

# Stupid Ideas for Many Computers

Aja Hammerly  
@thagomizer\_rb

# My first Ruby Conf

Worst. Ideas. Ever.

TODO: Subtitle



@thagomizer\_rb

<https://www.flickr.com/photos/jamisonjudd/>



Worst. Ideas. Ever.

TODO: Subtitle

110% More  
Bad Ideas

Worst. Ideas. Ever.

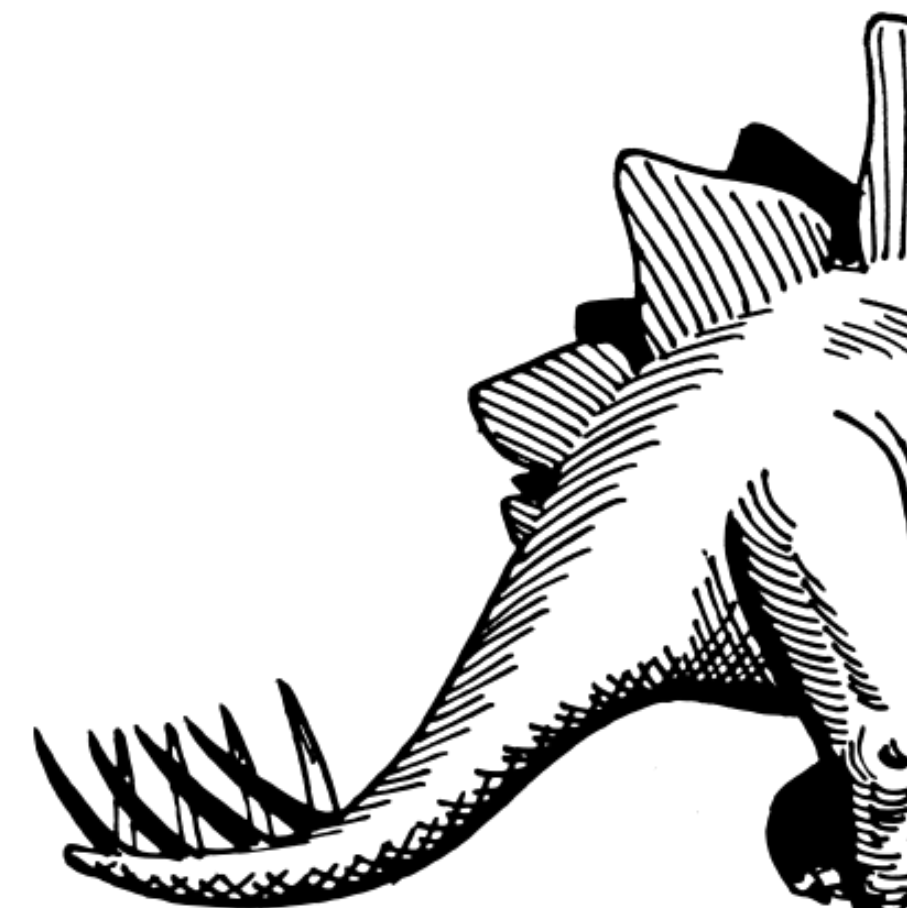
AT SCALE

**Aja Hammerly**

<http://github.com/thagomizer/StupidIdeas>

@thagomizer\_rb

<http://www.thagomizer.com>





<http://cloud.google.com/ruby>

Office Hours:

Monday during the PM Break



Google Cloud Platform

***Unless otherwise stated:  
all code is copyright Google and  
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Stupid

# Load Testing

# Really Stupid <sup>TM</sup> Load Testing

Started GET "/" for 127.0.0.1 at 2014-12-18 11:10:33 -0800  
[1m[36mActiveRecord::SchemaMigration Load (0.1ms)  
[0m [1mSELECT "schema\_migrations".\* FROM "schema\_migrations"[0m  
Processing by Rails::WelcomeController#index as HTML  
Rendered /Users/ajahammerly/.gem/repos/blog/gems/railties-4.1.8/lib/rails/templates/rails/welcome/index.html.erb (1.1ms)  
Completed 200 OK in 58ms (Views: 35.8ms | ActiveRecord: 0.0ms)

