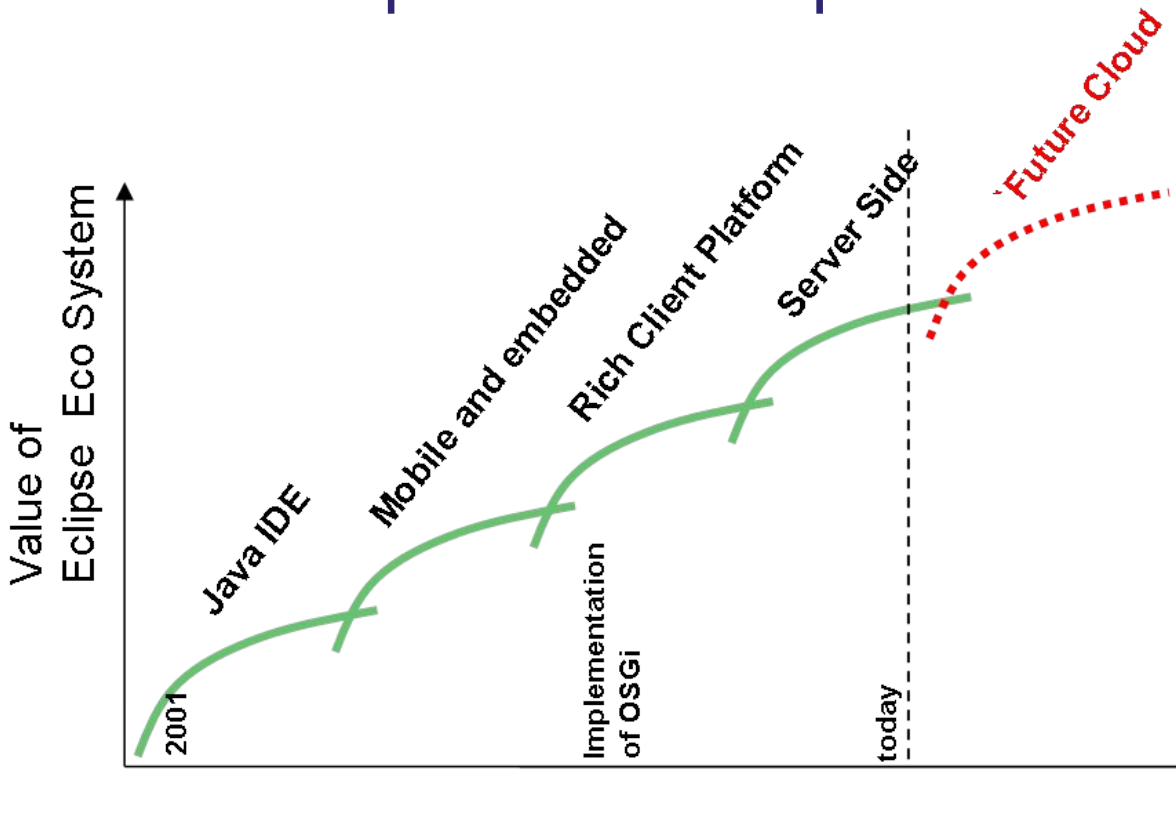
Platform Development in Eclipse



Embedded → Mobile → Desktop → Server → Cloud (?)

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The Eclipse Technology Stack

