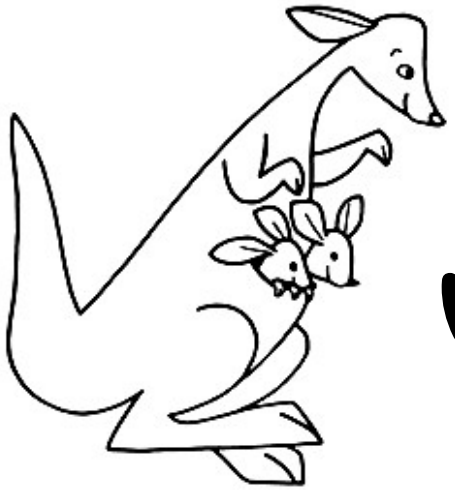
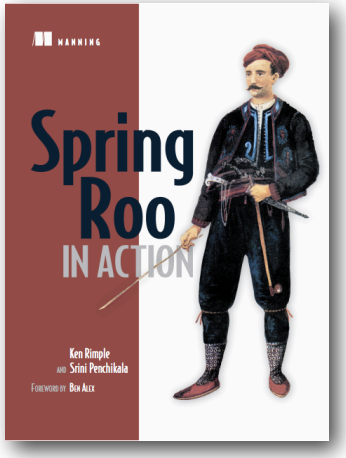
CHARIOT SOLUTIONS

Emerging Technologies for the Enterprise 2012



Leaping Ahead with Roo Add-Ons



Ken Rimple
Chariot Solutions

Agenda

- What is Roo?
- Write Roo add-ons
  - Types of add-ons
  - Demo 1: install jQuery
  - Demo 2: install Coffeescript
- Installing and Publishing Add-ons

What is Spring Roo?

- Command-Line Shell
- Configures Projects
- Uses shell commands
- Provides maven-based builds
- Generates code smartly

Without customization, Roo can configure...