Started GET "/" for 127.0.0.1 at 2014-12-18 11:12:26 -0800  
[1m[36mActiveRecord::SchemaMigration Load (0.1ms)  
[0m [1mSELECT "schema\_migrations".\* FROM "schema\_migrations"[0m  
Processing by PostsController#index as HTML  
[1m[35mPost Load (0.1ms)[0m SELECT "posts".\* FROM "posts"  
Rendered posts/index.html.erb within layouts/application (1.7ms)  
Completed 200 OK in 1101ms (Views: 1080.9ms | ActiveRecord: 0.1ms)

Started GET "/assets/scaffolds.css?body=1" for 127.0.0.1 at 2014-12-18 11:12:28 -0800

Started GET "/assets/application.css?body=1" for 127.0.0.1 at 2014-12-18 11:12:28 -0800

Started GET "/assets/jquery.js?body=1" for 127.0.0.1 at 2014-12-18 11:12:28 -0800

Started GET "/assets/posts.css?body=1" for 127.0.0.1 at 2014-12-18 11:12:28 -0800

Started GET "/assets/jquery\_ujs.js?body=1" for 127.0.0.1 at 2014-12-18 11:12:28 -0800

Started GET "/assets/turbolinks.js?body=1" for 127.0.0.1 at 2014-12-18 11:12:28 -0800

Started GET "/assets/posts.js?body=1" for 127.0.0.1 at 2014-12-18 11:12:28 -0800

Started GET "/assets/application.js?body=1" for 127.0.0.1 at 2014-12-18 11:12:28 -0800

Started GET "/" for 127.0.0.1 at 2014-12-18 11:14:31 -0800

Processing by PostsController#index as HTML  
Completed 500 Internal Server Error in 2ms

ArgumentError (wrong number of arguments (1 for 0)):  
app/controllers/posts\_controller.rb:7:in `index'

Started GET "/assets/application.js?body=1" for 127.0.0.1 at 2014-12-18 11:15:11 -0800

Started GET "/posts" for 127.0.0.1 at 2014-12-18 11:15:13 -0800

Processing by PostsController#index as HTML  
[1m[35mPost Load (0.1ms)[0m SELECT "posts".\* FROM "posts" ORDER BY created\_at DESC  
Rendered posts/index.html.erb within layouts/application (3.6ms)  
Completed 200 OK in 29ms (Views: 28.0ms | ActiveRecord: 0.1ms)

Started GET "/posts/new" for 127.0.0.1 at 2014-12-18 11:15:14 -0800

Processing by PostsController#new as HTML  
Rendered posts/\_form.html.erb (2.5ms)  
Rendered posts/new.html.erb within layouts/application (3.6ms)  
Completed 200 OK in 37ms (Views: 36.1ms | ActiveRecord: 0.0ms)

Started POST "/posts" for 127.0.0.1 at 2014-12-18 11:15:22 -0800

Processing by PostsController#create as HTML  
Parameters: {"utf8"=>"✓", "authenticity\_token"=>"sdU1eASFmHcNz/I+HRSnK0Qfsvt/jMe/y65LHfABZRU=", "post"=>{"title"=>"Post 2", "body"=>"Stupid LDB"}, "commit"=>"Create Post"}  
[1m[36m (0.1ms)[0m [1mbegin transaction[0m [1m[35mSQL (0.2ms)[0m INSERT INTO "posts" ("body", "created\_at", "title", "updated\_at") VALUES (?, ?, ?, ?) [["body", "Stupid LDB"], ["created\_at", "2014-12-18 19:15:22.628020"], ["title", "Post 2"], ["updated\_at", "2014-12-18 19:15:22.628020"]]  
[1m[36m (0.7ms)[0m [1mcommit transaction[0m  
Redirected to http://localhost:3000/posts/2  
Completed 302 Found in 4ms (ActiveRecord: 1.0ms)

Started GET "/posts/2" for 127.0.0.1 at 2014-12-18 11:15:22 -0800

Processing by PostsController#show as HTML  
Parameters: {"id"=>"2"}  
[1m[35mPost Load (0.1ms)[0m SELECT "posts".\* FROM "posts" WHERE "posts"."id" = ? LIMIT 1 [["id", 2]]  
Rendered posts/show.html.erb within layouts/application (0.3ms)  
Completed 200 OK in 61ms (Views: 59.9ms | ActiveRecord: 0.1ms)

