In this lecture, we will discuss…

✧ Rack Web Servers
✧ Puma

Rails (Rack) Web Servers

✧ Rack
  - Modular Web Server interface
  - Used by many Ruby-based frameworks, including Rails
✧ Rack-based Web Servers
  - WEBrick
  - Phusion Passenger
  - Thin
  - Unicorn
  - Puma
    - recommended by Heroku
    - your choice for development

Jamess-MacBook-Pro:capstone_demoapp jim$ vi Gemfile

```ruby
 1 #
 2 source 'https://rubygems.org'
 3
 4 gem 'rails', '4.2.6'
 5 gem 'rails-api', '~>0.4', '>=0.4.0'
 6 gem 'rack-cors', '~>0.4', '>=0.4.0', :require => 'rack/cors'
 7
 8 gem 'jbuilder', '~> 2.0', '>=2.6.0'
 9
10 group :development do
11   gem 'spring', '~>2.0', '>=2.0.0'
12 end
13
14 group :development, :test do
15   gem 'tzinfo-data', :platforms=>[:mingw, :mswin, :x64_mingw, :jruby]
16   gem 'httparty', '~>0.14', '>=0.14.0'
17
18   gem 'rspec-rails', '~> 3.5', '>=3.5.2'
19 end
20
21 gem 'puma', '~>3.6', '>=3.6.0' #, :platforms=>:ruby
22 gem 'pg', '~>0.19', '>=0.19.0'
23 gem 'mongoid', '~>5.1', '>=5.1.5'
~
~
~
~
~
~
```

```
Jamess-MacBook-Pro:capstone_demoapp jim$ vi Gemfile
Jamess-MacBook-Pro:capstone_demoapp jim$ bun
```