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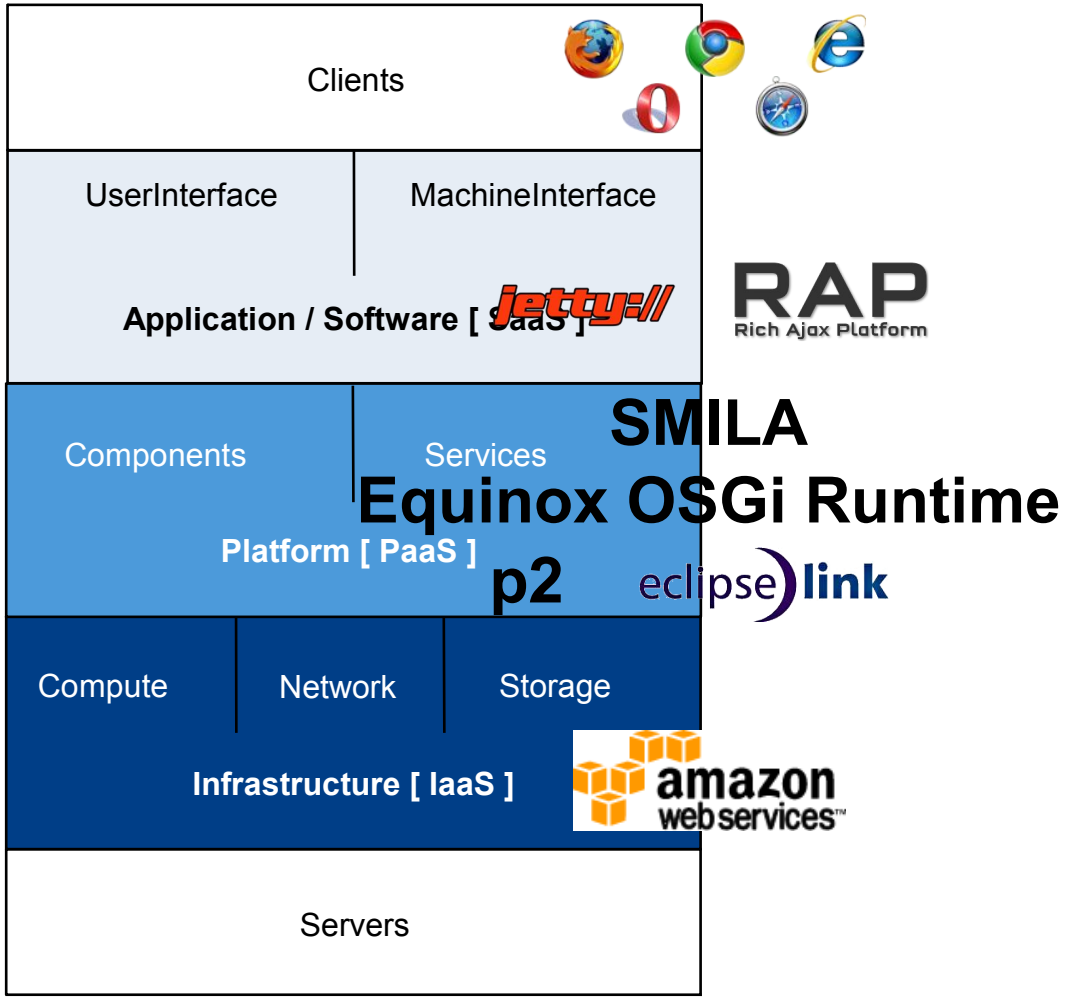
The Cloud from 10000 ft



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g-Eclipse

Eclipse Technology Project since 2006

Intuitive and easy access for

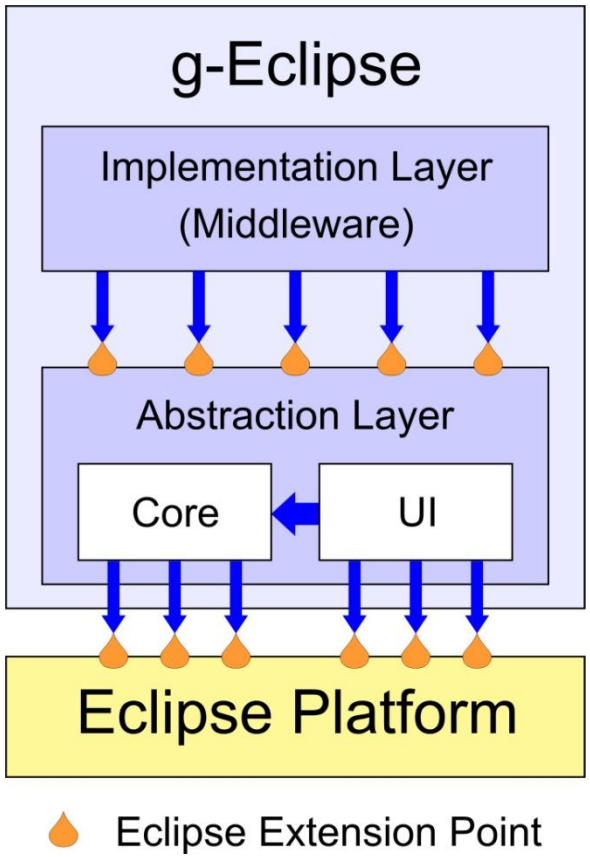
- Grid users,
- Grid resource providers
- Grid application developers

Extensible framework including a Grid model for seamless integration of Grid/Cloud resources