Started GET "/assets/scaffolds.css?body=1" for 127.0.0.1 at 2014-12-18 11:15:22 -0800

Started GET "/assets/jquery\_ujs.js?body=1" for 127.0.0.1 at 2014-12-18 11:15:22 -0800

Started GET "/assets/turbolinks.js?body=1" for 127.0.0.1 at 2014-12-18 11:15:22 -0800

Started GET "/" for 127.0.0.1 at 2014-12-18 11:10:33 -0800  
[1m[36mActiveRecord::SchemaMigration Load (0.1ms)  
[0m [1mSELECT "schema\_migrations".\* FROM "schema\_migrations"[0m

Rendered posts/new.html.erb within layouts/application (14.7ms)  
Completed 200 OK in 41ms (Views: 39.7ms | ActiveRecord: 0.2ms)

Started POST "/posts" for 127.0.0.1 at 2014-12-18 11:15:11 -0800

Processing by PostsController#create as HTML  
Parameters: {"utf8"=>"✓", "authenticity\_token"=>"sdU1eASFmHcNz/I+HRSnK0Qfsvt/jMe/y65LHfABZRU=", "post"=>{"title"=>"Post 1", "body"=>"Blah blah blah"}, "commit"=>"Create Post"}  
[1m[35m (0.1ms)[0m begin transaction  
[1m[36mSQL (0.3ms)[0m [1mINSERT INTO "posts" ("body", "created\_at", "title", "updated\_at") VALUES (?, ?, ?, ?) [["body", "Blah blah blah"], ["created\_at", "2014-12-18 19:15:11.521855"], ["title", "Post 1"], ["updated\_at", "2014-12-18 19:15:11.521855"]]  
[1m[35m (0.7ms)[0m commit transaction  
Redirected to http://localhost:3000/posts/1  
Completed 302 Found in 7ms (ActiveRecord: 1.2ms)

Started GET "/posts/1" for 127.0.0.1 at 2014-12-18 11:15:11 -0800

Processing by PostsController#show as HTML  
Parameters: {"id"=>"1"}  
[1m[36mPost Load (0.2ms)[0m [1mSELECT "posts".\* FROM "posts" WHERE "posts"."id" = ? LIMIT 1 [0m [["id", 1]]  
Rendered posts/show.html.erb within layouts/application (0.9ms)  
Completed 200 OK in 65ms (Views: 63.1ms | ActiveRecord: 0.2ms)

Started GET "/assets/jquery\_ujs.js?body=1" for 127.0.0.1 at 2014-12-18 11:15:11 -0800

Started GET "/assets/jquery.js?body=1" for 127.0.0.1 at 2014-12-18 11:15:11 -0800

Started GET "/assets/application.css?body=1" for 127.0.0.1 at 2014-12-18 11:15:11 -0800

Started GET "/assets/scaffolds.css?body=1" for 127.0.0.1 at 2014-12-18 11:15:11 -0800

Started GET "/assets/posts.css?body=1" for 127.0.0.1 at 2014-12-18 11:15:11 -0800

Started GET "/assets/turbolinks.js?body=1" for 127.0.0.1 at 2014-12-18 11:15:11 -0800

Started GET "/assets/posts.js?body=1" for 127.0.0.1 at 2014-12-18 11:15:11 -0800

Started GET "/assets/application.js?body=1" for 127.0.0.1 at 2014-12-18 11:15:11 -0800

Started GET "/assets/jquery.js?body=1" for 127.0.0.1 at 2014-12-18 11:12:28 -0800

Started GET "/assets/posts.css?body=1" for 127.0.0.1 at 2014-12-18 11:12:28 -0800

Started GET "/assets/jquery\_ujs.js?body=1" for 127.0.0.1 at 2014-12-18 11:12:28 -0800

Started GET "/assets/turbolinks.js?body=1" for 127.0.0.1 at 2014-12-18 11:12:28 -0800

Started GET "/assets/posts.js?body=1" for 127.0.0.1 at 2014-12-18 11:12:28 -0800

Started GET "/assets/application.js?body=1" for 127.0.0.1 at 2014-12-18 11:12:28 -0800

