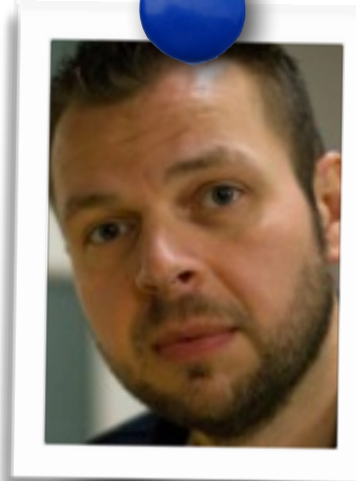


Building Modular Java Applications in the Cloud Age



amptu

About me



Bert Ertman

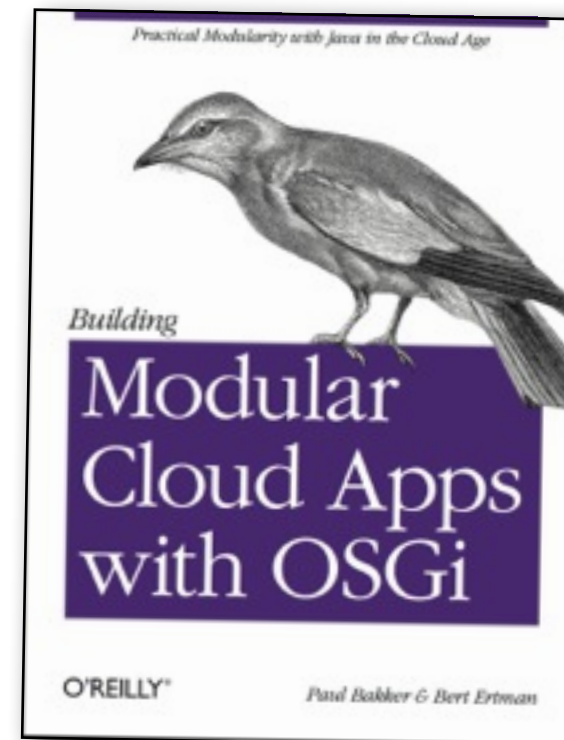
Fellow at Luminis (Netherlands)
JUG Leader for NLJUG
Java Champion

luminis 

bert.ertman@luminis.eu



@BertErtman



Observations

- Extremely agile
(first mover advantage)
- Architecture (and code base)
should be able to cope with change

Trend

- Applications tend to
grow bigger and more
complex
- Agile development
and refactoring have
become more common

This leads to a number of challenges :