Jamess-MacBook-Pro:capstone_demoapp jim$ vi config/puma.rb

```ruby
1 workers Integer(ENV['WEB_CONCURRENCY'] || 2)
2 threads_count = Integer(ENV['RAILS_MAX_THREADS'] || 5)
3 threads threads_count, threads_count
4
5 preload_app!
6
7 rackup      DefaultRackup
8 port        ENV['PORT']      || 3000
9 environment ENV['RACK_ENV'] || 'development'
10
11 on_worker_boot do
12   # Worker specific setup for Rails 4.1+
13   # See: https://devcenter.heroku.com/articles/deploying-rails-applications-with-the-puma-web-server#on-work
   er-boot
14   ActiveRecord::Base.establish_connection
15 end
```

```ruby
 1 workers Integer(ENV['WEB_CONCURRENCY'] || 2)
 2 threads_count = Integer(ENV['RAILS_MAX_THREADS'] || 5)
 3 threads threads_count, threads_count
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11 on_worker_boot do
12    # Worker specific setup for Rails 4.1+
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   er-boot
14    ActiveRecord::Base.establish_connection
15 end
```

```
Jamess-MacBook-Pro:capstone_demoapp jim$ rails s
=> Booting Puma
=> Rails 4.2.6 application starting in development on http://localhost:3000
=> Run `rails server -h` for more startup options
=> Ctrl-C to shutdown server
[1935] Puma starting in cluster mode...
[1935] * Version 3.6.0 (ruby 2.2.3-p173), codename: Sleepy Sunday Serenity
[1935] * Min threads: 5, max threads: 5
[1935] * Environment: development
[1935] * Process workers: 2
[1935] * Preloading application
[1935] * Listening on tcp://localhost:3000
[1935] Use Ctrl-C to stop
[1935] - Worker 0 (pid: 1948) booted, phase: 0
[1935] - Worker 1 (pid: 1949) booted, phase: 0
```

```
Z:\proj\fullstack\capstone_demoapp>bundle
Fetching gem metadata from https://rubygems.org/...........
Fetching version metadata from https://rubygems.org/..
Fetching dependency metadata from https://rubygems.org/.
Using rake 11.3.0
Using i18n 0.7.0
Using json 1.8.3
Using minitest 5.9.1
Using thread_safe 0.3.5
Using builder 3.2.2
Using erubis 2.7.0
Using mini_portile2 2.1.0
Using rack 1.6.5
Using mime-types-data 3.2016.0521
Using arel 6.0.3
Using bson 4.1.1
Using concurrent-ruby 1.0.2
Using diff-lcs 1.2.5
Using multi_xml 0.5.5
Using multi_json 1.12.1
Using origin 2.2.2
Using pg 0.19.0
Installing puma 3.6.0 with native extensions
```

```
Using mongo 2.3.1
Using sprockets 3.7.0
Using httparty 0.14.0
Using rspec-core 3.5.4
Using rspec-expectations 3.5.0
Using rspec-mocks 3.5.0
Using activesupport 4.2.6
Using tzinfo-data 1.2016.10
Using loofah 2.0.3
Using mail 2.6.4
Using rails-deprecated_sanitizer 1.0.3
Using globalid 0.3.7
Using activemodel 4.2.6
Using jbuilder 2.6.0
Using spring 2.0.0
Using rails-html-sanitizer 1.0.3
Using rails-dom-testing 1.0.7
Using activejob 4.2.6
Using activerecord 4.2.6
Using mongoid 5.1.5
Using actionview 4.2.6
Using actionpack 4.2.6
Using actionmailer 4.2.6
Using railties 4.2.6
Using sprockets-rails 3.2.0
Using rails-api 0.4.0
Using rspec-rails 3.5.2
Using rails 4.2.6
Bundle complete! 11 Gemfile dependencies, 55 gems now installed.
Use `bundle show [gemname]` to see where a bundled gem is installed.
```

```
Using loofah 2.0.3