Started GET "/" for 127.0.0.1 at 2014-12-18 11:14:31 -0800

Processing by PostsController#index as HTML  
Completed 500 Internal Server Error in 2ms

ArgumentError (wrong number of arguments (1 for 0)):  
app/controllers/posts\_controller.rb:7:in `index'

Rendered /Users/ajahammerly/.gem/repos/blog/gems/actionpack-4.1.8/lib/action\_dispatch/middleware/templates/rescues/\_source.erb (0.6ms)

Rendered /Users/ajahammerly/.gem/repos/blog/gems/actionpack-4.1.8/lib/action\_dispatch/middleware/templates/rescues/\_trace.html.erb (0.8ms)

Rendered /Users/ajahammerly/.gem/repos/blog/gems/actionpack-4.1.8/lib/action\_dispatch/middleware/templates/rescues/\_request\_and\_response.html.erb (1.1ms)

Rendered /Users/ajahammerly/.gem/repos/blog/gems/actionpack-4.1.8/lib/action\_dispatch/middleware/templates/rescues/diagnostics.erb within rescues/layout (15.4ms)

Started GET "/" for 127.0.0.1 at 2014-12-18 11:15:03 -0800

Processing by PostsController#index as HTML  
[1m[36mPost Load (0.3ms)[0m [1mSELECT "posts".\* FROM "posts" ORDER BY created\_at DESC[0m  
Rendered posts/index.html.erb within layouts/application (1.8ms)  
Completed 200 OK in 31ms (Views: 28.8ms | ActiveRecord: 0.3ms)

Started GET "/assets/scaffolds.css?body=1" for 127.0.0.1 at 2014-12-18 11:15:03 -0800

Started GET "/assets/jquery.js?body=1" for 127.0.0.1 at 2014-12-18 11:15:03 -0800