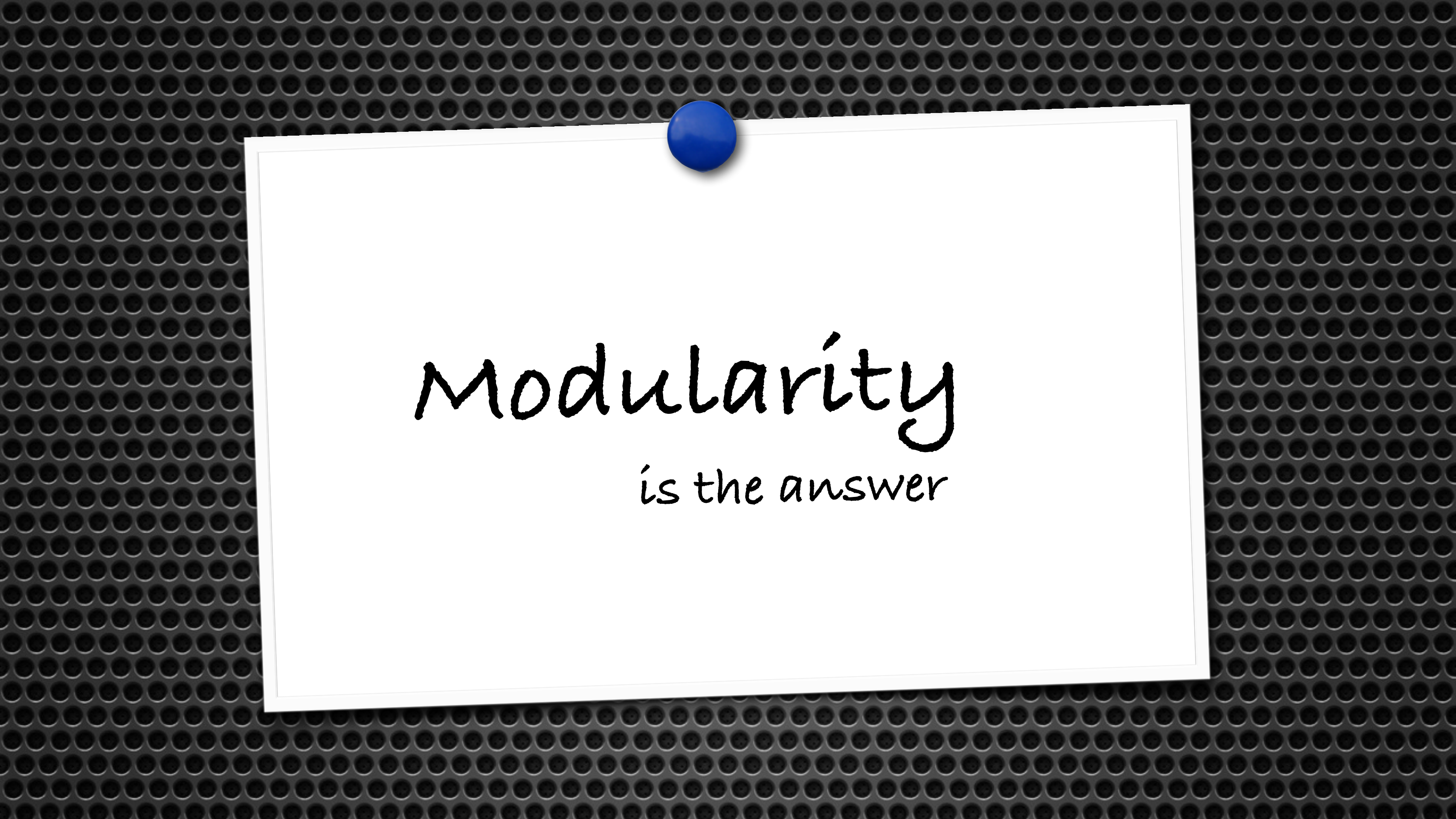
Dependency
management

versioning

Maintenance
(long term)