Using mail 2.6.4
Using rails-deprecated_sanitizer 1.0.3
Using globalid 0.3.7
Using activemodel 4.2.6
Using jbuilder 2.6.0
Using spring 2.0.0
Using rails-html-sanitizer 1.0.3
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Use `bundle show [gemname]` to see where a bundled gem is installed.

Z:\proj\fullstack\capstone_demoapp>rails s
=> Booting Puma
=> Rails 4.2.6 application starting in development on http://localhost:3000
=> Run `rails server -h` for more startup options
=> Ctrl-C to shutdown server
ERROR: worker mode not supported on JRuby or Windows
Exiting
```

```
Jamess-MacBook-Pro:capstone_demoapp jim$ rails s
=> Booting Puma
=> Rails 4.2.6 application starting in development on http://localhost:3000
=> Run `rails server -h` for more startup options
=> Ctrl-C to shutdown server
[2019] Puma starting in cluster mode...
[2019] * Version 3.6.0 (ruby 2.2.3-p173), codename: Sleepy Sunday Serenity
[2019] * Min threads: 5, max threads: 5
[2019] * Environment: development
[2019] * Process workers: 2
[2019] * Preloading application
[2019] * Listening on tcp://localhost:3000
[2019] Use Ctrl-C to stop
[2019] - Worker 0 (pid: 2032) booted, phase: 0
[2019] - Worker 1 (pid: 2033) booted, phase: 0
```

```
Jamess-MacBook-Pro:capstone_demoapp jim$ vi Gemfile
```

```ruby
 1 #
 2 source 'https://rubygems.org'
 3
 4 gem 'rails', '4.2.6'
 5 gem 'rails-api', '~>0.4', '>=0.4.0'
 6 gem 'rack-cors', '~>0.4', '>=0.4.0', :require => 'rack/cors'
 7
 8 gem 'jbuilder', '~> 2.0', '>=2.6.0'
 9
10 group :development do
11   gem 'spring', '~>2.0', '>=2.0.0'
12 end
13
14 group :development, :test do
15   gem 'tzinfo-data', :platforms=>[:mingw, :mswin, :x64_mingw, :jruby]
16   gem 'httparty', '~>0.14', '>=0.14.0'
17
18   gem 'rspec-rails', '~> 3.5', '>=3.5.2'
19 end
20
21 gem 'puma', '~>3.6', '>=3.6.0' #, :platforms=>:ruby
22 gem 'pg', '~>0.19', '>=0.19.0'
23 gem 'mongoid', '~>5.1', '>=5.1.5'
~
~
~
~
~
~
```

```ruby
1 #
2 source 'https://rubygems.org'
3
4 gem 'rails', '4.2.6'
5 gem 'rails-api', '~>0.4', '>=0.4.0'
6 gem 'rack-cors', '~>0.4', '>=0.4.0', :require => 'rack/cors'
7
8 gem 'jbuilder', '~> 2.0', '>=2.6.0'
9
10 group :development do
11   gem 'spring', '~>2.0', '>=2.0.0'
12 end
13
14 group :development, :test do
15   gem 'tzinfo-data', :platforms=>[:mingw, :mswin, :x64_mingw, :jruby]
16   gem 'httparty', '~>0.14', '>=0.14.0'
17
18   gem 'rspec-rails', '~> 3.5', '>=3.5.2'
19 end
20
21 gem 'puma', '~>3.6', '>=3.6.0', :platforms=>:ruby
22 gem 'pg', '~>0.19', '>=0.19.0'
23 gem 'mongoid', '~>5.1', '>=5.1.5'
~
~
~
~
~
~
```

```ruby
1 #
2 source 'https://rubygems.org'
3
4 gem 'rails', '4.2.6'
5 gem 'rails-api', '~>0.4', '>=0.4.0'
6 gem 'rack-cors', '~>0.4', '>=0.4.0', :require => 'rack/cors'
7
8 gem 'jbuilder', '~> 2.0', '>=2.6.0'
9
10 group :development do
11   gem 'spring', '~>2.0', '>=2.0.0'
12 end
13
14 group :development, :test do
15 gem 'webrick', '~>1.3', '>=1.3.1', :platforms=>[:mingw, :mswin, :x64_mingw, :jruby]
16   gem 'tzinfo-data', :platforms=>[:mingw, :mswin, :x64_mingw, :jruby]
17   gem 'httparty', '~>0.14', '>=0.14.0'
18
19   gem 'rspec-rails', '~> 3.5', '>=3.5.2'