Started GET "/assets/application.css?body=1" for 127.0.0.1 at 2014-12-18 11:15:03 -0800

```
077).
app/controllers/posts_controller.rb:7:in `index'

Rendered /Users/ajahammerly/.gem/repos/blog/gems/
actionpack-4.1.8/lib/action_dispatch/middleware/
templates/rescues/_source.erb (0.6ms)
Rendered /Users/ajahammerly/.gem/repos/blog/gems/
actionpack-4.1.8/lib/action_dispatch/middleware/
templates/rescues/_trace.html.erb (0.8ms)
Rendered /Users/ajahammerly/.gem/repos/blog/gems/
actionpack-4.1.8/lib/action_dispatch/middleware/
templates/rescues/_request_and_response.html.erb
(1.1ms)
Rendered /Users/ajahammerly/.gem/repos/blog/gems/
actionpack-4.1.8/lib/action_dispatch/middleware/
templates/rescues/diagnostics.erb within rescues/
layout (15.4ms)

Started GET "/" for 127.0.0.1 at 2014-12-18
11:15:03 -0800
Processing by PostsController#index as HTML
[1m[36mPost Load (0.3ms)[0m [1mSELECT "posts".*
FROM "posts" ORDER BY created_at DESC[0m
Rendered posts/index.html.erb within layouts/
application (1.8ms)
Completed 200 OK in 31ms (Views: 28.8ms |
ActiveRecord: 0.3ms)

Started GET "/assets/scaffolds.css?body=1" for
127.0.0.1 at 2014-12-18 11:15:03 -0800

Started GET "/assets/jquery.js?body=1" for
127.0.0.1 at 2014-12-18 11:15:03 -0800

Started GET "/assets/application.css?body=1" for
127.0.0.1 at 2014-12-18 11:15:03 -0800

Started GET "/assets/posts.css?body=1" for
127.0.0.1 at 2014-12-18 11:15:03 -0800

Started GET "/assets/jquery_ujs.js?body=1" for
127.0.0.1 at 2014-12-18 11:15:03 -0800

Started GET "/assets/turbolinks.js?body=1" for
127.0.0.1 at 2014-12-18 11:15:03 -0800

Started GET "/assets/posts.js?body=1" for 127.0.0.1
at 2014-12-18 11:15:03 -0800

Started GET "/assets/application.js?body=1" for
127.0.0.1 at 2014-12-18 11:15:03 -0800

Started GET "/posts/new" for 127.0.0.1 at
2014-12-18 11:15:05 -0800
Processing by PostsController#new as HTML
Rendered posts/_form.html.erb (12.2ms)
Rendered posts/new.html.erb within layouts/
application (14.7ms)
Completed 200 OK in 41ms (Views: 39.7ms |
ActiveRecord: 0.2ms)

Started GET "/posts/new" for 127.0.0.1 at
2014-12-18 11:15:05 -0800
Processing by PostsController#new as HTML
Rendered posts/_form.html.erb (12.2ms)
Rendered posts/new.html.erb within layouts/
application (14.7ms)
Completed 200 OK in 41ms (Views: 39.7ms |
ActiveRecord: 0.3ms)

Started GET "/assets/scaffolds.css?body=1" for
127.0.0.1 at 2014-12-18 11:15:03 -0800

Started GET "/assets/application.css?body=1" for
127.0.0.1 at 2014-12-18 11:15:03 -0800

Started GET "/assets/jquery.js?body=1" for
127.0.0.1 at 2014-12-18 11:15:03 -0800

Started GET "/assets/application.css?body=1" for
127.0.0.1 at 2014-12-18 11:15:03 -0800

Started GET "/assets/posts.css?body=1" for
127.0.0.1 at 2014-12-18 11:15:03 -0800

Started GET "/assets/jquery_ujs.js?body=1" for
127.0.0.1 at 2014-12-18 11:15:03 -0800

Started GET "/assets/turbolinks.js?body=1" for
127.0.0.1 at 2014-12-18 11:15:03 -0800

Started GET "/assets/posts.js?body=1" for 127.0.0.1
at 2014-12-18 11:15:03 -0800

Started GET "/assets/application.js?body=1" for
127.0.0.1 at 2014-12-18 11:15:03 -0800

Started GET "/posts/new" for 127.0.0.1 at
2014-12-18 11:15:05 -0800
Processing by PostsController#new as HTML
Rendered posts/_form.html.erb (12.2ms)
Rendered posts/new.html.erb within layouts/
application (14.7ms)
Completed 200 OK in 41ms (Views: 39.7ms |
ActiveRecord: 0.2ms)
```

```
Started GET "/assets/turbolinks.js?body=1" for
127.0.0.1 at 2014-12-18 11:15:03 -0800
[1m[36mActiveRecord::SchemaMigration Load (0.1ms)
[0m [1mSELECT "schema_migrations".* FROM
"schema_migrations"[0m
Processing by Rails::WelcomeController#index as
HTML
Rendered /Users/ajahammerly/.gem/repos/blog/gems/
railties-4.1.8/lib/rails/templates/rails/welcome/
index.html.erb (1.1ms)
Completed 200 OK in 58ms (Views: 35.8ms |
ActiveRecord: 0.0ms)

Started GET "/" for 127.0.0.1 at 2014-12-18
11:12:26 -0800
[1m[36mActiveRecord::SchemaMigration Load (0.1ms)
[0m [1mSELECT "schema_migrations".* FROM
"schema_migrations"[0m
Processing by PostsController#index as HTML
[1m[35mPost Load (0.1ms)[0m SELECT "posts".*
FROM "posts"
Rendered posts/index.html.erb within layouts/
application (1.7ms)
Completed 200 OK in 1101ms (Views: 1080.9ms |
ActiveRecord: 0.1ms)

Started GET "/assets/scaffolds.css?body=1" for
127.0.0.1 at 2014-12-18 11:12:28 -0800

Started GET "/assets/application.css?body=1" for
127.0.0.1 at 2014-12-18 11:12:28 -0800

Started GET "/assets/jquery.js?body=1" for
127.0.0.1 at 2014-12-18 11:12:28 -0800

Started GET "/assets/posts.css?body=1" for
127.0.0.1 at 2014-12-18 11:12:28 -0800

Started GET "/assets/jquery_ujs.js?body=1" for
127.0.0.1 at 2014-12-18 11:12:28 -0800

Started GET "/assets/turbolinks.js?body=1" for
127.0.0.1 at 2014-12-18 11:12:28 -0800

Started GET "/assets/posts.js?body=1" for 127.0.0.1
at 2014-12-18 11:12:28 -0800

