Presenting...

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Outline

What is TorqueBox?

Polyglot Revolution

TorqueBox

How to use TorqueBox?

Features

Installation and setup: RVM, JRuby, TorqueBox

Deployment

Features contd.

How to begin hacking TorqueBox?

JBoss Polyglot

TorqueBox

What is TorqueBox?

Before that lets talk about Polyglot Revolution

Polyglot Revolution

JVM is what makes the Polyglot Revolution.

Polyglot Revolution cont.

It becomes even more useful in enterprise software, where the projects involve multiple technologies. As a part of Polyglot Revolution there are a bunch of projects in different languages:

TorqueBox (Ruby)

Immutant (Clojure)

Blacktie (C++)

Erjang (Erlang)

back to TorqueBox

Started in 2009 by Bob McWhirter @bobmcwhirter
A complete Ruby Application Server
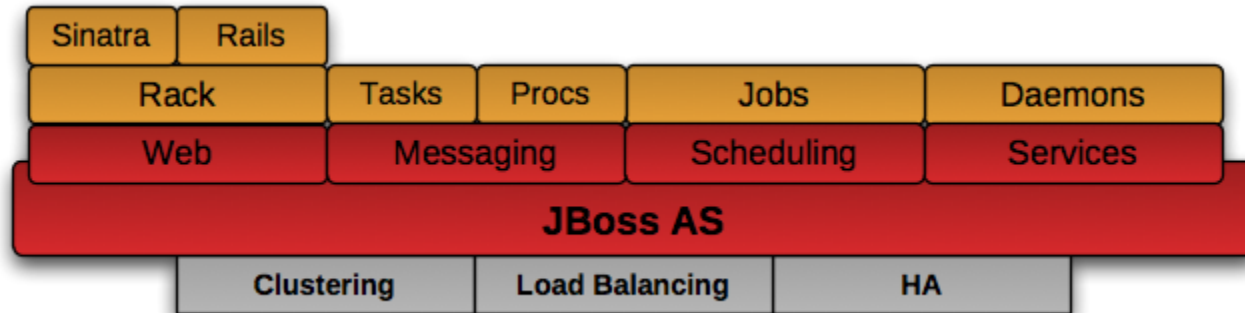**Why?**

Productivity

Power and stability of Java Middleware

Scale on demand

TorqueBox contd.

Sinatra	Rails			
Rack	Tasks	Procs	Jobs	Daemons
Web	Messaging		Scheduling	Services

JBoss AS

Clustering	Load Balancing	HA

Built on

JRuby / Ruby

JBoss AS

Enterprise Java (EJB, JMS, Caching etc.)

Provides

Messaging

Jobs

Caching

Services

Clustering

TorqueBox howto?
Installation

Ruby, RVM and JRuby

```
1 yum install -y ruby rubygem-rvm
2 rvm-install
3 [[ -s "$HOME/.rvm/scripts/rvm" ]] && . "$HOME/.rvm/scripts/rvm"
4 rvm install jruby-1.6.5
5 rvm use jruby-1.6.5
```

TorqueBox (prerelease/latest version)

```
1 gem install --pre torquebox
2 gem install --pre torquebox-messaging-container
3 gem install --pre torquebox-naming-container
4 gem install --pre torquebox-capistrano-support
5 gem install --pre torquebox-rake-support
6 gem install --pre torquebox-vfs
7 jruby -J-Xmx1024m -w -S \
8   gem install --pre torquebox-server \
9   --source http://torquebox.org/2x/builds/LATEST/gem-repo
```

TorqueBox howto?

Installation contd.

Rails (latest version)

```
1 gem install rails
2 gem install bundler
```

Some caveats

JDBC Drivers for ActiveRecord

```
1 gem install activerecord-jdbcsqlite3-adapter
2 gem install activerecord-jdbcmysql-adapter
```

TorqueBox howto?
Create a new Rails application

```
1 rails new rails-app
2 cd rails-app
3 bundle install
4 rails g scaffold Person name:string
5 rake db:migrate
```

and deploy!

```
1 torquebox run
2 torquebox deploy /path/to/rails-app
```

Feature: Messaging (via HornetQ JMS)

Sending Messages:

```
1 timer_queue = TorqueBox::Messaging::Queue.new('/queues/timer')
2 timer_queue.publish "Some Message"
3 topic1 = TorqueBox::Messaging::Topic.new('/topics/topic1')
4 topic1.publish "Some Topic"
```