Supports different Cloud/Grid middleware

- gLite, GRIA (middleware from EC projects)
- Amazon Web Service (AWS)

Can run in headless mode as API



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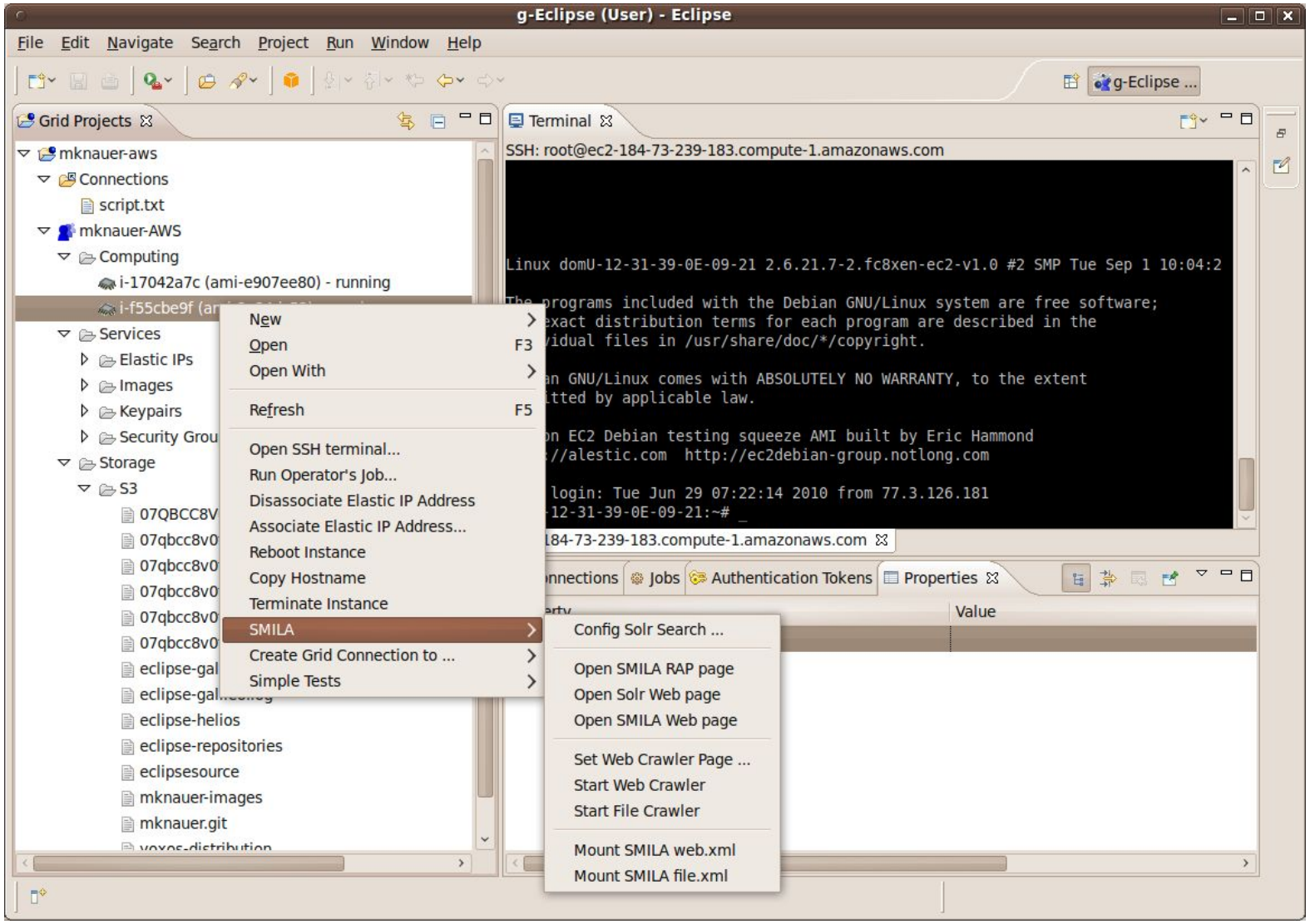