Started GET "/assets/application.js?body=1" for
127.0.0.1 at 2014-12-18 11:12:28 -0800

Started GET "/" for 127.0.0.1 at 2014-12-18
11:14:31 -0800
Processing by PostsController#index as HTML
Completed 500 Internal Server Error in 2ms

ArgumentError (wrong number of arguments (1 for
0)):
app/controllers/posts_controller.rb:7:in `index'

Rendered /Users/ajahammerly/.gem/repos/blog/gems/
actionpack-4.1.8/lib/action_dispatch/middleware/
templates/rescues/_source.erb (0.6ms)
```

```
Started GET "/assets/application.js?body=1" for
127.0.0.1 at 2014-12-18 11:15:11 -0800

Started GET "/posts" for 127.0.0.1 at 2014-12-18
11:15:13 -0800
Processing by PostsController#index as HTML
[1m[35mPost Load (0.1ms)[0m SELECT "posts".*
FROM "posts" ORDER BY created_at DESC
Rendered posts/index.html.erb within layouts/
application (3.6ms)
Completed 200 OK in 29ms (Views: 28.0ms |
ActiveRecord: 0.1ms)

Started GET "/posts/new" for 127.0.0.1 at
2014-12-18 11:15:14 -0800
Processing by PostsController#new as HTML
Rendered posts/_form.html.erb (2.5ms)
Rendered posts/new.html.erb within layouts/
application (3.6ms)
Completed 200 OK in 37ms (Views: 36.1ms |
ActiveRecord: 0.0ms)

Started POST "/posts" for 127.0.0.1 at 2014-12-18
11:15:22 -0800
Processing by PostsController#create as HTML
Parameters: {"utf8"=>"✓",
"authenticity_token"=>"sdU1eASFmHcNz/I+HRSnK0Qfsvt/
jMe/y65LHfABZRU=", "post"=>{"title"=>"Post 2",
"body"=>"Stupid LDB"}, "commit"=>"Create Post"}
[1m[36m (0.1ms)[0m [1mbegin transaction[0m
[1m[35mSQL (0.2ms)[0m INSERT INTO
"posts" ("body", "created_at", "title",
"updated_at") VALUES (?, ?, ?, ?) [["body",
"Stupid LDB"], ["created_at", "2014-12-18
19:15:22.628020"], ["title", "Post 2"],
["updated_at", "2014-12-18 19:15:22.628020"]]
[1m[36m (0.7ms)[0m [1mcommit transaction[0m
Redirected to http://localhost:3000/posts/2
Completed 302 Found in 4ms (ActiveRecord: 1.0ms)

Started GET "/posts/2" for 127.0.0.1 at 2014-12-18
11:15:22 -0800
Processing by PostsController#show as HTML
Parameters: {"id"=>"2"}
[1m[35mPost Load (0.1ms)[0m SELECT "posts".*
FROM "posts" WHERE "posts"."id" = ? LIMIT 1
[["id", 2]]
Rendered posts/show.html.erb within layouts/
application (0.3ms)
Completed 200 OK in 61ms (Views: 59.9ms |
ActiveRecord: 0.1ms)

Started GET "/assets/scaffolds.css?body=1" for
127.0.0.1 at 2014-12-18 11:15:22 -0800

Started GET "/assets/jquery_ujs.js?body=1" for
127.0.0.1 at 2014-12-18 11:15:22 -0800

Started GET "/assets/turbolinks.js?body=1" for
127.0.0.1 at 2014-12-18 11:15:22 -0800

Started GET "/assets/application.css?body=1" for
127.0.0.1 at 2014-12-18 11:15:22 -0800

Started GET "/assets/jquery_ujs.js?body=1" for
127.0.0.1 at 2014-12-18 11:15:22 -0800

Started GET "/assets/turbolinks.js?body=1" for
127.0.0.1 at 2014-12-18 11:15:22 -0800

Started GET "/assets/application.css?body=1" for
127.0.0.1 at 2014-12-18 11:15:22 -0800
```

```
127.0.0.1 at 2014-12-18 11:15:03 -0800

Started GET "/assets/application.css?body=1" for
127.0.0.1 at 2014-12-18 11:15:03 -0800

Started GET "/assets/posts.css?body=1" for
127.0.0.1 at 2014-12-18 11:15:03 -0800

Started GET "/assets/jquery_ujs.js?body=1" for
127.0.0.1 at 2014-12-18 11:15:03 -0800

Started GET "/assets/turbolinks.js?body=1" for
127.0.0.1 at 2014-12-18 11:15:03 -0800

Started GET "/assets/posts.js?body=1" for 127.0.0.1
at 2014-12-18 11:15:03 -0800

Started GET "/assets/application.js?body=1" for
127.0.0.1 at 2014-12-18 11:15:03 -0800

Started GET "/posts/new" for 127.0.0.1 at
2014-12-18 11:15:05 -0800
Processing by PostsController#new as HTML
Rendered posts/_form.html.erb (12.2ms)
Rendered posts/new.html.erb within layouts/
application (14.7ms)
Completed 200 OK in 41ms (Views: 39.7ms |
ActiveRecord: 0.2ms)

Started POST "/posts" for 127.0.0.1 at 2014-12-18
11:15:11 -0800
Processing by PostsController#create as HTML
Parameters: {"utf8"=>"✓",
"authenticity_token"=>"sdU1eASFmHcNz/I+HRSnK0Qfsvt/
jMe/y65LHfABZRU=", "post"=>{"title"=>"Post 1",
"body"=>"Blah blah blah"}, "commit"=>"Create Post"}
[1m[35m (0.1ms)[0m begin transaction
[1m[36mSQL (0.3ms)[0m [1mINSERT INTO
"posts" ("body", "created_at", "title",
"updated_at") VALUES (?, ?, ?, ?)[0m [["body",
"Blah blah blah"], ["created_at", "2014-12-18
19:15:11.521855"], ["title", "Post 1"],
["updated_at", "2014-12-18 19:15:11.521855"]]
[1m[35m (0.7ms)[0m commit transaction
Redirected to http://localhost:3000/posts/1
Completed 302 Found in 7ms (ActiveRecord: 1.2ms)

Started GET "/posts/1" for 127.0.0.1 at 2014-12-18
11:15:11 -0800
Processing by PostsController#show as HTML
Parameters: {"id"=>"1"}
[1m[36mPost Load (0.2ms)[0m [1mSELECT "posts".*
FROM "posts" WHERE "posts"."id" = ? LIMIT 1[0m
[["id", 1]]
Rendered posts/show.html.erb within layouts/
application (0.9ms)
Completed 200 OK in 65ms (Views: 63.1ms |
ActiveRecord: 0.2ms)

Started GET "/assets/jquery_ujs.js?body=1" for
127.0.0.1 at 2014-12-18 11:15:11 -0800
```

