



NORTHROP GRUMMAN

OSGi Framework in Ground Systems Product Lines

GSAW 2010

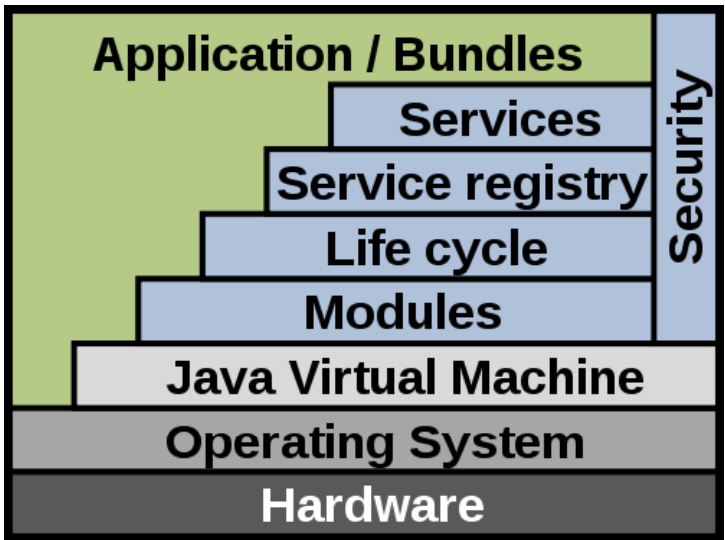
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Ubiquitous S/W Challenges

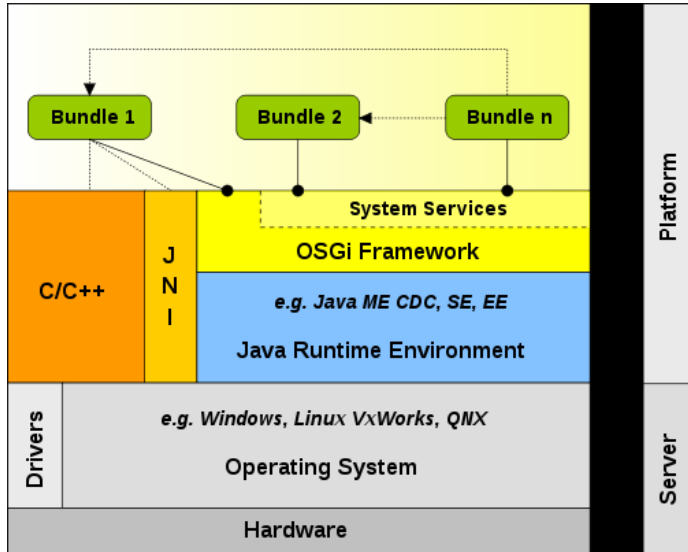
- Software complexity constantly increasing
- Shorter development cycles demanded by customers
- Requirements creep as software becomes more and more complex
- Management of multiple variations for different customers
- Of course re-use will help... but two major hurdles stand in our way
 - The “one-offs” culture
 - Design philosophies vary
 - Coding styles differ
 - Protectionism (It's my code)
 - Communications layers and decisions differ
 - Technology disagreements
 - How do we implement? Which framework? Which protocol?
- So what do we do?
 - We spend too much time integrating one-off's instead of solving “hard problems”
- Bottom line... Large companies have a hard time maintaining a consistent culture
 - This inability breeds culture clashes, head butting, and, in general, prevents us from solving truly Hard Problems

What Is OSGi?

- A software technology framework that enables:
- s3 • A software framework for Java that provides a robust dynamic component model
- The product of the OSGi Alliance – a world-wide consortium of s/w organizations
 - Established in 1999
 - Members from diverse industries, including automotive, telecom, consumer electronics, etc.
- A specification, reference implementations, test suites and certification processes



From: OSGi Alliance



From: OSGi Alliance

Slide 3

s3

First bullet is really still "philosophy/problem statement" - not solution. Probably should go elsewhere.