20 end
21
22 gem 'puma', '~>3.6', '>=3.6.0', :platforms=>:ruby
23 gem 'pg', '~>0.19', '>=0.19.0'
24 gem 'mongoid', '~>5.1', '>=5.1.5'
~
~
~
~
```

```
  1 #
  2 source 'https://rubygems.org'
  3
  4 gem 'rails', '4.2.6'
  5 gem 'rails-api', '~>0.4', '>=0.4.0'
  6 gem 'rack-cors', '~>0.4', '>=0.4.0', :require => 'rack/cors'
  7
  8 gem 'jbuilder', '~> 2.0', '>=2.6.0'
  9
 10 group :development do
 11   gem 'spring', '~>2.0', '>=2.0.0'
 12 end
 13
 14 group :development, :test do
 15   gem 'webrick', '~>1.3', '>=1.3.1', :platforms=>[:mingw, :mswin, :x64_mingw, :jruby]
 16   gem 'tzinfo-data', :platforms=>[:mingw, :mswin, :x64_mingw, :jruby]
 17   gem 'httparty', '~>0.14', '>=0.14.0'
 18
 19   gem 'rspec-rails', '~> 3.5', '>=3.5.2'
 20 end
 21
 22 gem 'puma', '~>3.6', '>=3.6.0', :platforms=>:ruby
 23 gem 'pg', '~>0.19', '>=0.19.0'
 24 gem 'mongoid', '~>5.1', '>=5.1.5'
 ~
 ~
 ~
 ~
```

```
Jamess-MacBook-Pro:capstone_demoapp jim$ vi Gemfile
Jamess-MacBook-Pro:capstone_demoapp jim$ bundle
```

```
Using sprockets 3.7.0
Using httparty 0.14.0
Using rspec-core 3.5.4
Using rspec-expectations 3.5.0
Using rspec-mocks 3.5.0
Using activesupport 4.2.6
Using loofah 2.0.3
Using mail 2.6.4
Using rails-deprecated_sanitizer 1.0.3
Using globalid 0.3.7
Using activemodel 4.2.6
Using jbuilder 2.6.0
Using spring 2.0.0
Using rails-html-sanitizer 1.0.3
Using rails-dom-testing 1.0.7
Using activejob 4.2.6
Using activerecord 4.2.6
Using mongoid 5.1.5
Using actionview 4.2.6
Using actionpack 4.2.6
Using actionmailer 4.2.6
Using railties 4.2.6
Using sprockets-rails 3.2.0
Using rails-api 0.4.0
Using rspec-rails 3.5.2
Using rails 4.2.6
Bundle complete! 12 Gemfile dependencies, 54 gems now installed.
Use `bundle show [gemname]` to see where a bundled gem is installed.
```

```
Command Prompt - bundle                                                    —  □  ✕

Using mail 2.6.4
Using rails-deprecated_sanitizer 1.0.3
Using globalid 0.3.7
Using activemodel 4.2.6
Using jbuilder 2.6.0
Using spring 2.0.0
Using rails-html-sanitizer 1.0.3
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Using activejob 4.2.6
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Using mongoid 5.1.5
Using actionview 4.2.6
Using actionpack 4.2.6
Using actionmailer 4.2.6
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Using rails-api 0.4.0
Using rspec-rails 3.5.2
Using rails 4.2.6
Bundle complete! 11 Gemfile dependencies, 55 gems now installed.
Use `bundle show [gemname]` to see where a bundled gem is installed.


Z:\proj\fullstack\capstone_demoapp>rails s
=> Booting Puma
=> Rails 4.2.6 application starting in development on http://localhost:3000
=> Run `rails server -h` for more startup options
=> Ctrl-C to shutdown server
ERROR: worker mode not supported on JRuby or Windows
Exiting

Z:\proj\fullstack\capstone demoapp>bundle
```
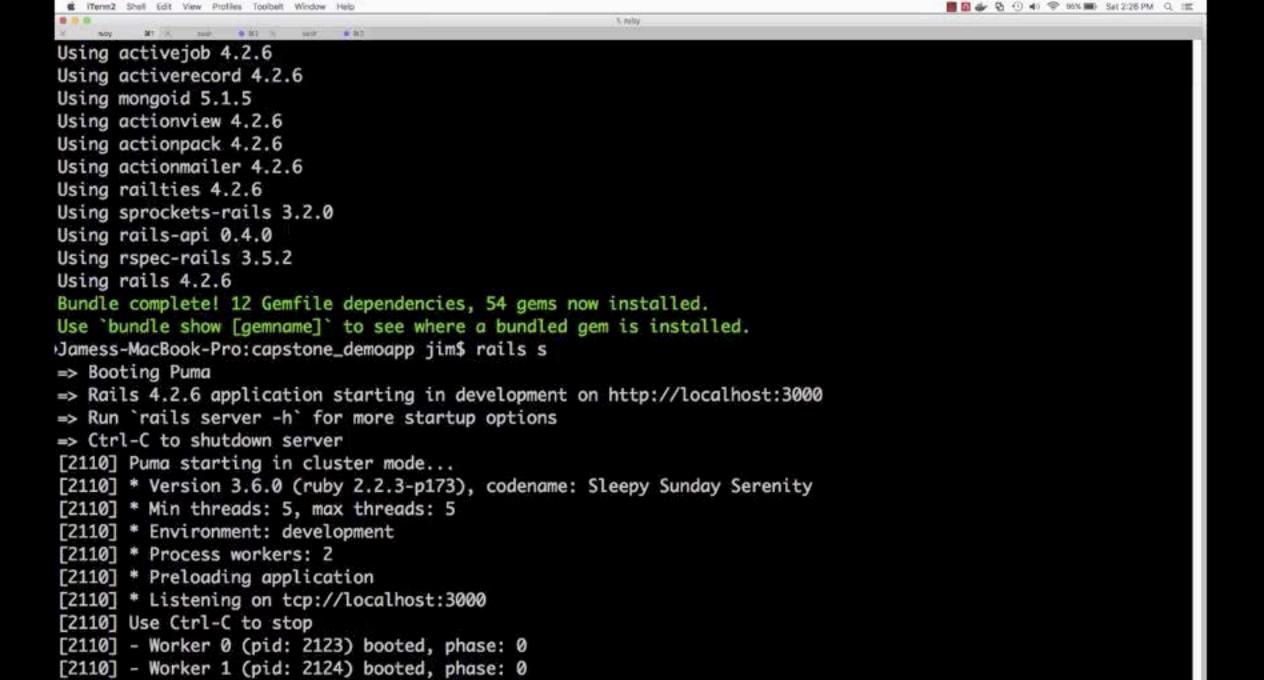
```
Using mongo 2.3.1
Using sprockets 3.7.0
Using httparty 0.14.0
Using rspec-core 3.5.4
Using rspec-expectations 3.5.0
Using rspec-mocks 3.5.0
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Using actionview 4.2.6