Mechanize



# Computers

# LOAD TESTING

# Code

Not Good

**# HIDEOUS REG EX**

```

# HIDEOUS REG EX
#
# /Parameters:\s\{"action"=>"(\w*)",\s"controller"=>"(\w*)",\s("properties
\=>".*)/
puts "require 'rubygems'"
puts "require 'mechanize'"
puts
puts "server = 'http://' + ARGV[0]"

puts "agent = WWW::Mechanize.new"
puts "login_pg = agent.get(server)"

File.open(ARGV[0]) do |log|
  log.each do |line|
    if line =~ /Parameters:\s\{"action"=>"(\w*)",\s"controller"=>"(\w*)",
\s("properties"=>".*)/
      if $2 == 'state_manager'
        puts "page = agent.post(state_manager_url, # $3 )"
      elsif $1 == 'nextLesson'
        puts "page = agent.post(next_lesson_url, # $3 )"
      end
    end
  end
end
end
end

```

```

# HIDEOUS REG EX
#
# /Parameters:\s\{"action"=>"(\w*)",\s"controller"=>"(\w*)",\s("properties
\=>".*)/
puts "require 'rubygems'"
puts "require 'mechanize'"
puts
puts "server = 'http://' + ARGV[0]"

puts "agent = WWW::Mechanize.new"
puts "login_pg = agent.get(server)"

File.open(ARGV[0]) do |log|
  log.each do |line|
    if line =~ /Parameters:\s\{"action"=>"(\w*)",\s"controller"=>"(\w*)",
\s("properties"=>".*)/
      if $2 == 'state_manager'
        puts "page = agent.post(state_manager_url, #3 )"
      elsif $1 == 'nextLesson'
        puts "page = agent.post(next_lesson_url, #3 )"
      end
    end
  end
end
end
end

