The Polyglot Future of JBoss AS

Toby Crawley
Red Hat, Inc.

JBoss Community

The Polyglot ~~Future~~ Present of JBoss AS

Toby Crawley
Red Hat, Inc.

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Yours Truly

- Senior SW Engineer at Red Hat
- Core developer on TorqueBox & Immutant
- Member of Project:Odd
- @tcrawley

Agenda

- intro
- JBoss AS
- JRuby & TorqueBox
- Clojure & Immutant
- crap, a demo
- outro

JBoss **Application Server 7**

JBoss AS 7

- Low memory footprint
- Modularized class loader isolation
- Fast startup time
- Performant
- EE6

“Java is a **DSL** for taking large **XML** files and converting them to **stack traces**”

Scott Bellware

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Goal

Leverage the AS as a platform to reduce some of the accidental complexity of your deployment environment and allow you to use the best tool for the job.

Goal

To make you more productive.

Goal

To make you happy.

Circus

Ruby

- Expressive
- Dynamic typing
- Less ceremony
- Makes you feel more cleverer

```
Set<Person> people = new HashSet<Person>();

for ( Team each : teams ) {
  people.addAll( each.getMembers() );
}

for ( Person each : people ) {
  each.promote();
}
```

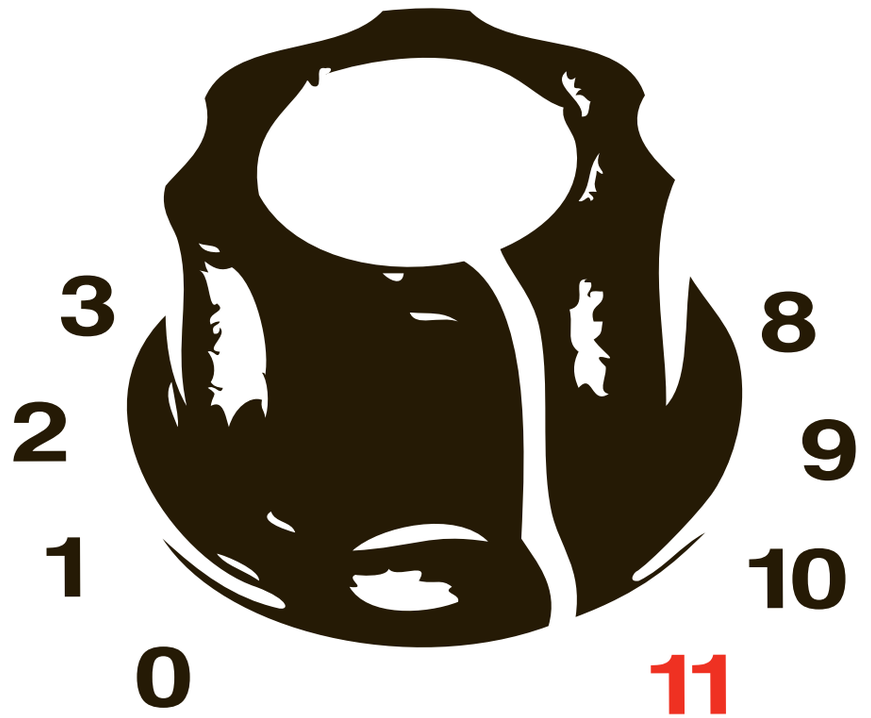
```
teams.
  collect(&:members).
  flatten.uniq.each(&:promote!)
```

JRuby

- Real threads
- Simple access to Java
- Fastest Ruby implementation

```
require 'java'

bar = org.projectodd.foo.Bar.new
bar.a_value = 42
bar.bazerize
```



TorqueBox

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TorqueBox is an Application Server for Ruby built on top of JBoss AS7

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Ruby APIs / Programming Models

Sinatra
Rails
Rack
WebSockets STOMP
Daemons
Message Processors
Jobs
Tasks

Polyglot Injection

Java APIs / Programming Models

POJO
REST
Servlet
Spring
JMS
JavaEE

JRuby Component Deployers & Gems

Messaging
Cache
Transactions
Security

TorqueBox Core

Java Enterprise Services

JBoss Web
Infinispan
HornetQ
Quartz
PicketLink

JRuby with JIT

Managed Services Container

Java Virtual Machine

Web

Supports any Rack framework (Rails, Sinata, Padrino, etc). Requests come in, responses go out. Works like you would expect...

