

Building Web Apps in Ratpack

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A toolkit for JVM web applications

About Me



Object Partners



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Welcome to Ratpack

- Inspired by Ruby's Sinatra Framework
- Built on Netty
- Written in Java, Optimized for Groovy
 - Also, Java 7 & Java 8
- Totally unopinionated framework
- Optional Google Guice integration
- Optional Gradle integration
- Rapid development with SpringLoaded



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When to use Ratpack?

- Micro-services
 - Supporting Single-Page Applications
- High-throughput apps
- Lightweight apps
 - No Container!
- Cloud Deployments
 - Simple packaging strategy
- Mock Services in Test?



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Quick Intro to Ratpack

- Runnable from a Groovy script!

```
@GrabResolver("http://oss.jfrog.org/artifactory/libs-snapshot")
@Grab("org.ratpack-framework:ratpack-groovy:0.9.0-SNAPSHOT")
import static org.ratpackframework.groovy.RatpackScript.ratpack

ratpack {
  handlers {
    get {
      response.send "Hello world!"
    }
  }
}
```



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Quick Intro to Ratpack

- Simple Groovy DSL for Handler chain

```
1 @GrabResolver("http://oss.jfrog.org/artifactory/libs-snapshot")
2 @Grab("org.ratpack-framework:ratpack-groovy:0.9.0-SNAPSHOT")
3 import static org.ratpackframework.groovy.RatpackScript.ratpack
4
5 ratpack {
6   handlers {
7     handler {
8       if (request.path.empty)
9         response.headers.set "X-UA-Compatible", "IE=edge,chrome=1"
10      next()
11    }
12    get {
13      response.send "text/html",
14        "<!DOCTYPE html><html><head></head><body><h1>Hello, Groovy MN!</h1></body></html>"
15    }
16    post("api") {
17      response.send "text/html", "you sent me a post"
18    }
19    assets "public", [] as String[]
20  }
21 }
```



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Quick Intro to Ratpack

- Support for prefixed endpoints

```
1 @GrabResolver("http://oss.jfrog.org/artifactory/libs-snapshot")
2 @Grab("org.ratpack-framework:ratpack-groovy:0.9.0-SNAPSHOT")
3 import static org.ratpackframework.groovy.RatpackScript.ratpack
4
5 ratpack {
6   handlers {
7     handler {
8       if (request.path.empty)
9         response.headers.set "X-UA-Compatible", "IE=edge,chrome=1"
10      next()
11    }
12    get {
13      response.send "text/html",
14        "<!DOCTYPE html><html><head></head><body><h1>Hello, Groovy MN!</h1></body></html>"
15    }
16    prefix("api") {
17      handler {
18        if (request.method.put) {
19          response.send "text/html", "you put me"
20        } else {
21          next()
22        }
23      }
24      post {
25        response.send "text/html", "you posted me"
26      }
27    }
28    assets "public", [] as String[]
29  }
30 }
```



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Quick Intro to Ratpack

- Handling content-type

```
1 @GrabResolver("http://oss.jfrog.org/artifactory/libs-snapshot")
2 @Grab("org.ratpack-framework:ratpack-groovy:0.9.0-SNAPSHOT")
3 import static org.ratpackframework.groovy.RatpackScript.ratpack
4 import static groovy.json.JsonOutput.toJson
5 import groovy.xml.MarkupBuilder
6 ratpack {
7     handlers {
8         get {
9             respond byContent
10             .plainText { response.send "You wanted it? You got it!" }
11             .json { response.send toJson([msg: "You want JSON? Here!"]) }
12             .xml {
13                 def sw = new StringWriter()
14                 new MarkupBuilder(sw).with {
15                     b -> b.ratpack { msg "You want XML? Here!" } }
16                 response.send sw.toString()
17             }
18         }
19     }
20 }
```




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More Complex Needs...