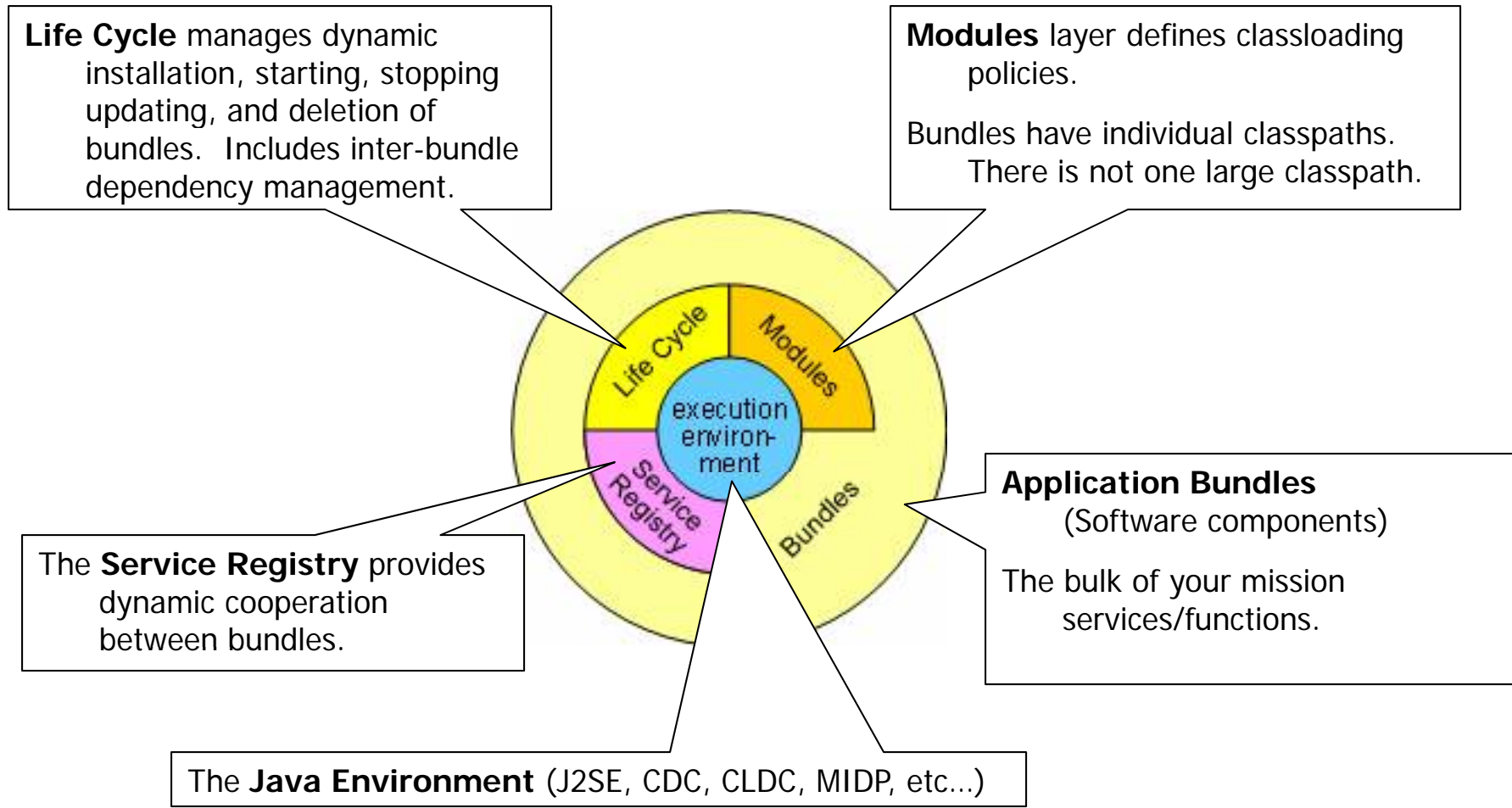
Can probably drop second bullet.

s087759, 2/4/2010

The OSGi Value Proposition

- A software technology framework that enables:
 - Quick integration of software components
 - A focus on solving hard mission problems, rather than integrating infrastructure
 - A shorter software time-to-market cycle
 - Reduces complexity at the highest level by decomposing the hard problems
 - Loosely-coupled components
- Features
 - Provides a component based framework architecture
 - Dynamic removal and addition of components
 - Automatic dependency management amongst software components
- Benefits
 - Reduces time-to-market and development costs
 - Integration of pre-built and pre-tested modules
 - Reduces long-term maintenance cost
 - Test once, re-use many times
 - Enables application creation from a federation of services
 - Simpler to implement a SOA

OSGI is the Glue...



OSGI is a flexible, effective glue that wires software components together

How we use OSGI...