Processing Messages:

Create a Message class

```
1 include TorqueBox::Messaging
2 class MyMessageHandler < MessageProcessor
3   def on_message(body)
4     # process the message
5   end
6 end
```

Add queue/topic to config/torquebox.yml

```
1 queues:
2   /queues/timer:
3 topics:
4   /topics/topic1:
5
```

```
 6 messaging:
 7   /queues/timer:
 8     MyMessageHandler:
 9       concurrency: 5
10   /topics/topic1:
11     Topic1Handler
```

Feature: Jobs

Jobs (Backgroundable):

include TorqueBox::Messaging::Backgroundable to any Ruby class

```
1 class LuceneIndexJob
2   include TorqueBox::Messaging::Backgroundable
3   def do_index
4     # very long running job
5   end
6 end
```

get the future (optionally store it in a serialized format somewhere)

```
1 indexer = LuceneIndexJob.new
2 future = indexer.background.do_index
3 future.started?
4 future.complete?
5 future.error?
6 future.status
7 # store future object for later retrieval ( maybe in database )
```

Feature: Jobs contd.

Scheduled Jobs:

Create a class with run() method

```
1 class MonthlyBirthdayEmailer
2   def run
3     # some long task here
4   end
5 end
```

Add entry on config/torquebox.yml with crontab(5) like time specification

```
1 jobs:
2   monthly_birthday_notifications:
3     description: first of month
4     job: MonthlyBirthdayEmailer
5     cron: '0 0 0 1 * ?'
```

Feature: Caching

Caching (via Infinispan):

Add gem 'torquebox-cache' to Gemfile

```
1 gem 'torquebox-cache'
```

update application.rb to use torquebox cache

```
1 class Application < Rails::Application
2   config.cache_store = :torque_box_store
3 end
```

access the cache

```
 1 require 'torquebox-cache'
 2 cache = TorqueBox::Infinispan::Cache.new( :name => 'treasure',
 3   :persist=>'/data/treasure' )
 4 # Put some stuff in the cache
 5 cache.put('akey', "a string value" )
 6 cache.put("time", Time.now )
 7 cache.put(user.id, user )
 8 # Get it back again
 9 time = cache.get( "time" )
10 user = cache.get( params[:id] )
```

Feature: Services

Crete a class with initialize, start and stop methods

```
 1  class TimeService
 2    def initialize(opts)
 3      puts "Queue Name: #{opts['queue']}"
 4      @queue=TorqueBox::Messaging::Queue.new(opts['queue'])
 5    end
 6    def start
 7      Thread.new{run}
 8    end
 9    def stop
10      @done=true
11    end
12    def run
13      until @done
14        @queue.publish(Time.now)
15        sleep(1)
16      end
17    end
18  end
```