- Gradle

```
1 apply plugin: "ratpack-groovy"
2
3 buildscript {
4     repositories {
5         maven { url "http://oss.jfrog.org/repo" }
6         mavenCentral()
7     }
8     dependencies {
9         classpath 'org.ratpack-framework:ratpack-gradle:0.9.0-SNAPSHOT'
10    }
11 }
12
13 repositories {
14     maven { url "http://oss.jfrog.org/repo" }
15     mavenCentral()
16     maven { url "http://repo.springsource.org/repo" } // for springloaded
17 }
18
19
20 configurations.all {
21     resolutionStrategy.cacheChangingModulesFor 0, 'seconds'
22 }
23
24 dependencies {
25     springloaded "org.springsource.springloaded:springloaded-core:1.1.1"
26 }
```



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More Complex Needs...

- Dependency Injection

```
8   ratpack {
9     modules {
10      register new AppModule()
11    }
12    handlers { MessageResolver resolver ->
13      get {
14        respond byContent
15          .plainText { response.send resolver.plain }
16          .json { response.send toJson([msg: resolver.json]) }
17          .xml {
18            def sw = new StringWriter()
19            new MarkupBuilder(sw).with {
20              b -> b.ratpack { msg resolver.xml }
21            }
22            response.send sw.toString()
23          }
24          .html {
25            next()
26          }
27        }
28      assets "public", "index.html"
29    }
30  }
```



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More Complex Needs...

- Modules

```
9 class AppModule extends AbstractModule {
10     @Override
11     protected void configure() {
12         bind(MessageResolver).toInstance(
13             new MessageResolver(
14                 new Properties().with {
15                     load this.class.getResourceAsStream("/messages.properties")
16                     it
17                 }
18             )
19         )
20     }
21 }
```



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Getting all Dynamic...

- Templates

```
1 import static org.ratpackframework.groovy.RatpackScript.ratpack
2 import static org.ratpackframework.groovy.Template.groovyTemplate
3
4 ratpack {
5     handlers {
6         get {
7             render groovyTemplate("welcome.html", event: System.getProperty("event", "Groovy MN"))
8         }
9     }
10 }
```

```
1 <!DOCTYPE html>
2 <html>
3 <head>
4 </head>
5 <body>
6
7 <!-- This is how you render model content -->
8 <h1>Welcome to <%= model.event %>! (rendered)</h1>
9
10 <!-- You can still use Groovy closures! -->
11 <span style="display:none">${ false ?: 'hi' }</span>
12
13
14 </body>
15 </html>
```



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Getting all Dynamic...

- Templates

```
1 import static org.ratpackframework.groovy.RatpackScript.ratpack
2 import static org.ratpackframework.groovy.Template.groovyTemplate
3
4 ratpack {
5     handlers {
6         get {
7             render groovyTemplate("welcome.html", event: System.getProperty("event", "Groovy MN"))
8         }
9     }
10 }
```

```
1 <!DOCTYPE html>
2 <html>
3 <head>
4 </head>
5 <body>
6
7 <!-- This is how you render model content -->
8 <h1>Welcome to <%= model.event %>! (rendered)</h1>
9
10 <!-- You can still use Groovy closures! -->
11 <span style="display:none">${ false ?: 'hi' }</span>
12
13
14 </body>
15 </html>
```



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Getting all Dynamic...

- Handlebars Template Support!

```
7 ratpack {
8   modules {
9     register new HandlebarsModule()
10  }
11
12  handlers {
13    get {
14      render groovyTemplate("welcome.html", event: System.getProperty("event", "Groovy MN"))
15    }
16
17    prefix("handlebars") {
18      get {
19        render handlebarsTemplate("simple.html", [foo: "bar", baz: "bleh"])
20      }
21    }
22  }
23 }
```

```
1 <!DOCTYPE html>
2 <html>
3 <body>
4
5   {{#each this}}
6     <h1>{{@key}}</h1> ==> {{this}}
7     <br/>
8   {{/each}}
9
10 </body>
11 </html>
```

```
1 <!DOCTYPE html>
2 <html>
3 <body>
4
5     <h1>foo</h1> ==> bar
6     <br/>
7
8     <h1>baz</h1> ==> bleh
9     <br/>
10
11
12
13 </body>
14 </html>
```