Spring Framework

JPA 2.0

Functional Maven build

Localization

Hibernate, OpenJPA, EclipseLink, or Data Nucleus JPA Providers

NoSQL with MongoDB and Spring Data JPA MongoDB

Persistence JUnit Tests

Your pick of RDBMS

Tiles layouts and theming

Spring JMS w/ActiveMQ

Selenium Web Testing

Reverse Engineering

Email Support

Solr searching

Bean Validators

Spring MVC

Logging w/SLF4J

Spring Services

JSF w/Mojarra or MyFaces

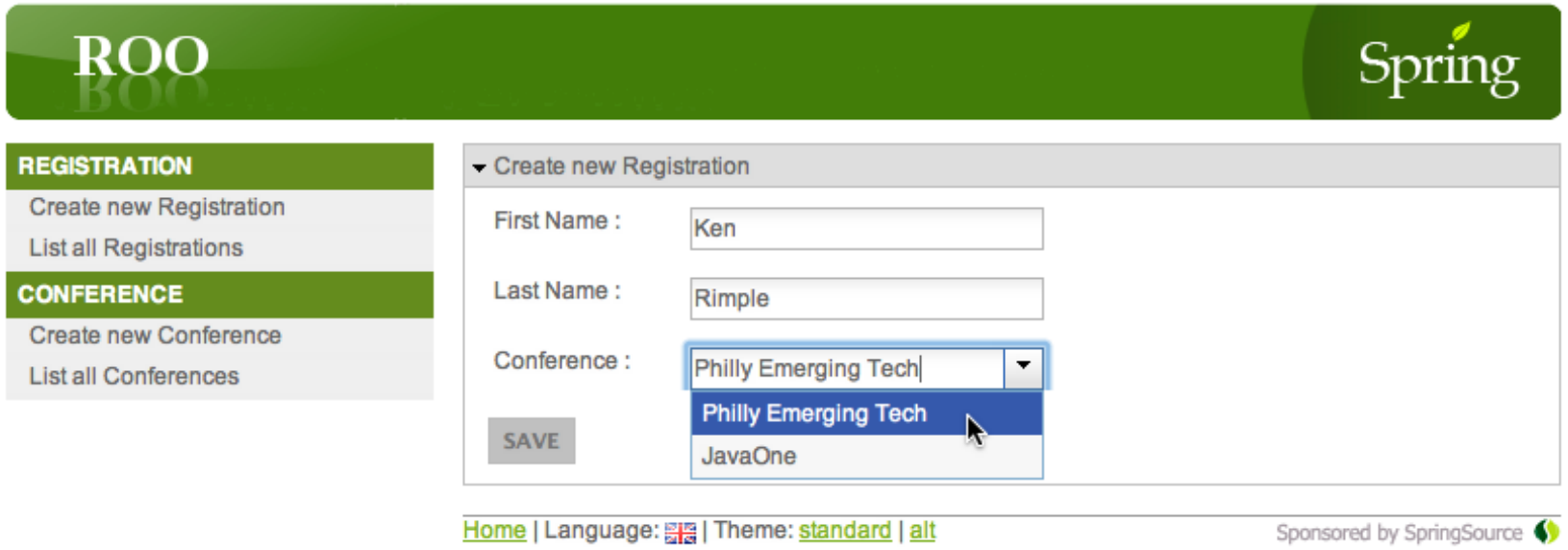
GWT w/MVP

Spring Repositories and Spring Data JPA

This script...

```
project --topLevelPackage org.ete --projectName conference-planner
jpa setup --database HYPERSONIC_PERSISTENT --provider HIBERNATE

entity jpa --class ~.model.Conference --testAutomatically
field string --fieldName conferenceName
field date --fieldName startDate --type java.util.Date

entity jpa --class ~.model.Registration --testAutomatically
field string --fieldName firstName
field string --fieldName lastName
field reference --fieldName conference --type ~.model.Conference
      --cardinality MANY_TO_ONE

focus --class ~.model.Conference
field set --fieldName registrations --type ~.model.Registration
      --cardinality ONE_TO_MANY --mappedBy conference

web mvc setup
web mvc all --package ~.web
```

Provides this...