Using actionpack 4.2.6
Using actionmailer 4.2.6
Using railties 4.2.6
Using sprockets-rails 3.2.0
Using rails-api 0.4.0
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Using rails 4.2.6
Bundle complete! 12 Gemfile dependencies, 54 gems now installed.
Use `bundle show [gemname]` to see where a bundled gem is installed.
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Using mongoid 5.1.5
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Using actionpack 4.2.6
Using actionmailer 4.2.6
Using railties 4.2.6
Using sprockets-rails 3.2.0
Using rails-api 0.4.0
Using rspec-rails 3.5.2
Using rails 4.2.6
Bundle complete! 12 Gemfile dependencies, 54 gems now installed.
Use `bundle show [gemname]` to see where a bundled gem is installed.

Z:\proj\fullstack\capstone_demoapp>rails s
=> Booting WEBrick
=> Rails 4.2.6 application starting in development on http://localhost:3000
=> Run `rails server -h` for more startup options
=> Ctrl-C to shutdown server
[2016-12-03 14:26:23] INFO  WEBrick 1.3.1
[2016-12-03 14:26:23] INFO  ruby 2.2.4 (2015-12-16) [i386-mingw32]
[2016-12-03 14:26:23] INFO  WEBrick::HTTPServer#start: pid=6020 port=3000
```

```
Using sprockets 3.7.0
Using httparty 0.14.0
Using rspec-core 3.5.4
Using rspec-expectations 3.5.0
Using rspec-mocks 3.5.0
Using activesupport 4.2.6
Using loofah 2.0.3
Using mail 2.6.4
Using rails-deprecated_sanitizer 1.0.3
Using globalid 0.3.7
Using activemodel 4.2.6
Using jbuilder 2.6.0
Using spring 2.0.0
Using rails-html-sanitizer 1.0.3
Using rails-dom-testing 1.0.7
Using activejob 4.2.6
Using activerecord 4.2.6
Using mongoid 5.1.5
Using actionview 4.2.6
Using actionpack 4.2.6
Using actionmailer 4.2.6
Using railties 4.2.6
Using sprockets-rails 3.2.0
Using rails-api 0.4.0
Using rspec-rails 3.5.2
Using rails 4.2.6
Bundle complete! 12 Gemfile dependencies, 54 gems now installed.
Use `bundle show [gemname]` to see where a bundled gem is installed.
```

```
Using activejob 4.2.6
Using activerecord 4.2.6
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Using actionview 4.2.6
Using actionpack 4.2.6
Using actionmailer 4.2.6
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Using sprockets-rails 3.2.0
Using rails-api 0.4.0
Using rspec-rails 3.5.2
Using rails 4.2.6
Bundle complete! 12 Gemfile dependencies, 54 gems now installed.
Use `bundle show [gemname]` to see where a bundled gem is installed.
Jamess-MacBook-Pro:capstone_demoapp jim$ rails s
=> Booting Puma
=> Rails 4.2.6 application starting in development on http://localhost:3000
=> Run `rails server -h` for more startup options
=> Ctrl-C to shutdown server
[2110] Puma starting in cluster mode...
[2110] * Version 3.6.0 (ruby 2.2.3-p173), codename: Sleepy Sunday Serenity
[2110] * Min threads: 5, max threads: 5
[2110] * Environment: development
[2110] * Process workers: 2
[2110] * Preloading application
[2110] * Listening on tcp://localhost:3000
[2110] Use Ctrl-C to stop
[2110] - Worker 0 (pid: 2123) booted, phase: 0
[2110] - Worker 1 (pid: 2124) booted, phase: 0
```

Summary

✧ Rack Web Servers

✧ Configure application for use with Puma

What's Next?

✧ Gemfile Summary