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Accessing Parameters

- `request.queryParams`

```
1  import static org.ratpackframework.groovy.RatpackScript.ratpack
2
3  ratpack {
4      handlers {
5          get {
6              def name = request.queryParams.name ?: "GroovyMN"
7              response.send "Hello, $name!"
8          }
9      }
10 }
11
```



localhost:5050

Hello, GroovyMN!



localhost:5050/?name=Dan

Hello, Dan!



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Accessing Parameters

- `context.pathTokens`

```
1 import static org.ratpackframework.groovy.RatpackScript.ratpack
2
3 ratpack {
4   handlers {
5     get("event/:name?") {
6       def name = pathTokens.name ?: "GroovyMN"
7       response.send "Hello, $name!"
8     }
9   }
10 }
```



localhost:5050/event/

Hello, GroovyMN!



localhost:5050/event/Dan

Hello, Dan!



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Modularizing Handlers

- MongoDBAssetHandler example

```
6  ratpack {
7    modules {
8      register new AppModule()
9    }
10   handlers { MongoDBAssetHandler mongoAssetHandler ->
11     get("event/:name?") {
12       def name = pathTokens.name ?: "GroovyMN"
13       response.send "Hello, $name!"
14     }
15   }
16   handler mongoAssetHandler
17 }
18
19 }
```





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Building Ratpack

- `gradle installApp`

```
danielwoods ~/Documents/Workspace/groovymn/ratpack/demo7 $ gradle installApp
The groovy configuration has been deprecated and is scheduled to be removed in Gradle 2.0.
pile'. In some cases, it may be necessary to additionally configure the 'groovyClasspath' p
:compileJava UP-TO-DATE
:compileGroovy UP-TO-DATE
:processResources UP-TO-DATE
:classes UP-TO-DATE
:jar UP-TO-DATE
:startScripts UP-TO-DATE
:installApp UP-TO-DATE

BUILD SUCCESSFUL
11:52 AM 3...
Total time: 7.161 secs
danielwoods ~/Documents/Workspace/groovymn/ratpack/demo7 $ ls build/install/demo7/
app      bin      lib
danielwoods ~/Documents/Workspace/groovymn/ratpack/demo7 $
```



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Packaging Ratpack

- `gradle distZip`

```
danielwoods ~/Documents/Workspace/groovymn/ratpack/demo7 $ gradle distZip
```

The groovy configuration has been deprecated and is scheduled to be removed in Gradle 2.0. Typically
pile'. In some cases, it may be necessary to additionally configure the 'groovyClasspath' property o

```
:compileJava UP-TO-DATE
```

```
:compileGroovy UP-TO-DATE
```

```
:processResources UP-TO-DATE
```

```
:classes UP-TO-DATE
```

```
:jar UP-TO-DATE
```

```
:startScripts UP-TO-DATE
```

```
:distZip UP-TO-DATE
```

BUILD SUCCESSFUL

Total time: 6.144 secs

```
danielwoods ~/Documents/Workspace/groovymn/ratpack/demo7 $ ls -ltr build/distributions/
```

```
total 21632
```

```
-rw-r--r--  1 danielwoods  staff  11075185 Oct  8 11:57 demo7.zip
```

```
danielwoods ~/Documents/Workspace/groovymn/ratpack/demo7 $
```



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Deploying Ratpack

- Heroku
- Step 0 – Add the Gradle Wrapper to your Project

```
danielwoods ~/Documents/Workspace/groovymn/ratpack/demo7 $ gradle wrapper
The groovy configuration has been deprecated and is scheduled to be removed
in Gradle 5.0. In some cases, it may be necessary to additionally configure the 'gradle
wrapper' task.
```

```
BUILD SUCCESSFUL
```

```
Total time: 5.069 secs
```

```
danielwoods ~/Documents/Workspace/groovymn/ratpack/demo7 $ ls
```

build	demo7.iml	demo7.iws	gradlew	out
build.gradle	demo7.ipr	gradle	gradlew.bat	src

```
danielwoods ~/Documents/Workspace/groovymn/ratpack/demo7 $
```