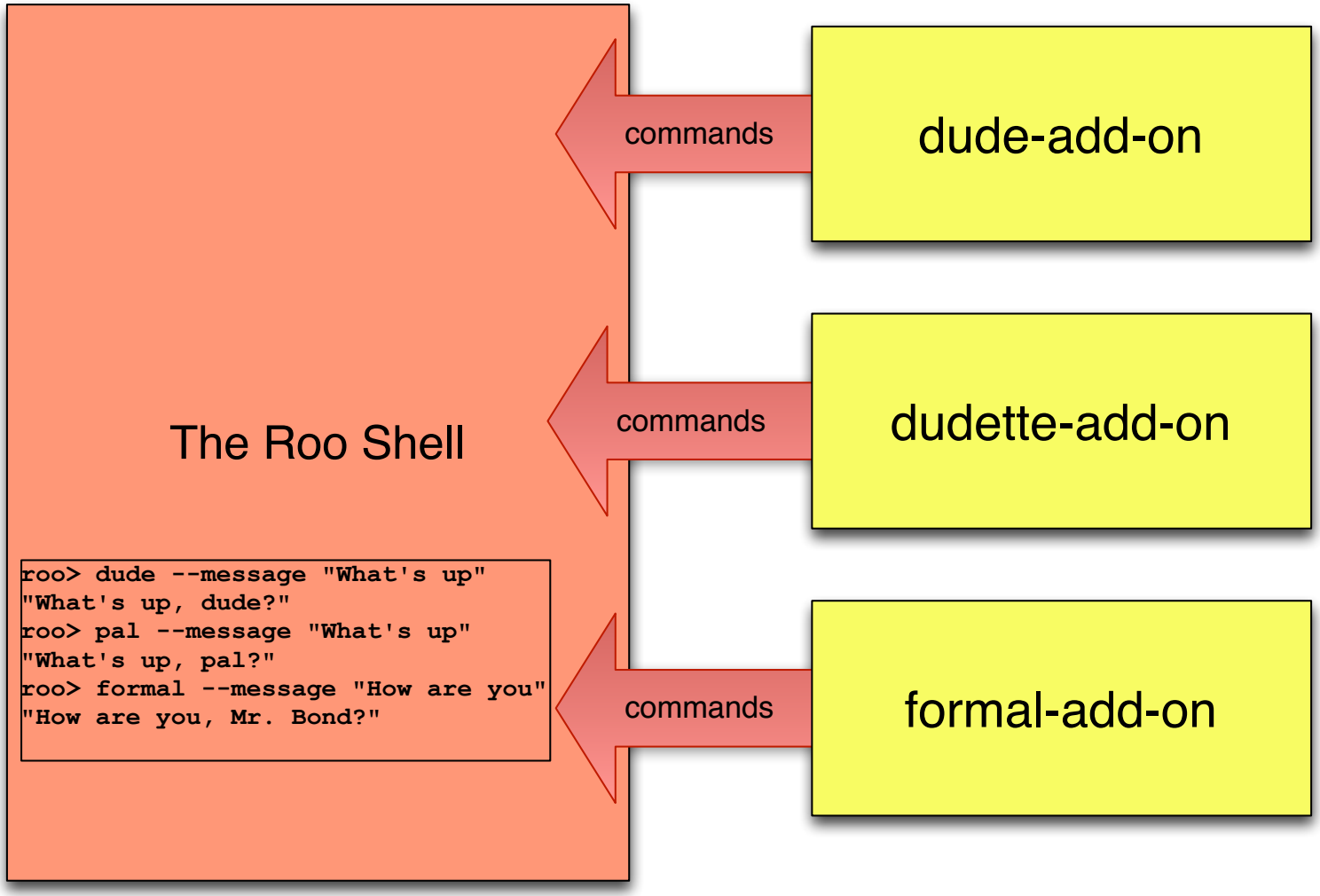


Note - A slight adjustment here, using itemLabel in the create.tagx and update.tagx files to only show conferenceName

What are add-ons?

- OSGi bundle (JAR) projects
- Created in Roo itself
- Built using Maven
- Can be installed in a variety of ways