Add service to application configuration file

```
1 services:
2   TimeMachine:
3     config:
4       queue: /queue/time
```
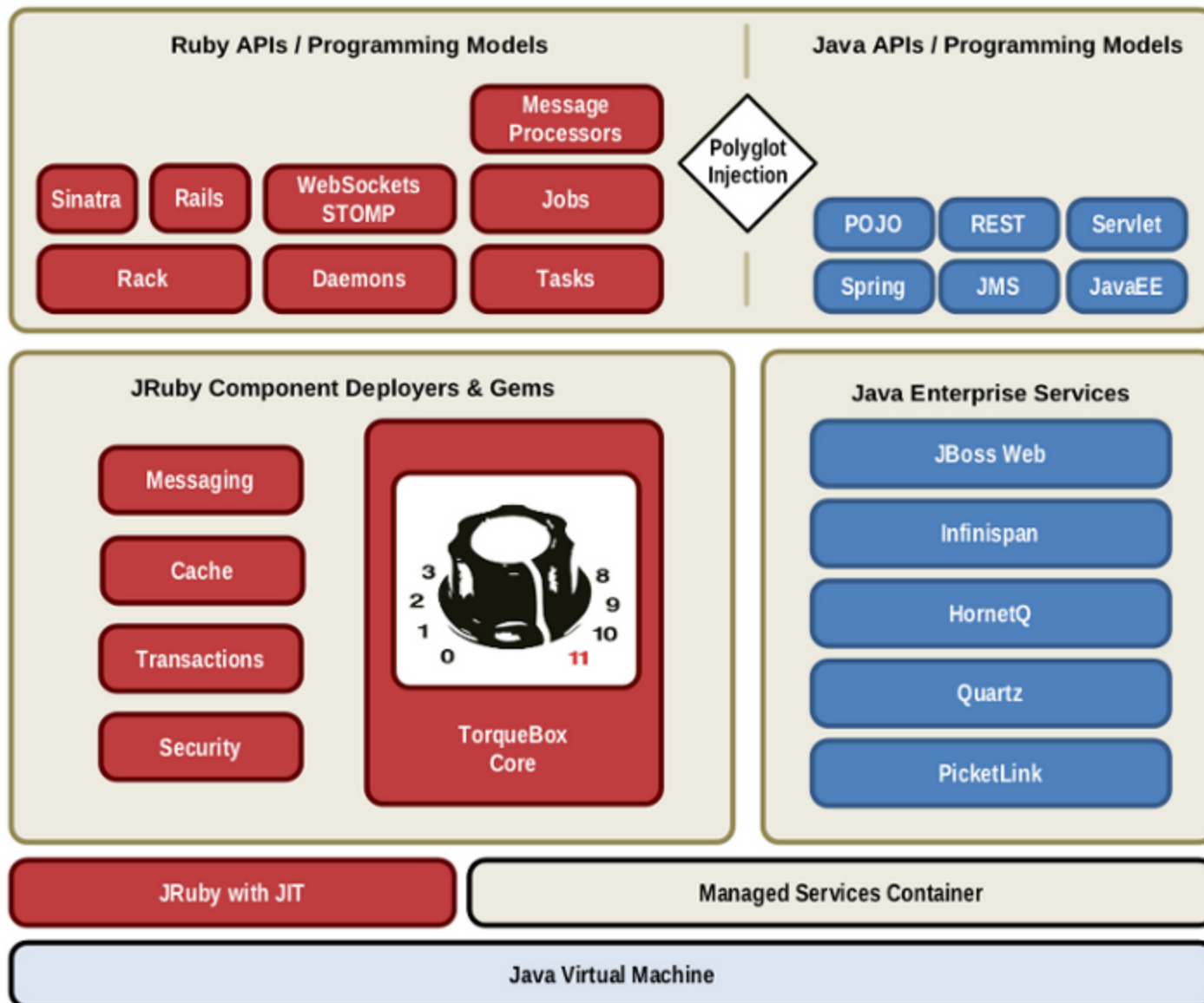
Feature: Clustering

Clustering:

torquebox run --clustered

clustered deployment
clustered cache
shared web sessions etc.

High Availability Singleton Services

```
1 $JBOSS_HOME/bin/standalone.sh --server-config=standalone-ha.xml
2 mark the service as singleon: true in the configuration file
```

Hacking TorqueBox

Hacking TorqueBox contd.

JBoss-Polyglot

github.com/projectodd/jboss-polyglot

TorqueBox

github.com/torquebox/torquebox

Summary

Built on Ruby / JRuby, TorqueBox is well suited for rapid application development in the settings where Enterprise Java Applications are already in place.
TorqueBox Provides these features out of the box, without any hassle:

Messaging, Jobs, Caching, Services and Clustering

TorqueBox / JRuby gotchas:

TorqueBox gives you real threads but many existing Ruby libraries suck with multi threading.

Can invoke Java

Does Real Threading

FFI support

Native C extensions written for MRI Ruby dont work

Native gems are not supported, except FFI.

Questions?

IRC: #torquebox on FreeNode Web: torquebox.org

Thanks

References

When Two Worlds Collide: Java and Ruby in the Enterprise talk Presentation TorqueBox Immutant JBoss Blacktie Erjang TypeSafe: The Polyglot Revolution continues apace Scala the statically typed dynamic language Calling Java from JRuby ActiveRecord-JDBC Database Support Using RVM with TorqueBox Cuvic On Demand JRuby vs Ruby Installing TorqueBox 2.0 Rails on TorqueBox Sinatra on TorqueBox Long Running Services in TorqueBox Latency / Throughput CPU / Memory JVM Languages JVM Understand RVM Install RVM on Fedora JRuby on Rails with RVM (on Fedora) Quartz - CronTrigger Tutorial