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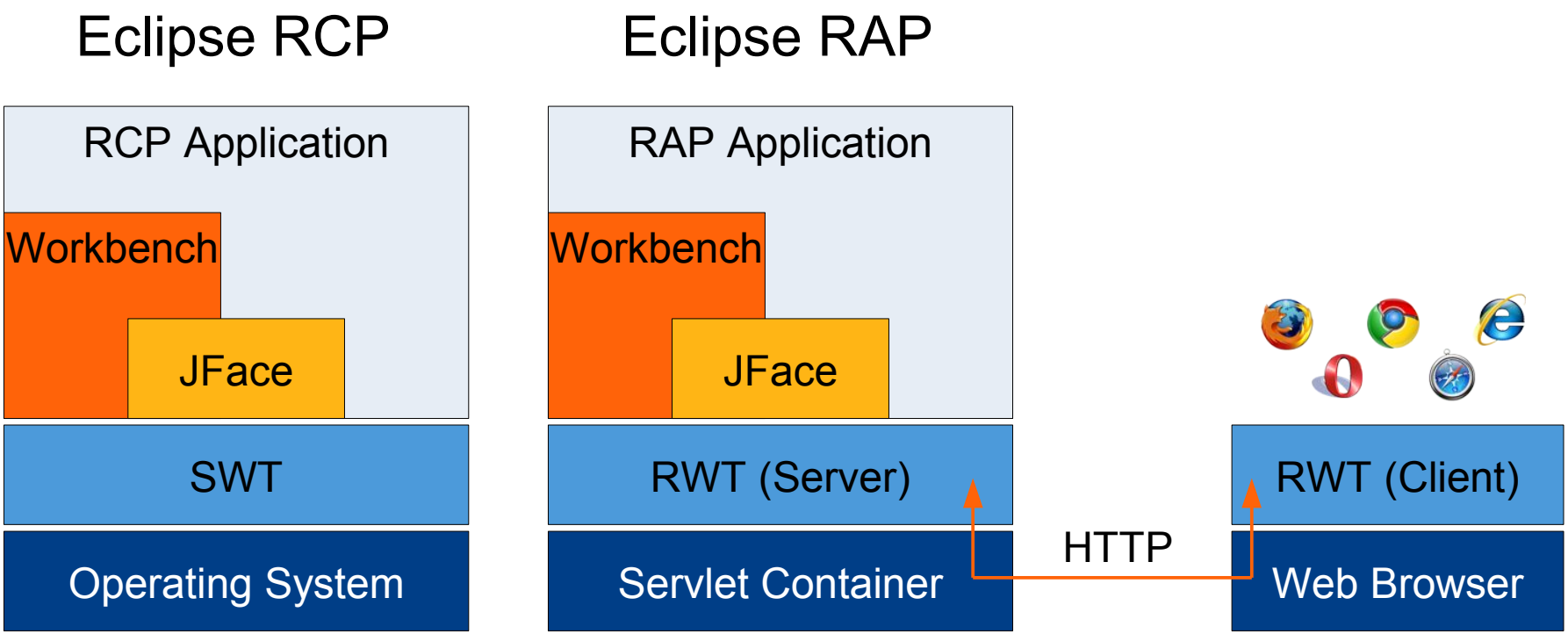
RAP – Rich Ajax Platform