Deployment



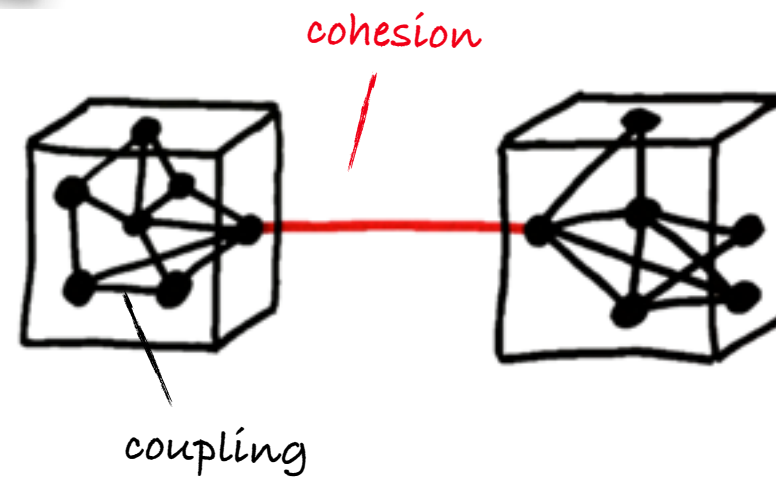


Modularity
is the answer

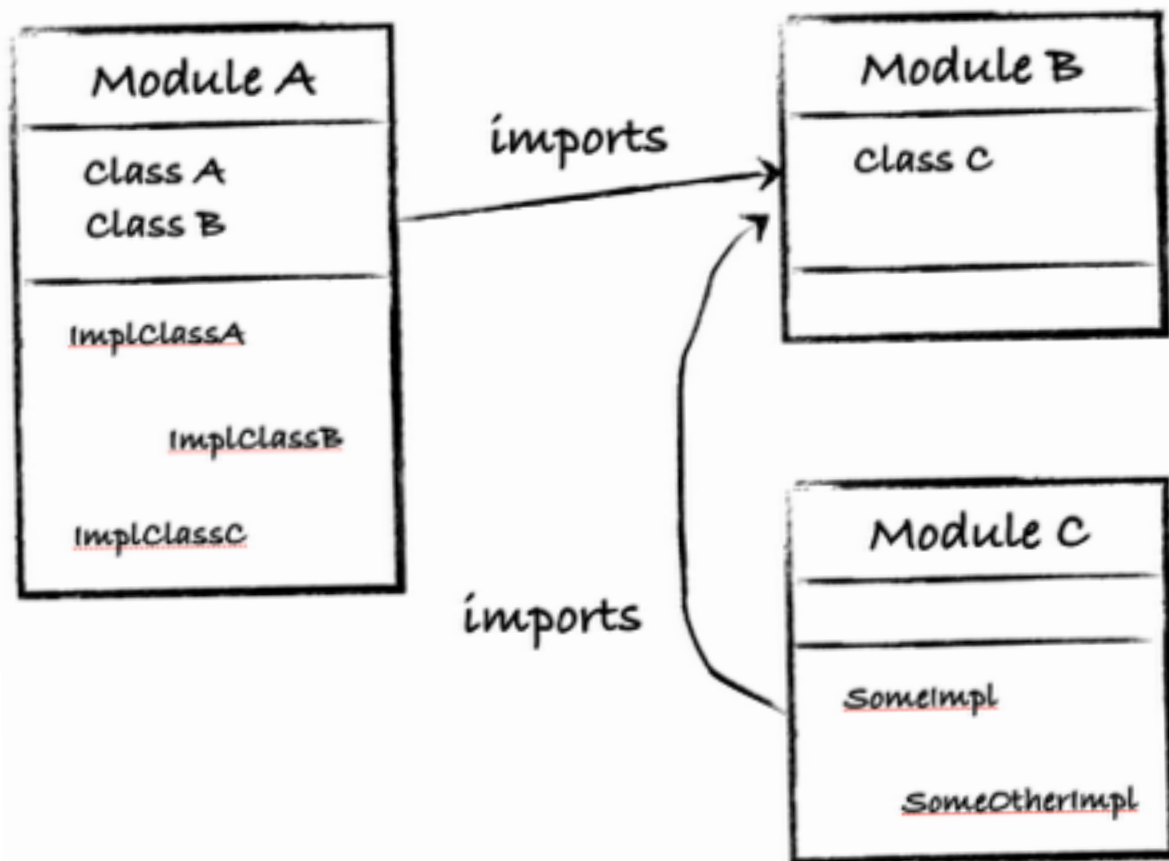
What we learned about OO design in university :