Web

...but no war required. Just point TorqueBox at the application root.

Scheduled Jobs

Simple cron-like scheduling that shares your application's lifecycle.

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Scheduled Jobs

```
class TPSReportJob

  def run
    # work happens here
  end

end
```

Scheduled Jobs

```
TorqueBox.configure do

  job TPSReportJob,
      :cron => '0 */5 * * * ?'

end
```

Backgroundable

Asynchronous execution with a simple api.

Shares your application's lifecycle.

Backgroundable

```
include TorqueBox::Messaging

class User
   include Backgroundable

  always_background :send_welcome

   def send_welcome
     # slow email process
   end

end
```

Messaging

Layered on top of JMS and HornetQ. Useful for decoupling or polyglot interop.

Messaging

```
queue = inject( '/queue/morris_day' )

queue.publish( Time.now )

puts queue.receive

# Fri Dec 2 16:44:22 -0500 2011
```

Messaging

```
include TorqueBox::Messaging

class TheTime < MessageProcessor

  def on_message(body)
    # What time is it?!?
    puts body
  end

end
```

Messaging

```
TorqueBox.configure do

  queue '/queue/morris_day' do
    processor TheTime
  end

end
```

Services

Long running daemons that share the application's lifecycle.

Injection

aka Inversion of Control. Telling the container what you need and letting it wire things up.

Distributed Transactions

True multi-resource distributed transactions.

Things I Skipped

- Built-in WebSockets
- Simple clustering
- Key/Value store via Infinispan (Caching)


Clojure

Clojure

- Modern Lisp for the JVM
- Functional
- Immutable data
- Concise syntax
- Nice Java integration

```
Set<Person> people = new HashSet<Person>();

for ( Team each : teams ) {
  people.addAll( each.getMembers() );
}

for ( Person each : people ) {
  each.promote();
}
```

```
(map promote!
     (set (extract :members teams)))
```

```
(def extract mapcat)

(map promote!
     (set (extract :members teams)))
```

```
(doto
  (org.projectodd.foo.Bar.)
  (.setAValue 42)
  (.bazerize))
```

Immutant

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Immutant is an Application Server for Clojure being built on top of JBoss AS7

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Web

Supports Ring handlers. Works like you would expect. Requests come in, responses go out. Endpoints can be created dynamically.

Web

```
(require '[immutant.web :as web])

(defn my-ring-handler [request]
  ;; process request here)

(web/start "/" my-ring-handler)
...
(web/stop "/")
```

Messaging

Layered on top of JMS and HornetQ. Useful for decoupling or polyglot interop.

Messaging

```
(require
  '[immutant.messaging :as msg])

(def q "/queue/morris_day")

(msg/start q)

(msg/publish q (Date.))

(println (msg/receive q))

; #<Date Fri Dec 2 16:54:56 EST 2011>
```

Messaging

```
(msg/listen "/queue/morris_day"
  (fn [body]
    ;; What time is it?!?
    (println body)))
```