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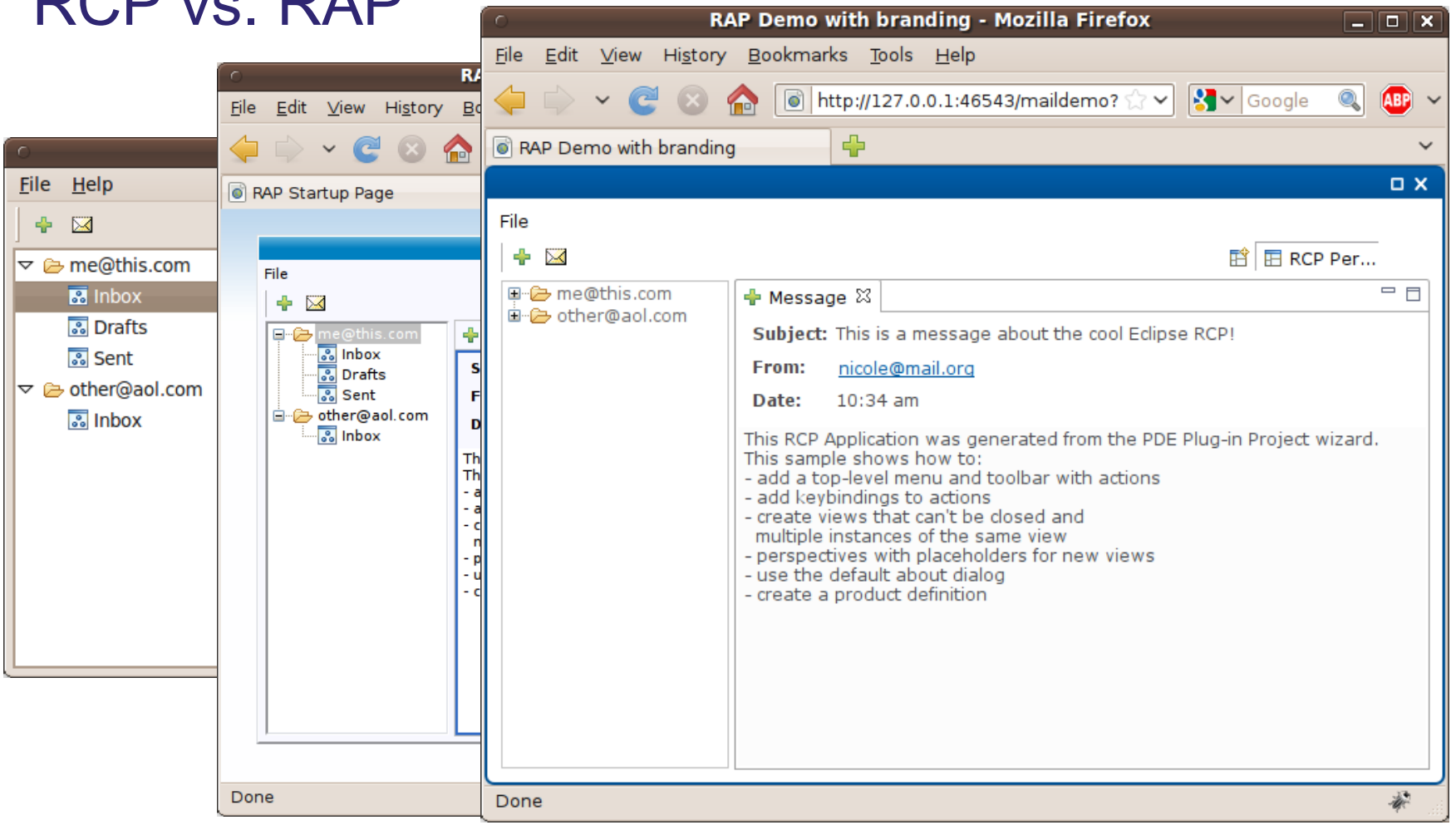
RCP vs. RAP