Prevent
(tight)
coupling

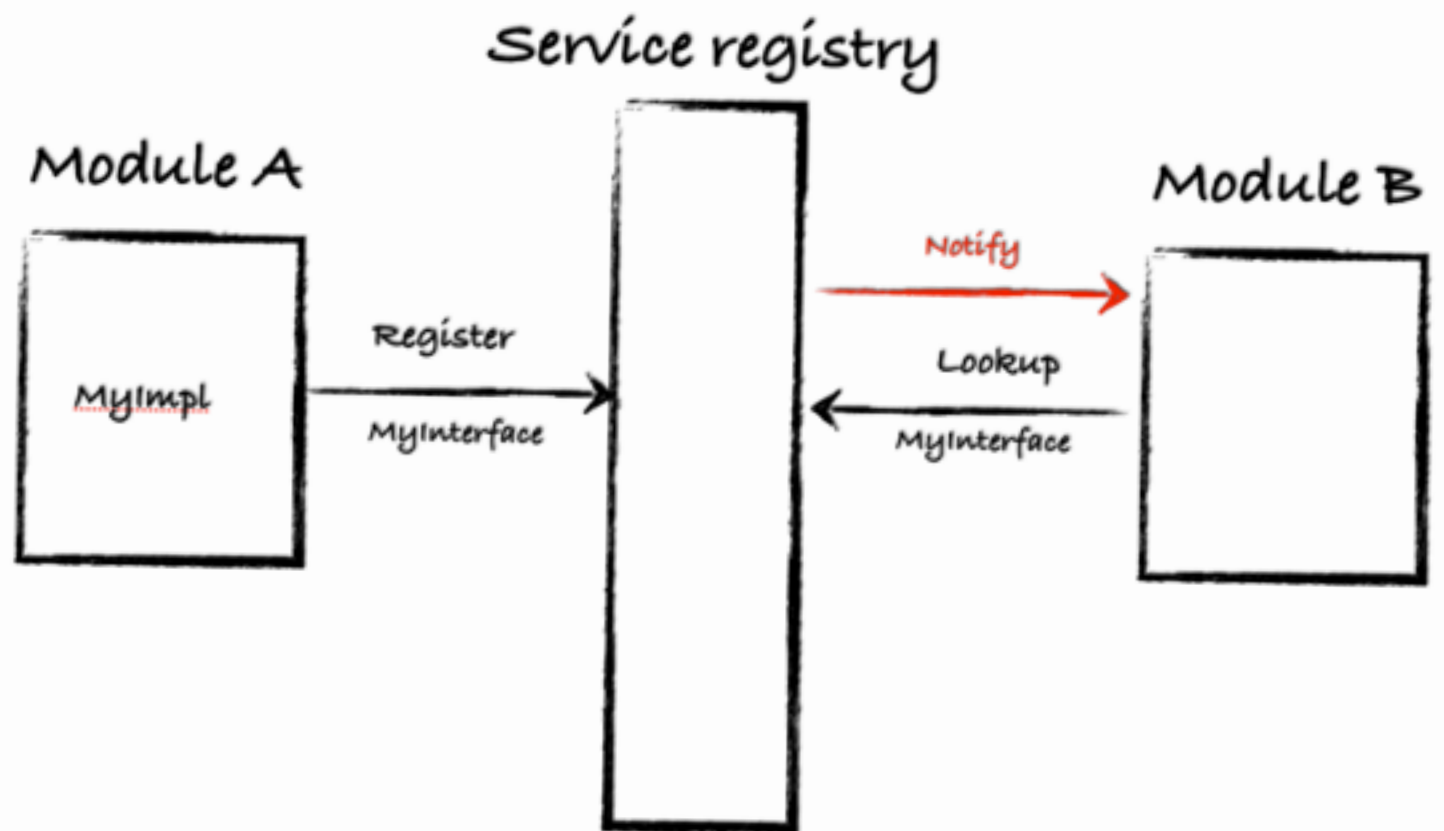
Promote
cohesion



Modules



Service Lookups





Stop talking...
and show me code!



Back to the cloud...

Requirements:

- ❑ Modern web app
- ❑ UI mostly offloaded to clients or devices
- ❑ Document driven interaction
- ❑ Integration via REST API
- ❑ Web scale data store
- ❑ Multi-tenant
- ❑ Elasticity

Typical architecture

HTML 5 + JavaScript

RESTful services

OSGi services

Apache Felix

Mongo

S3

Components

- Auth
- Blob stores
- MongoDB
- Multi-tenancy
- OpenSocial
- Search
- Remote Services
- REST
- Template
- Web
- ...