Daemons

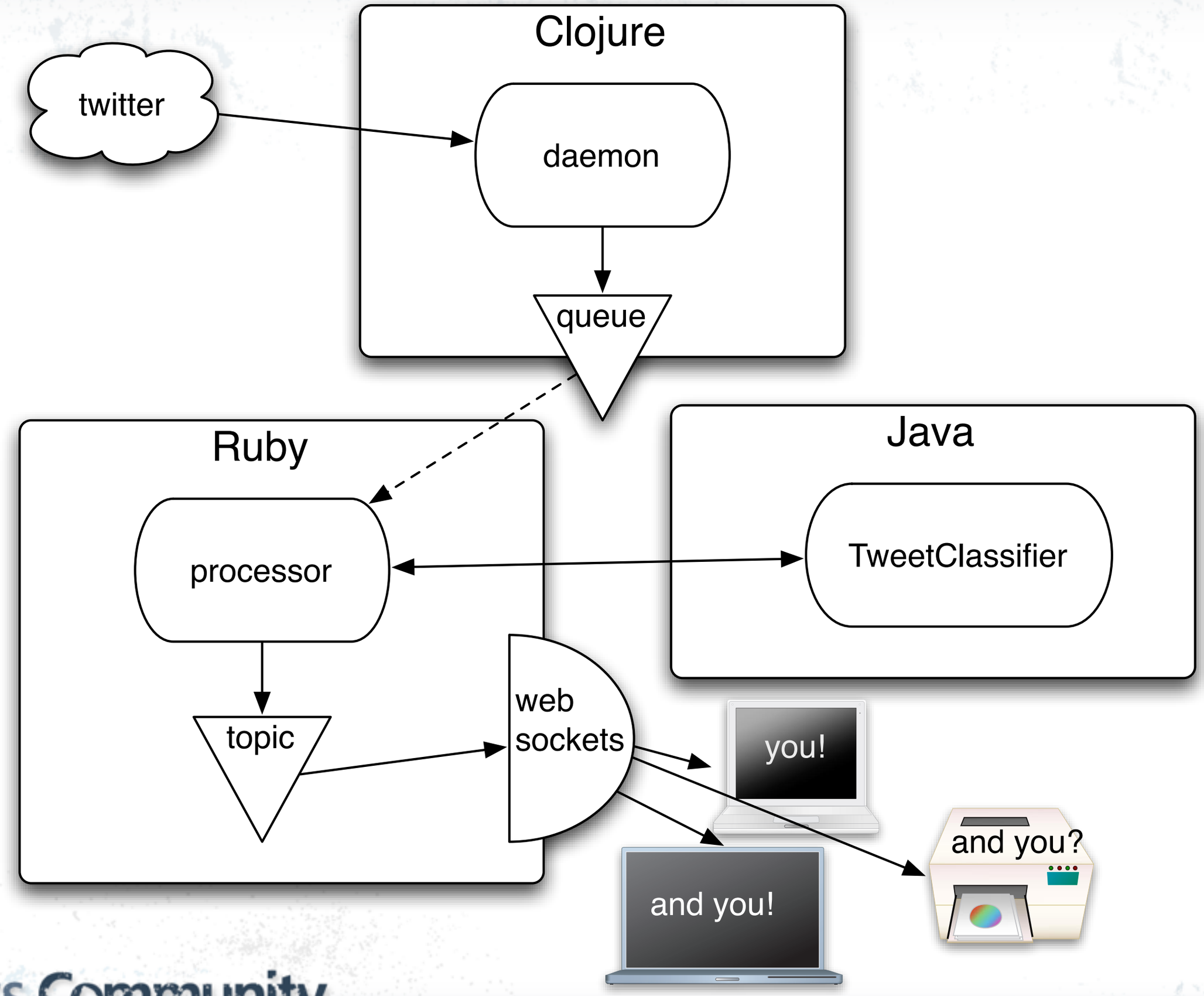
Long running daemons that share the application's lifecycle.

Coming Soon

- Scheduled Jobs
- Distributed futures
- Distributed state
- Multi-resource transactions
- Injection
- You tell us!

http://www.flickr.com/photos/-lucaslove/5084345964/

http://www.flickr.com/photos/jdgoring/179412740/


Clojure
twitter
daemon
queue
Ruby
processor
topic
web
sockets
Java
TweetClassifier
you!
and you!
and you?

Language	LOC
Ruby	~110
Clojure	~50
Java	~30
Javascript	~25

Availability

- TorqueBox: 2.0.0.beta1 released today
- Immutant: incremental builds available

Availability

- TorqueBox: 2.0.0.beta1 released ~~today~~ Monday
- Immutant: incremental builds available

http://www.flickr.com/photos/daveynin/4194763701/

Resources

- http://torquebox.org
- #torquebox on freenode
- @torquebox
- http://immutant.org
- #immutant on freenode
- @immutants

http://www.flickr.com/photos/thaths/3760407774/