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Deploying Ratpack

- Heroku
- Step 0.1 – Add a `settings.gradle` file to your Project
 - Setting the `rootProject.name = 'demo'` will allow the buildpack to work properly.

```
danielwoods ~/Documents/Workspace/groovymn/ratpack/demo7 (master)$ cat settings.gradle
rootProject.name = 'demo'
danielwoods ~/Documents/Workspace/groovymn/ratpack/demo7 (master)$
```



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Deploying Ratpack

- Heroku
- Step 1 — Authenticate on Terminal

```
danielwoods ~/Documents/Workspace/groovymn/ratpack/demo7 $ heroku auth:login
Enter your Heroku credentials.
Email: daniel.p.woods@gmail.com
Password (typing will be hidden):
Authentication successful.
danielwoods ~/Documents/Workspace/groovymn/ratpack/demo7 $
```

Getting to know Heroku

To learn more about Heroku, find langu



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Deploying Ratpack

- Heroku
- Step 2 – Create your app with Heroku

```
danielwoods ~/Documents/Workspace/groovymn/ratpack/demo7 $ heroku create groovymn
Creating groovymn... done, stack is cedar
http://groovymn.herokuapp.com/ | git@heroku.com:groovymn.git
danielwoods ~/Documents/Workspace/groovymn/ratpack/demo7 $
```



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Deploying Ratpack

- Heroku
- Step 3 – Configure the buildpack

```
danielwoods ~/Documents/Workspace/groovymn/ratpack/demo7 $ heroku config:set \
> BUILDPACK_URL=https://github.com/danveloper/ratpack-heroku-inline-buildpack.git \
> --app groovymn
Setting config vars and restarting groovymn... done, v3
BUILDPACK_URL: https://github.com/danveloper/ratpack-heroku-inline-buildpack.git
danielwoods ~/Documents/Workspace/groovymn/ratpack/demo7 $
```




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Deploying Ratpack

- Heroku
- Step 4.0 – `git init` (if you haven't already)
- Step 4.1 – add Heroku app's remote git endpoint
- Step 4.2 – `git push -u heroku master`

```
groovymn/ratpack/demo7 (master)$ git remote add heroku git@heroku.com:groovymn.git
groovymn/ratpack/demo7 (master)$ git commit -a -m "wip commit"
```

```
deletion(-)
```

```
groovymn/ratpack/demo7 (master)$ git push -u heroku master
```

```
reads.
one.
```



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Deploying Ratpack

- Heroku
- Step 5 – Visit App

```
Total time: 12.554 secs
-----> Discovering process types
Procfile declares types          -> (none)
Default types for Gradle Ratpack -> web

-----> Compiled slug size: 65.6MB
-----> Launching... done, v6
http://groovymn.herokuapp.com deployed to Heroku
```

```
To git@heroku.com:groovymn.git
1ed37f2..3e3e7d8 master -> master
Branch master set up to track remote branch master from heroku.
danielwoods ~/Documents/Workspace/groovymn/ratpack/demo7 (master)$
```



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Deploying Ratpack

- Heroku
- Step 5 – Visit App





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Testing Ratpack Apps



Jeff Beck
@beckje01



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Ratpack Resources

- The Ratpack Manual
 - <http://www.ratpack-framework.org/manual/current/>
- Ratpack GitHub (Samples, etc)
 - <https://github.com/ratpack>
- Continuous Integration
 - <http://drone.io>
 - ??? (tweet me!)
- Tomas Lin, Cloud Foundry deployment
 - <http://fbflex.wordpress.com/2013/08/07/ratpack-to-cloudfoundry-with-java-buildpack/>



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The End