amdatu

Let's Add **AMDATU**
to our stack →

- Architectural focus on modularity
- Runtime dynamic services
- High level API

Typical architecture

HTML 5 + JavaScript

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RESTful services


OSGi services

Apache Felix

Mongo

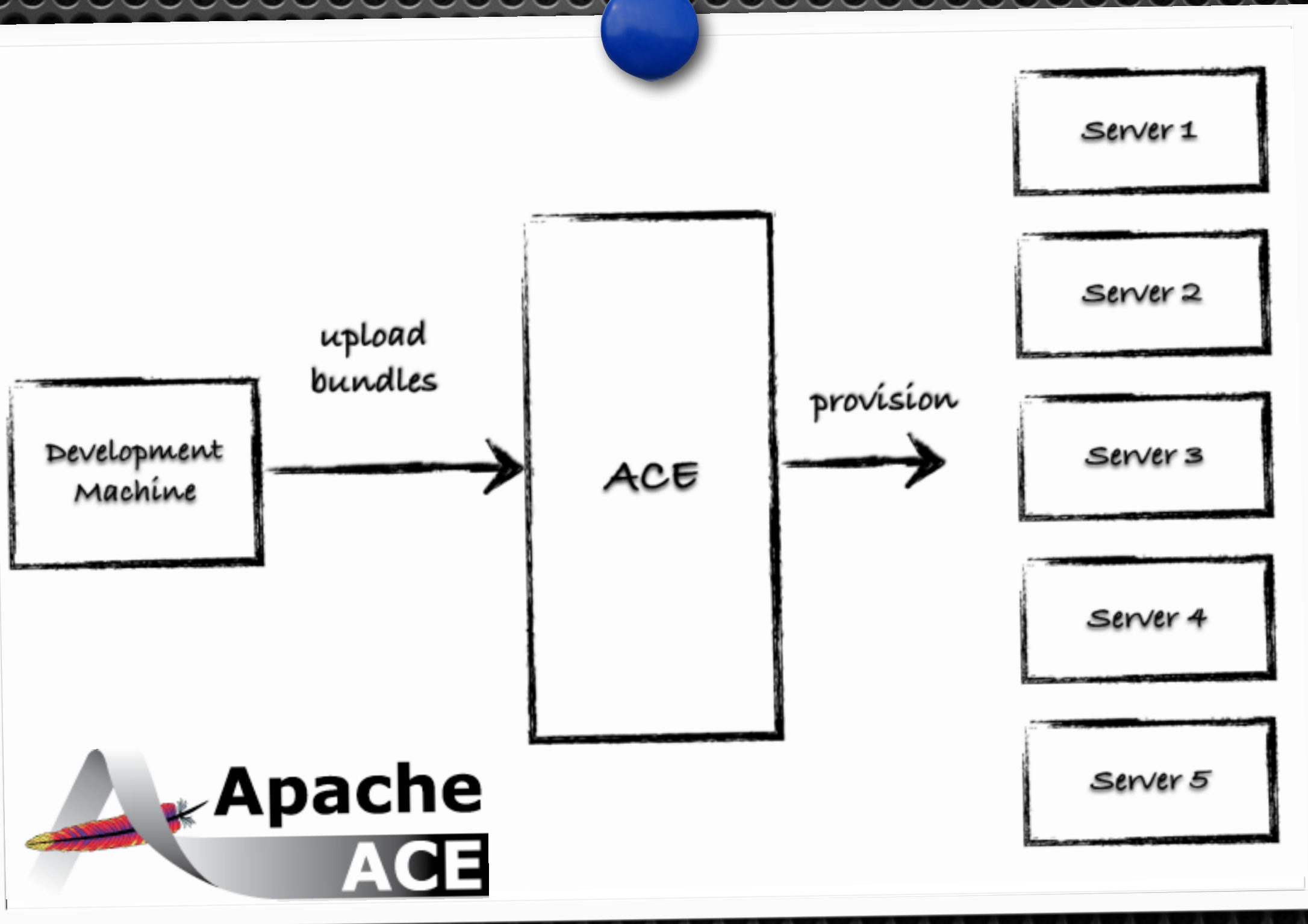
S3

Demo



What about
deployment?

