Dropwizard & Spring

The perfect Java REST server stack

Jacek Furmankiewicz
Enterprise Architect
PROS, Houston, TX

Dropwizard

What is it and why is it so exciting?

Dropwizard

Created by Coda Hale @ Yammer

http://dropwizard.codahale.com

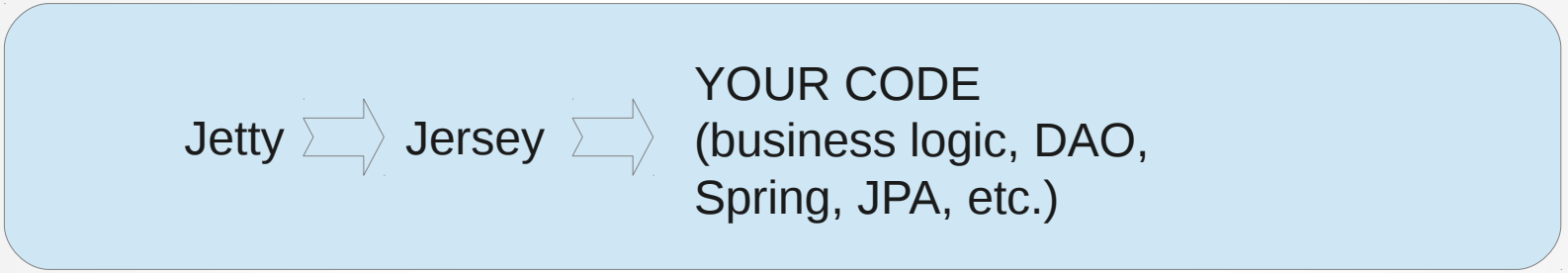
Best-of-breed Java libraries

- Embedded Jetty (no WAR, no deployment to external servlet container)
- JAX-RS (Jersey)
- JSON (Jackson)
- Logging (Logback / SLF4J)
- SLA Tracking (Metrics)
- Hibernate Validators
- Joda Time
- Google Guava
- etc.

Embedded Jetty

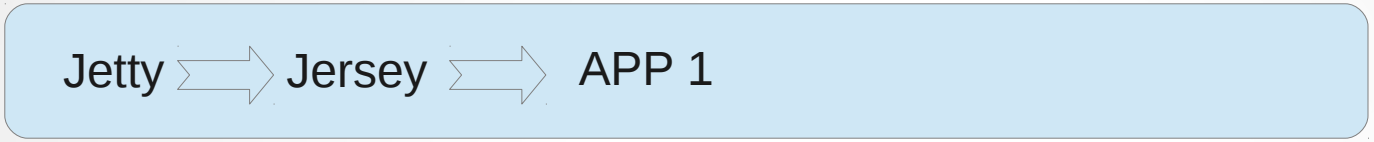
- Restart your code in seconds
- No WAR to recompile
- No WAR to redeploy
- Debug from your IDE (you have a *main()*), no need to attach to separate process
- No need to share heap and GC issues with other apps running in the same servlet container
- Total process isolation (one mis-behaving WAR cannot affect others as much)

Anatomy of a Dropwizard app



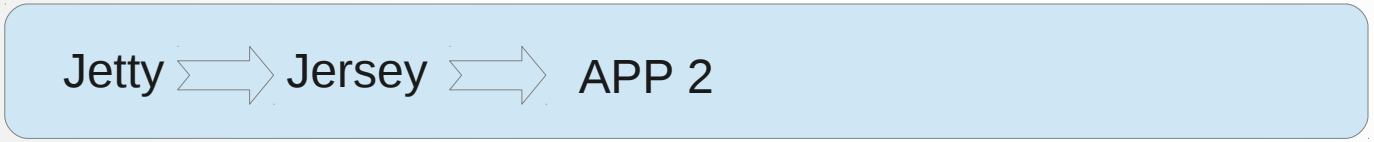
Multiple apps on same box

pid 1843



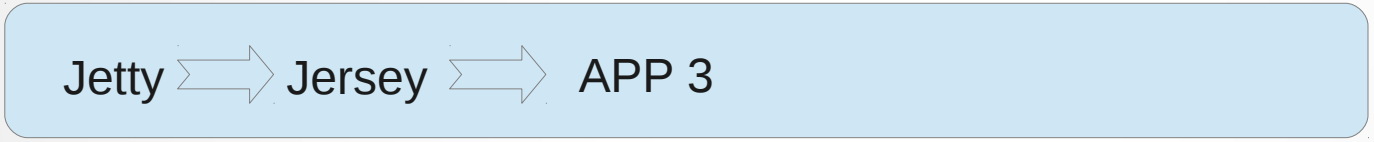
Own JVM
4 GB heap

pid 1407



Own JVM
4 GB heap

pid 1976



Own JVM
4 GB heap

etc.

Operations-friendly

- Opens 2 HTTP ports: one for public APIs (i.e. your REST services), one for admin APIs (e.g. run GC, refresh internal caches, etc)
- Admin port can be closed off on the firewall and inaccessible to outside world
- Health Check APIs to allow easy monitoring from external tools like Nagios
- @Timed annotation on any single REST API allows to track its SLA using Metrics library

Ease of deployment

- Dropwizard apps can be easily compiled into a single JAR with all dependencies (e.g. using One-Jar)
- Your entire app consists of two files: the YAML config + single JAR
- Trivial to run from command line:

java -server -jar myapp.jar server myapp.yml

Ease of deployment (part 2)

- Can be wrapped in an RPM or DEB to install on Linux clusters
- Can be registered as a Linux daemon, e.g.

sudo service myapp start
sudo service myapp stop

Dropwizard and Spring

Adding dependency injection

Spring DI

- Create Spring context first and wire all your components
- Query the Spring context and pull out all the parts Dropwizard cares about: JAX-RS resource classes, JAX-RS @Provider classes, Dropwizard HealthCheck and Task classes, etc.
- Register each of them with the Dropwizard runtime

Spring DI (part 2)

- Link the embedded Jetty with the Spring context, which makes it think it is running within a regular servlet container

environment.addServletListeners(new SpringContextLoaderListener(springContext));

Spring DI (part 3)

See the example application on github:

- https://github.com/jacek99/dropwizard-spring-di-security-onejar-example

Dropwizard and Spring

Adding Spring Security

Spring Security

- Add a Spring Security XML config file to your context @Configuration class, e.g.

```
@Configuration
@ImportResource("classpath:myapp-security.xml")
@ComponentScan(basePackageClasses = MyAppSpringConfiguration.class)
public class MyAppSpringConfiguration {}
```

Spring Security (part 2)

- Activate the Spring Security filter

```
environment
.addFilter(DelegatingFilterProxy.class,"/*")
.setName("springSecurityFilterChain");
```

Spring Security (part 3)

- Unlike the rest of Spring, Spring Security does not support Java @Configuration yet, hence an XML file is required.
- This should be the ONLY XML file you should need to integrate Spring.
- Everything else in Spring can be done via pure Java @Configuration classes

Dropwizard & Spring

Q&A

Jacek Furmankiewicz
Enterprise Architect
PROS, Houston, TX