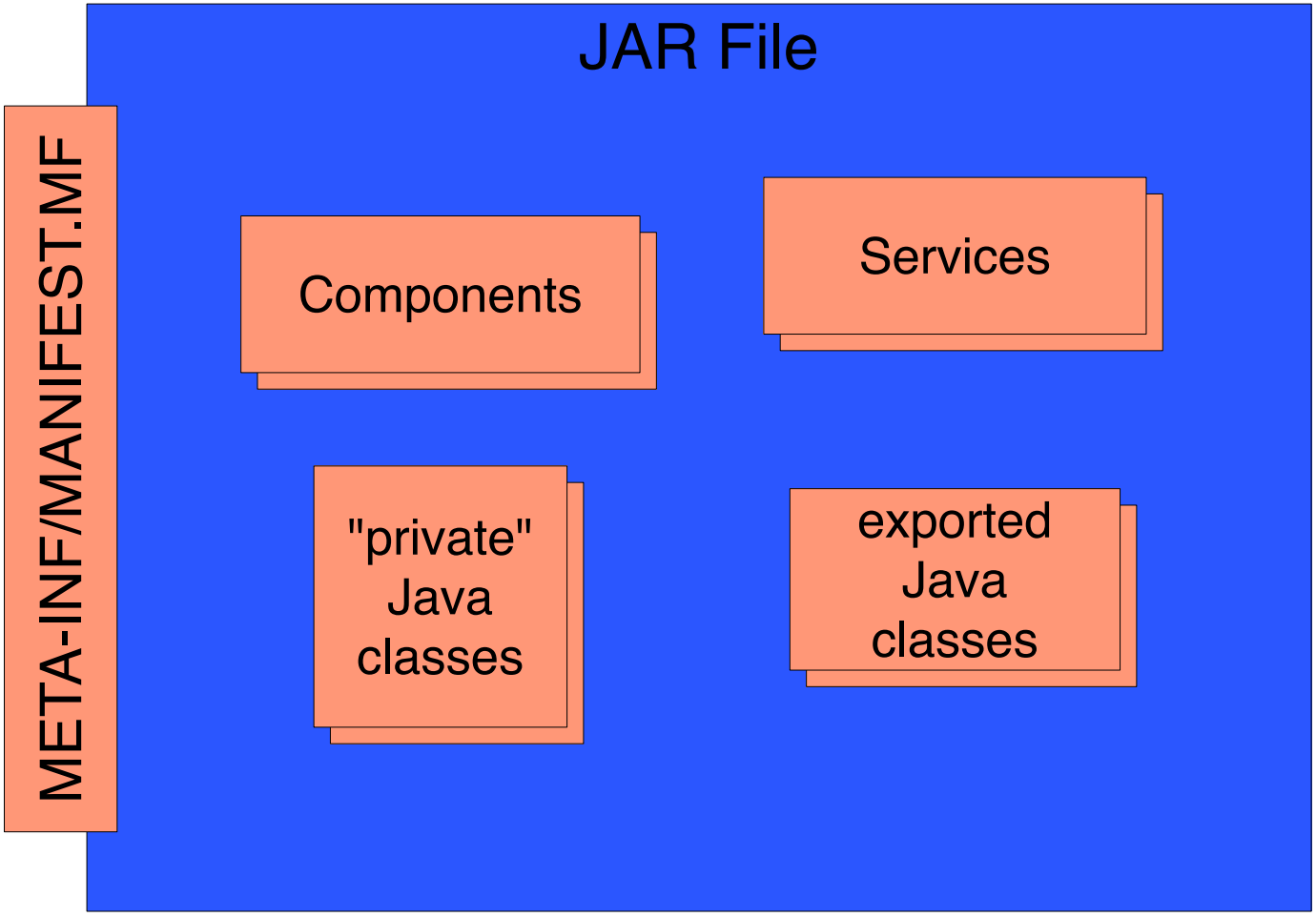
Roo add-ons inject Shell commands



Why write add-ons?

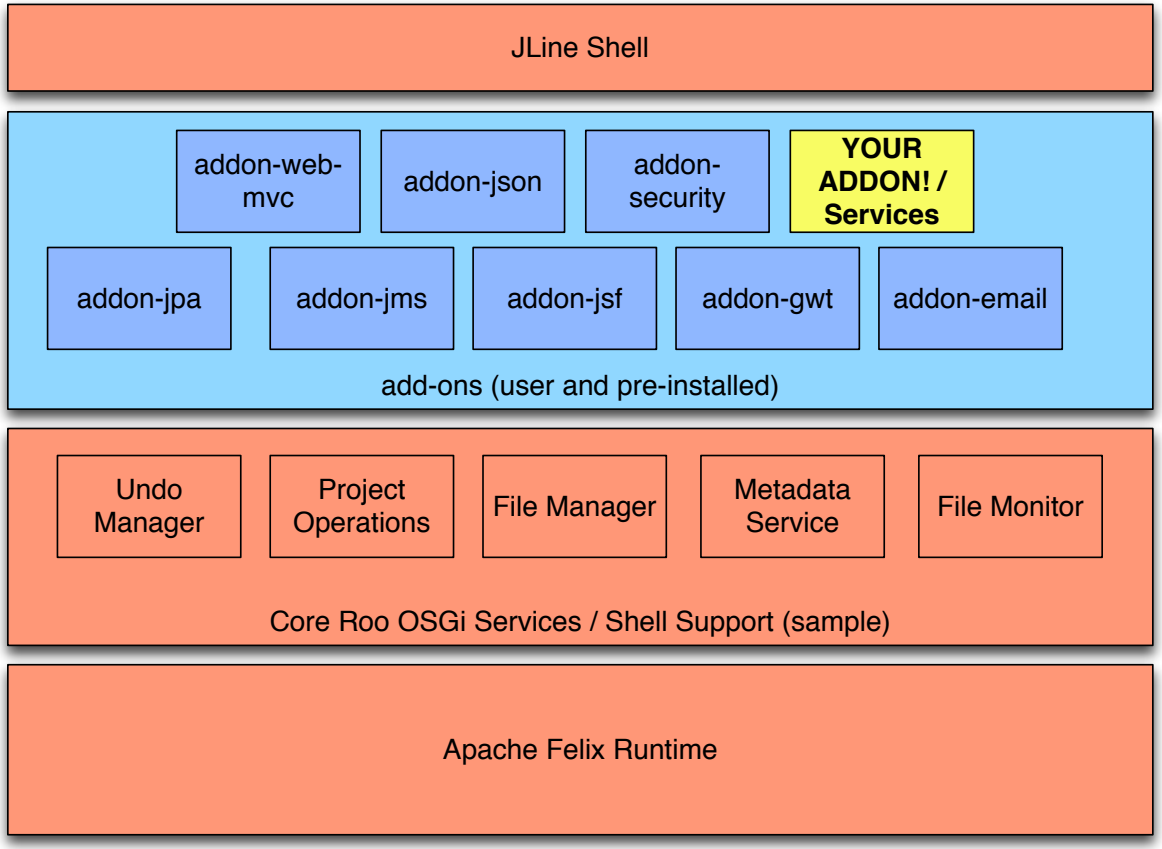
- Expose features (like plug-ins)
  - To your team
    via shared OSGi JARs
  - To your company
    via OSGi Bundle Repositories
  - To the world
    via Repositories and the RooBot