Provisioning Server

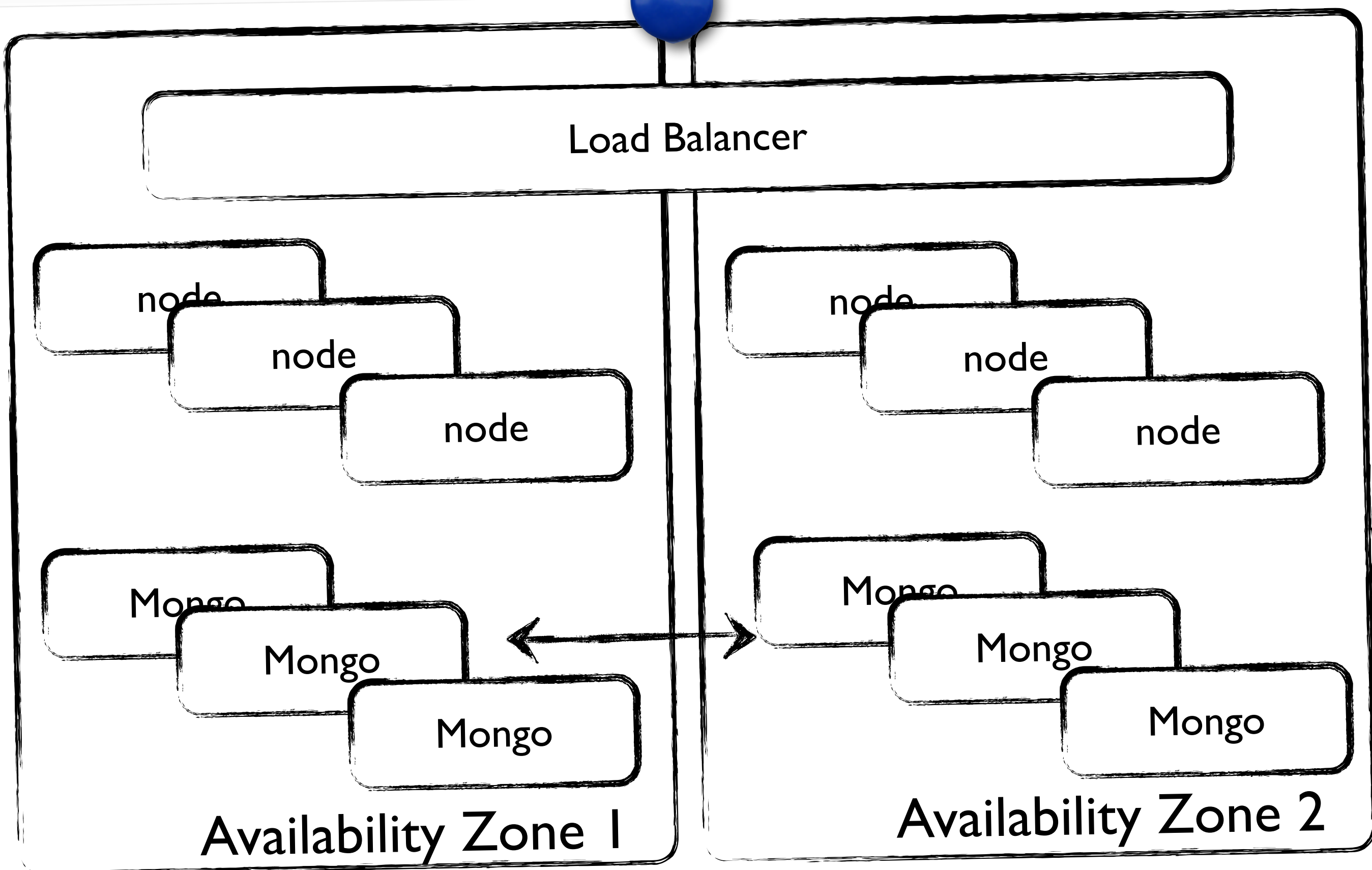


Demo

Auto scaling

Enough
capacity

Without paying
for idle servers
at night...