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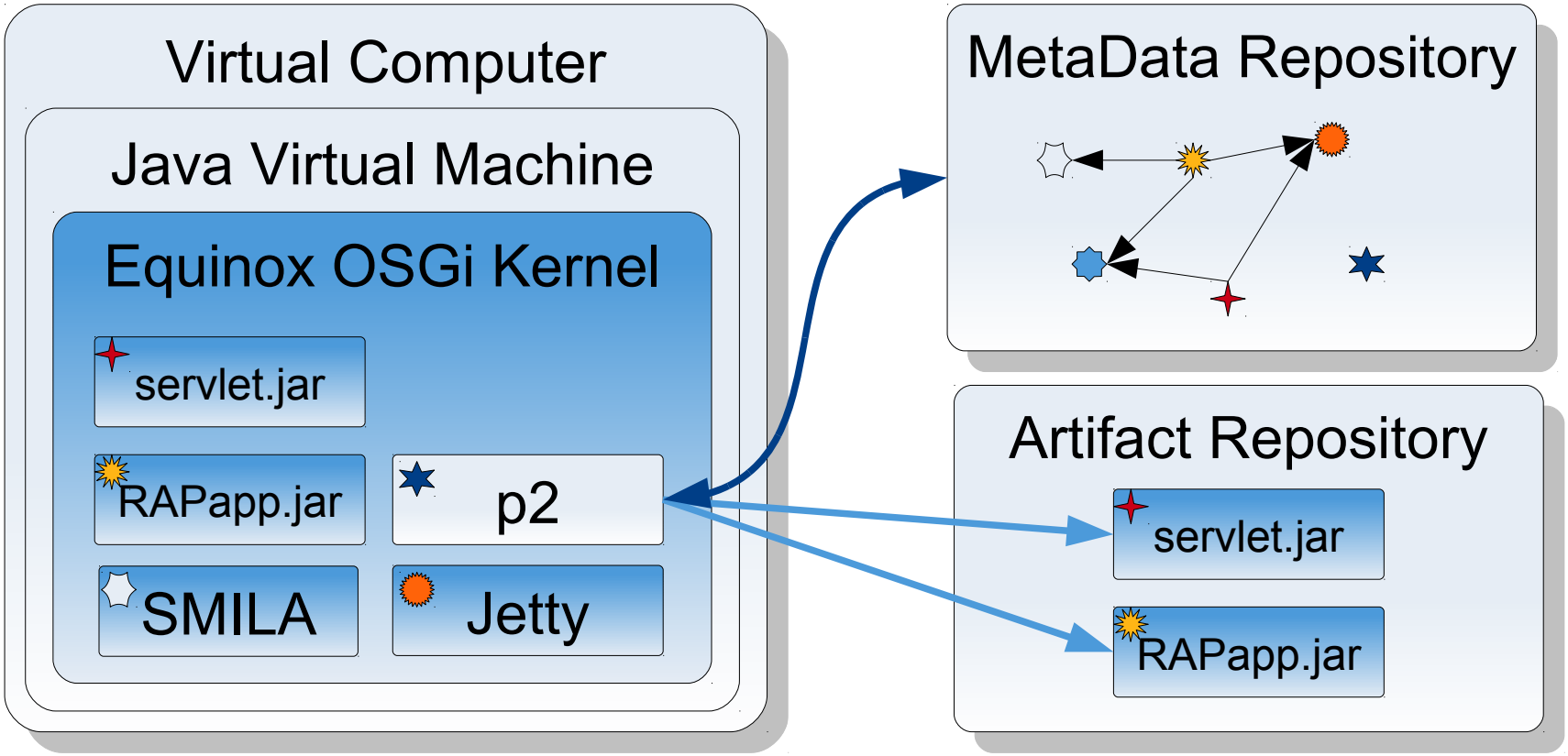
Dynamic Provisioning with p2



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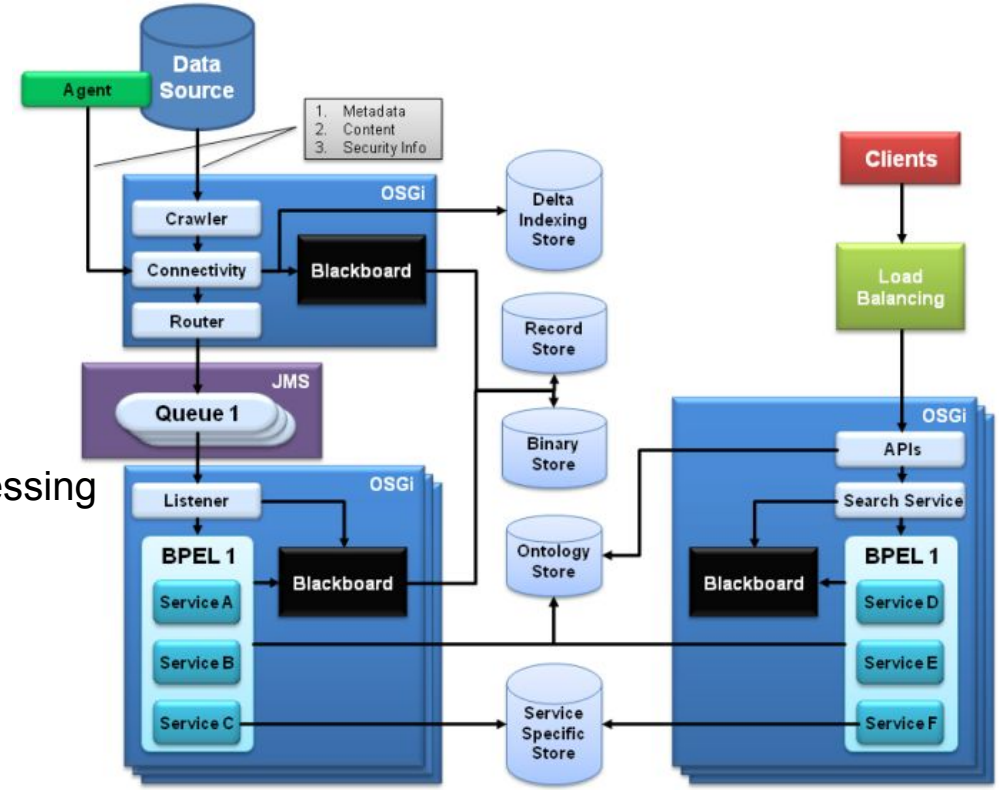
SMILA