Add-ons are OSGi Bundles



Core Roo Services are Consumed by add-on Bundles

- support (Lots of static util classes)*
- project (metadata, build manipulation, ApplicationContextOperations, PomManagementService, PathResolver)
- process-manager (FileManager, ProcessManager)
- classpath (ClasspathOperations, reflection and other features)
- And others



Read the source code!
http://github.com/springsource/spring-roo

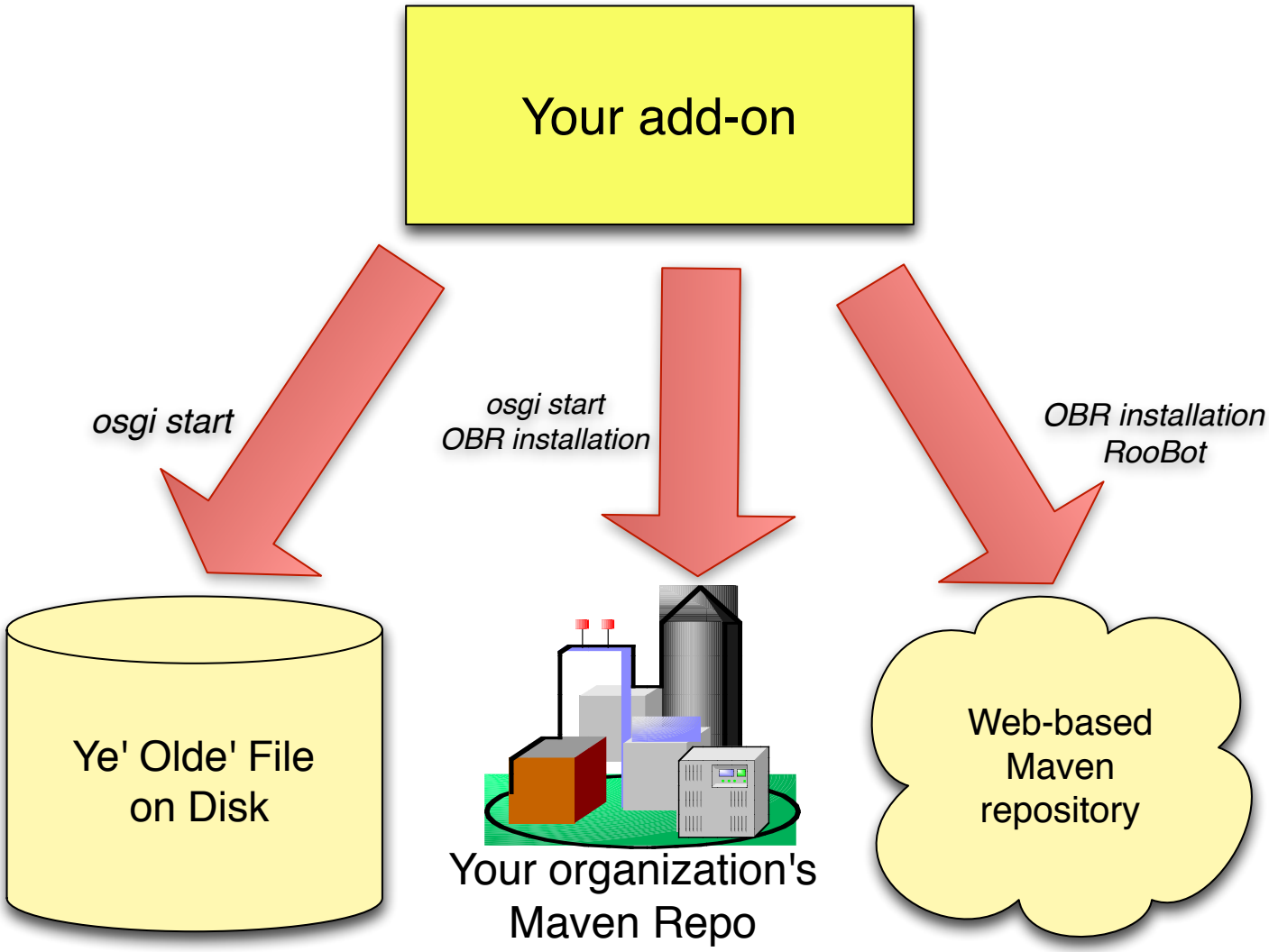
Types of add-ons

Type	Use	Examples
simple	Modify files in your project	jQuery add-on web mvc update tags
advanced	Manipulate Maven build	CoffeeScript add-on jms setup, etc...
i18n	Add a new scaffold language	Installing the Norwegian language
wrapper	Jar contents added to the Roo shell classpath	Installing JDBC drivers for DBRE

Simple add-ons - jQuery

Advanced Roo add-ons

Add-on Deployments



Config, OR...