Load Balancer

node

node

node

Mongo

Mongo

Mongo

Availability Zone 1

node

node

node

Mongo

Mongo

Mongo

Availability Zone 2

Auto scaling

AWS Auto Scaling

1. Start

Node

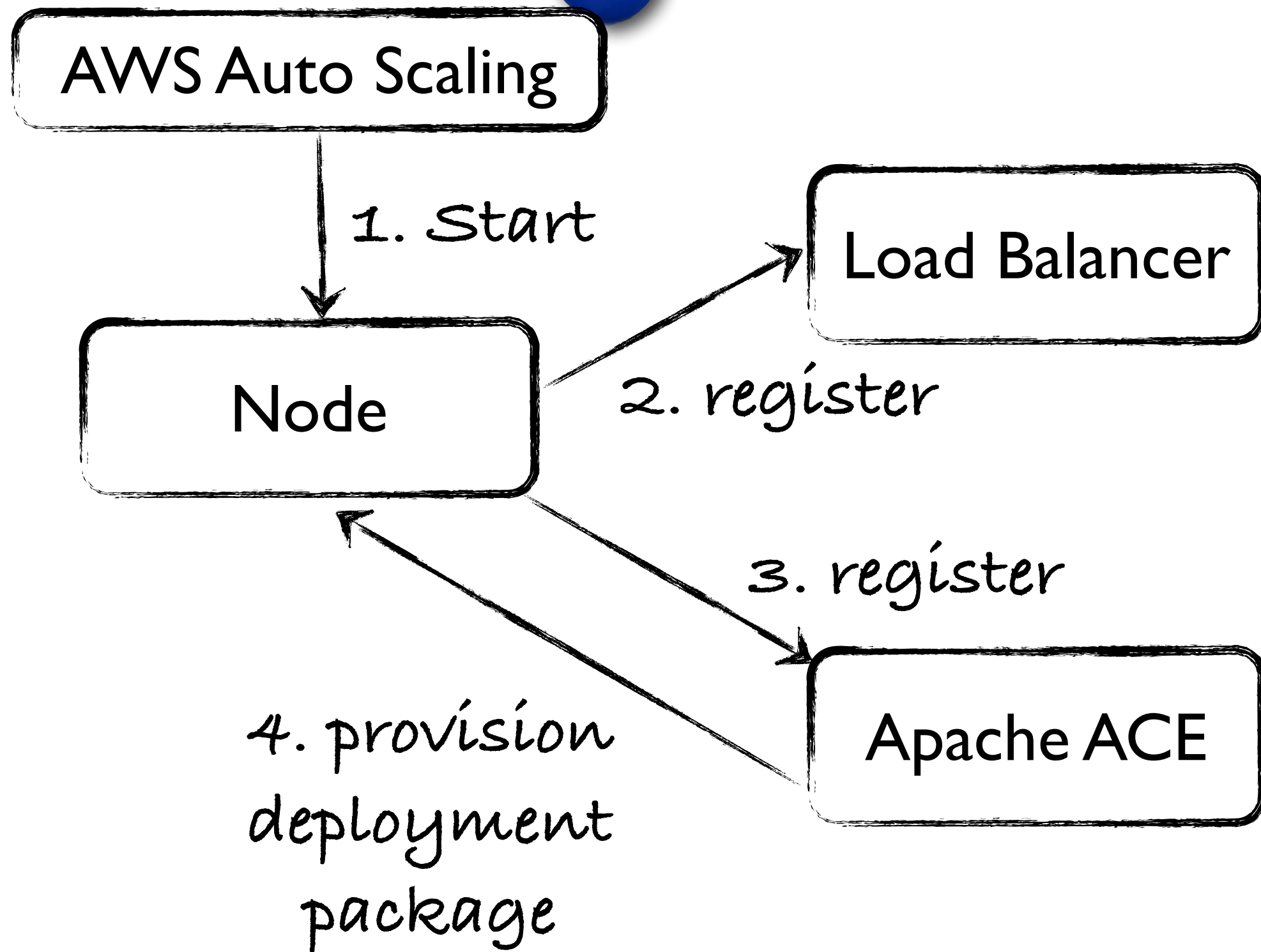
Load Balancer

2. register

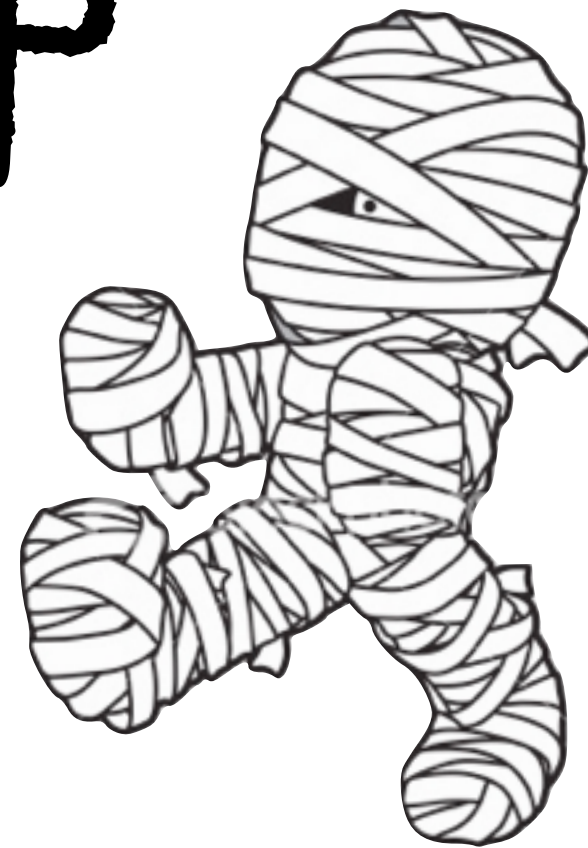
3. register

Apache ACE

4. provision
deployment
package



wrap up



The case for modularity

Modularity is the ultimate agile tool!

- Small, disposable, components
- Prevents code rot on the architectural level
- Isolate problems, focus on work

Practical Modular Java in the Cloud Age



Building

Modular Cloud Apps with OSGi

O'REILLY®

Paul Bakker & Bert Ertman

A screenshot of the Amdatu website displayed in a web browser. The browser's address bar shows 'amdatu.org'. The website has a dark header with the 'amdatu' logo. A left sidebar contains a navigation menu with categories like 'HOME', 'GETTING STARTED', 'COMPONENTS', and 'GETTING INVOLVED'. The main content area features the Amdatu logo and two sections: 'OSGi cloud components' and 'The Amdatu Way'. The footer contains copyright information for 2012 Amdatu.

amdatu.org

amdatu.org

iPhone Dev Center | iGoogle | NU.nl | Apple | Yahoo! | Google Maps | YouTube | Wikipedia | News | Popular | Mac Stuff | Other Bookmarks

amdatu

HOME

- Overview
- News

GETTING STARTED

- How to Use
- Introduction to Modularity
- Setting up the IDE
- Creating a web app
- Cloud deployment
- Release management
- Downloads

COMPONENTS

- RESTful web services
- Multi tenancy
- Search
- MongoDB
- Blob stores

GETTING INVOLVED

- Contributors
- Source
- Mailing lists
- Wiki
- Issues

Amdatu

OSGi cloud components

Amdatu is an open source community effort focussed on bringing OSGi to the cloud. It contains components to create RESTful, scalable and distributed web applications that use NoSQL data stores, transparent multi-tenancy and much more.

The Amdatu Way

Amdatu is designed to be modular; you only use the components that you actually need for your application. You can use Amdatu components in any OSGi application, no matter how you build it. Following the Amdatu Way however you get a streamlined development and production flow which has been proven to work well. If you are new to OSGi you should have a look at the getting started guides provided on this website that will show you the Amdatu Way. If you have an existing application and are just looking for useful components, take a look at the components available.

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survey.bertertman.com

first two persons to fill out
a 5* survey get a book

Dank u

Merci

Danke

Mahalo

Obrigado

Grazie

Gracias

Thank
you

Tak