- Enterprise Search Framework
- Rich persistence layer
  - Metadata
  - Binary
  - Ontology
  - Delta indexing
- Message distribution
  - JMS
- Access rights management
- Flexible workflow framework for processing and search
  - BPEL
- Ready-to-use components
  - Diverse crawlers and agents
  - Search engine
- General monitoring and management
  - JMX



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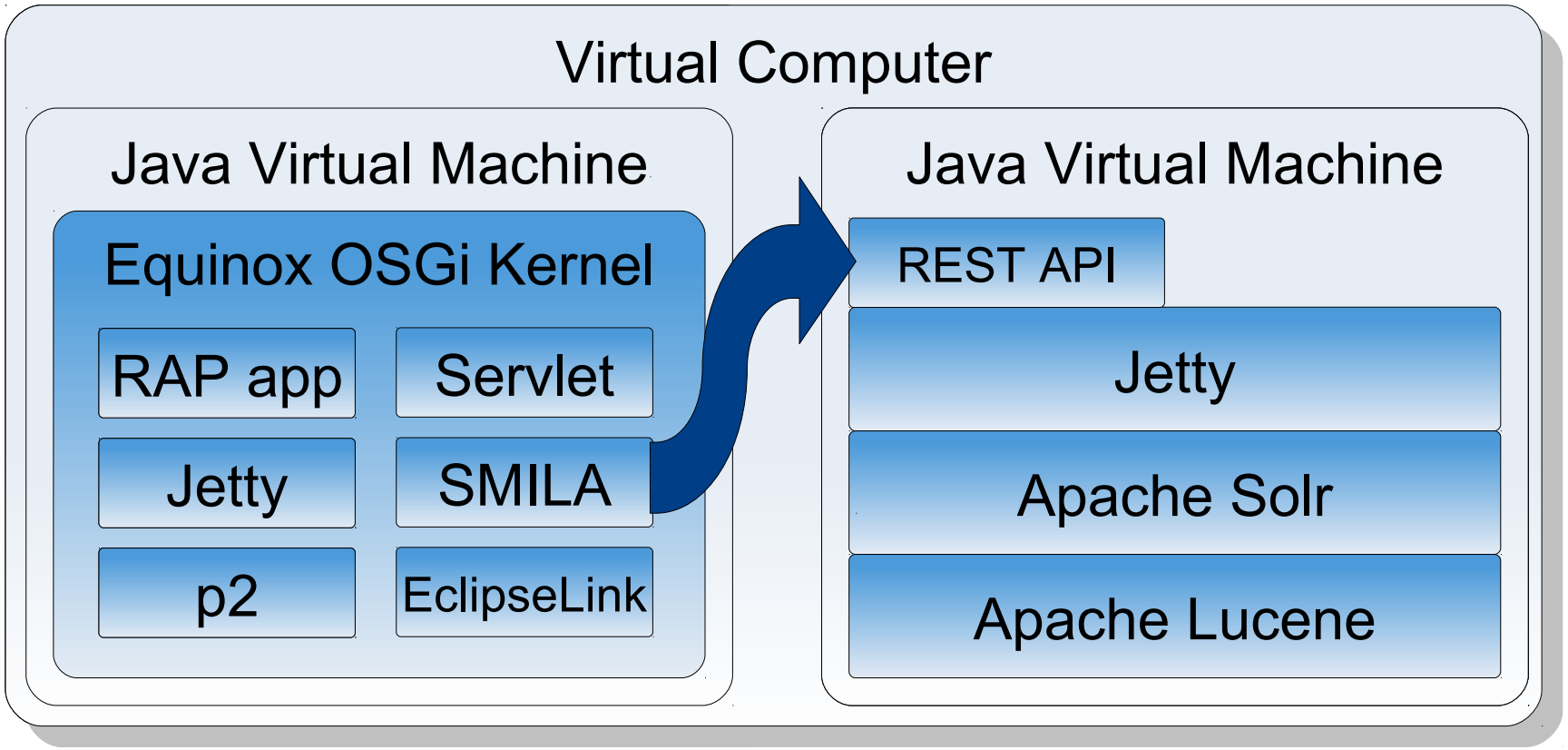
Inside a Cloud Instance