Nexus and Maven and GIT, oh my!

Local Deployment Demo

We've already done this

- Just use the Roo osgi start command:

```
roo> osgi start --url
     file:///.../artifactname.jar
```

Deploying to an OBR

What is an OBR?

- An XML-based OSGI Bundle Repository
  - e.g. - Maven Repository with XML descriptor linking to bundles
  - Maintained by Roo deployments

The OBR (osgi obr <command>)

```
# add an OSGi OBR repository
osgi obr url add --url url

# load an add-on from a repository
osgi obr start --bundleSymbolicName bsn

# find an OBR add-on from
# the set of installed repos
osgi obr list --keywords "coffeescript"

# refresh your OBR
osgi obr refresh --url url

# remove an OBR repository
osgi obr remove --url url
```

How to deploy to an OBR?

```
<!-- We are using CloudBees' GIT -->
<scm>
  <connection>
   scm:git:ssh://git@git.cloudbees.com/...
     sillyweasel/jquery-roo-addon.git
  </connection>
  <url>
   git:ssh://git@git.cloudbees.com/...
     sillyweasel/jquery-roo-addon.git
  </url>

  <developerConnection>
  scm:git:ssh://git@git.cloudbees.com/...
     sillyweasel/jquery-roo-addon.git
  </developerConnection>
</scm>
```

```
<?xml version="1.0"?>
<plugin>
  <groupId>org.apache.felix</groupId>
  <artifactId>maven-bundle-plugin</artifactId>
  <version>2.3.4</version>
  <extensions>true</extensions>
  <configuration>
    <instructions>
      <Bundle-SymbolicName>${project.artifactId}</Bundle-SymbolicName>
      <Bundle-Copyright>Copyright ${project.organization.name}.
                All Rights Reserved.</Bundle-Copyright>
      <Bundle-DocURL>${project.url}</Bundle-DocURL>
      <Export-Package/>
    </instructions>
    <remoteOBR>true</remoteOBR>
    <bundleUrl>
      httppgp://ec2-54-248-4-46.
       ap-northeast-1.compute.amazonaws.com:8081/
       nexus/content/repositories/releases/org/
       sillyweasel/addons/jqueryui/
       org.sillyweasel.addons.jqueryui/
       ${project.version}/
       ${project.artifactId}-${project.version}.jar
    </bundleUrl>
  </configuration>
</plugin>
```

Demonstration : OBR

The RooBot

- For adding to the Roo public repository
- Email the URL to your OBR to s2-roobot@vmware.com
- Roo team will build your add-on, deploy it to OBR
- Check for build errors at http://spring-roo-repository.springsource.org/roobot/roobot-log.txt

The Roo community needs

- More web framework support
- More JMS container add-ons
- More NoSQL DBMSs
- Better client-side widgets
- Better examples to start with
- More useful add-on services (JIRA)

Summary

- Start with a simple add-on (using roo addon create simple)
  - Good examples: addon-backup, addon-logging
- Learn how to deploy add-ons
  - Roo in Action chapter 12
  - This presentation
- Experiment with advanced add-ons (ones that manipulate the project configuration or Aspects
    - addon-jms, addon-email, addon-equals

Read the Source Code!!

- https://github.org/springsource/spring-roo
- All Roo features are Roo add-ons

Get involved!

- Build an add-on
- Host it on github and ask developers to use **osgi start**
- Test existing add-ons, report broken ones to the Roo team
- If adventurous, use public Nexus, Google Code, CloudBees, other foundries and host an OBR

Q&A & Resources

- Of course, Roo in Action (chapters 11 & 12)
- Slides available on ETE 2012 website
- Manning Roo in Action forum (manning.com/springrooinaction)
- Springsource Roo forum at forum.springsource.org
- @RooInAction, @krimple, @SpringRoo
- Chariot blogs (blog.chariotsolutions.com) and my Roo bloggings at rimple.com
- Spring Roo podcast (coming soon)