David Savage | Paremus Ltd

OSGi And Private Clouds
Agenda

• Cloud computing today
• OSGi and the Cloud?
• Challenges of OSGi and the Cloud
• OSGi Cloud platform + demo
• Conclusion
• Questions?
Where is cloud computing today?
Why cloud?

• Gives you - just in time:
  – Processing power
  – Storage capacity
  – Network capacity
Cloud Realities

• Multiple APIs (e.g. Data Access)
• Limited APIs – Google = No threads (for example)
• Course grained @ scale VM image
• Not infinite resources
  – Contention
  – Latency
Why Private Cloud?

• Data ownership risks
• Data inertia – difficult to move once you start
• API lock-in – difficult to move to another provider
• SLA – if the $%&£ hits the fan can I spin up fast enough?
Are we here?
Or are we here?
How do we get here?

Credit: NASA/ESA
OSGi and the Cloud
OSGi a *quick* review

• Standard since 1999
• Modules
• Lifecycle
• Services
An uncomfortable truth?

- Lines of code double every 7 years
- 50% of development time spent understanding code
- 90% of software cost is maintenance & evolution

Types of scale

• Operational
• Architectural
• Administrative
Are we dealing with scale?

- Operational ✓
- Architectural ?
- Administrative ?
OSGi Cloud benefits

- Customisation
- Dynamic
- Lightweight
- Self-describing
OSGi Cloud services?

- MapReduce service
- Batch services
- NoSQL services
- Communications services
- Social networking services
- Billing services
- AJAX/HTML 5.0 services
OSGi Cloud Challenges?
OSGi is complex?

• Classloading
• Meta data
• Availability
OSGi Alternatives

- VM Images
- WARs/EARs
- Jigsaw/QWYLT
An OSGi Cloud Platform
RFP 133 – Cloud Computing

• Run by the OSGi Alliance
• Relevant OSGi technologies:
  – Remote Services
  – OSGi Bundle Repository
  – Subsystems
  – Configuration Admin
  – Generic Capabilities
Nimble a *quick* overview

- Bundles
- Repositories
- Resolver
- Shell

![Diagram](image-url)
Service Fabric a *quick* overview

- Nimble
- Management
- Systems
- Provisioning
OSGi Cloud Demo
What I'm going to demo

• GWT stock quote example from “OSGi In Action” deploy using Nimble
• Deploy web front end + dependencies
• Deploy back end on single vm
• Use fabric to scale up/down number of back end services
Pictures tell a thousand words
Conclusion
OSGi Cloud benefits

• Modular
• Dynamic architecture
• Self-describing
• Lightweight
Cloud engineering

• Simplicity by encapsulation
• Flexibility by abstraction
• Architecture must cope with change
Questions
Contact

• Web: http://www.paremus.com
• Email: david.savage@paremus.com
• Blog: http://chronological-thought.blogspot.com
• Twitter: @davemsssavage
• Book: OSGi in Action (Manning Ltd)