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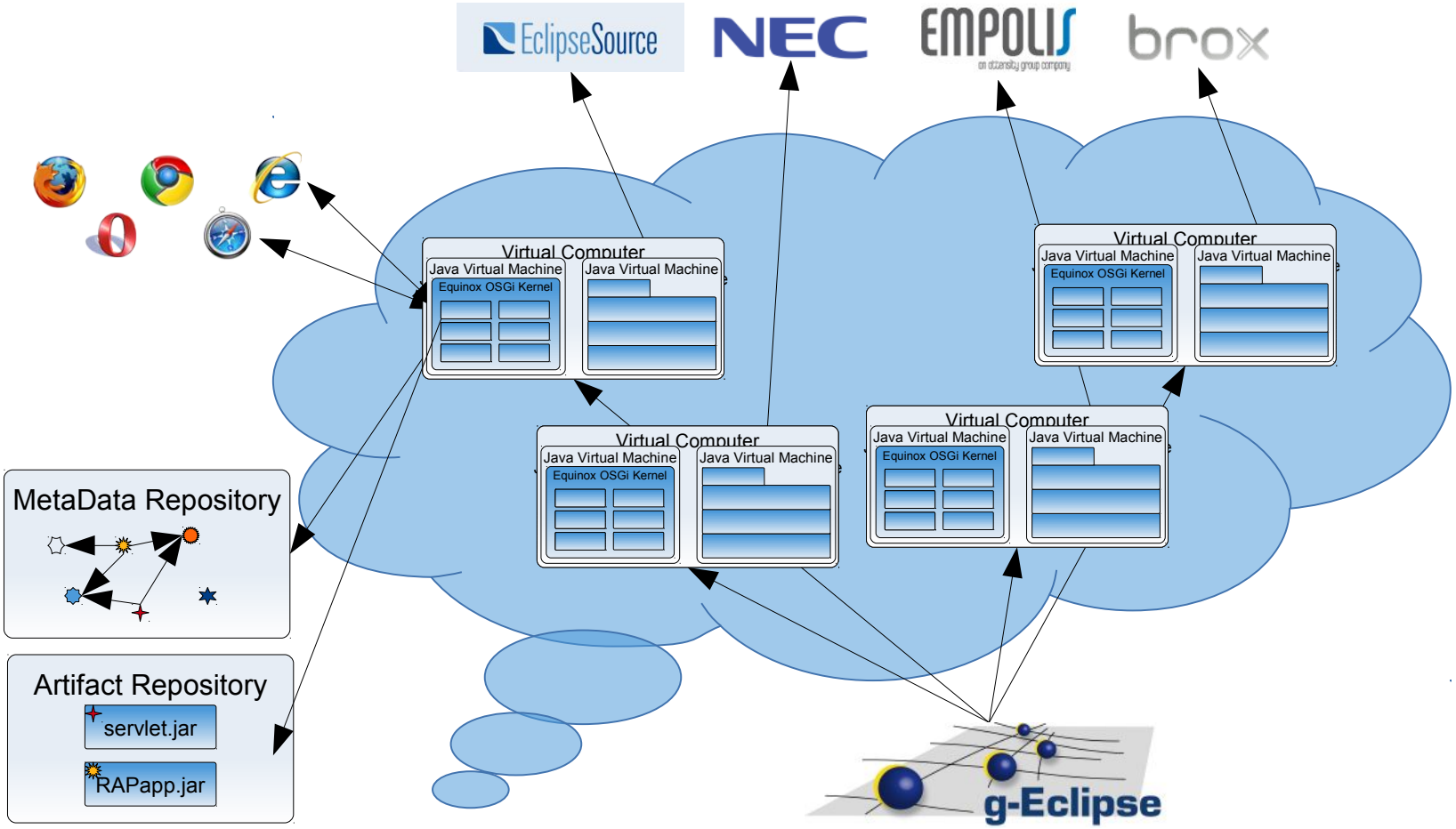
The Big Picture



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Wrap-up

- Co-operation between multiple Eclipse projects
  - RAP
  - G-Eclipse
  - SMILA
  - ...
- Running in a cloud
- g-Eclipse used for managing nodes in the cloud
- SMILA used as search and processing framework
- Available as a service
- http://cloudle.eclipsesource.com/search

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Credits

- Harald Kornmayer
- Igor Novakovic
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