```

```

# HIDEOUS REG EX
#
# /Parameters:\s\{"action"=>"(\w*)",\s"controller"=>"(\w*)",\s("properties
\=>".*)/
puts "require 'rubygems'"
puts "require 'mechanize'"
puts
puts "server = 'http://' + ARGV[0]"

puts "agent = WWW::Mechanize.new"
puts "login_pg = agent.get(server)"

File.open(ARGV[0]) do |log|
  log.each do |line|
    if line =~ /Parameters:\s\{"action"=>"(\w*)",\s"controller"=>"(\w*)",
\s("properties"=>".*)/
      if $2 == 'state_manager'
        puts "page = agent.post(state_manager_url, #3 )"
      elsif $1 == 'nextLesson'
        puts "page = agent.post(next_lesson_url, #3 )"
      end
    end
  end
end
end
end

```



```

# HIDEOUS REG EX
#
# /Parameters:\s\{"action"=>"(\w*)",\s{"controller"=>"(\w*)",\s{"properties
\=>".*)/
puts "require 'rubygems'"
puts "require 'mechanize'"
puts
puts "server = 'http://' + ARGV[0]"

puts "agent = WWW::Mechanize.new"
puts "login_pg = agent.get(server)"

File.open(ARGV[0]) do |log|
  log.each do |line|
    if line =~ /Parameters:\s\{"action"=>"(\w*)",\s{"controller"=>"(\w*)",
\s{"properties"=>".*)/
      if $2 == 'state_manager'
        puts "page = agent.post(state_manager_url, #3 )"
      elsif $1 == 'nextLesson'
        puts "page = agent.post(next_lesson_url, #3 )"
      end
    end
  end
end
end
end

```

# Flexible

# Load

# Parallelism

```
loop do  
end
```

bash



# Toasty Cheese Sandwich

# Cloud





# Toasty Cheese Sandwich

<https://www.flickr.com/photos/chefdruck/4541489084>

# ~~Deployment~~ Hackery

# VMs

ssh

# Feature!

Stupid?

# Tweets & Emoji

## ***sen·ti·ment a·nal·y·sis (noun)***

*the process of computationally identifying and categorizing opinions expressed in a piece of text, especially in order to determine whether the writer's attitude towards a particular topic, product, etc., is positive, negative, or neutral.*



Hard

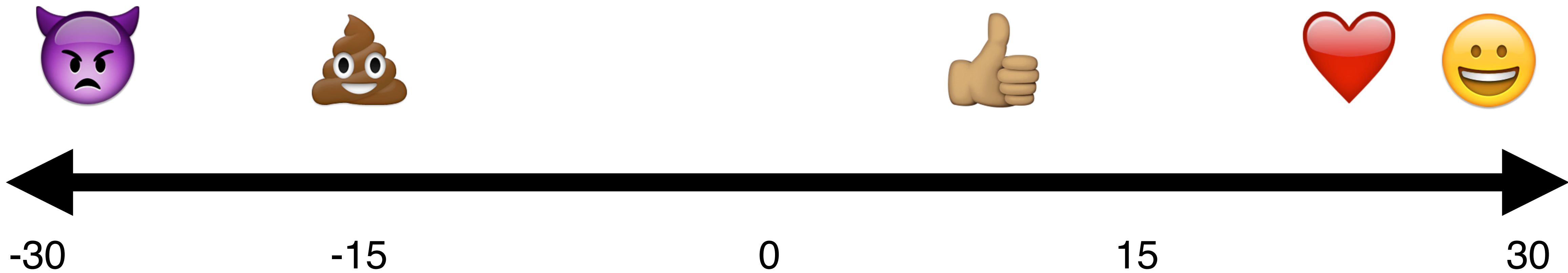
"Sure, I'd love to"



# Positive

# Negative





# Tweets

# Code

tweetstream



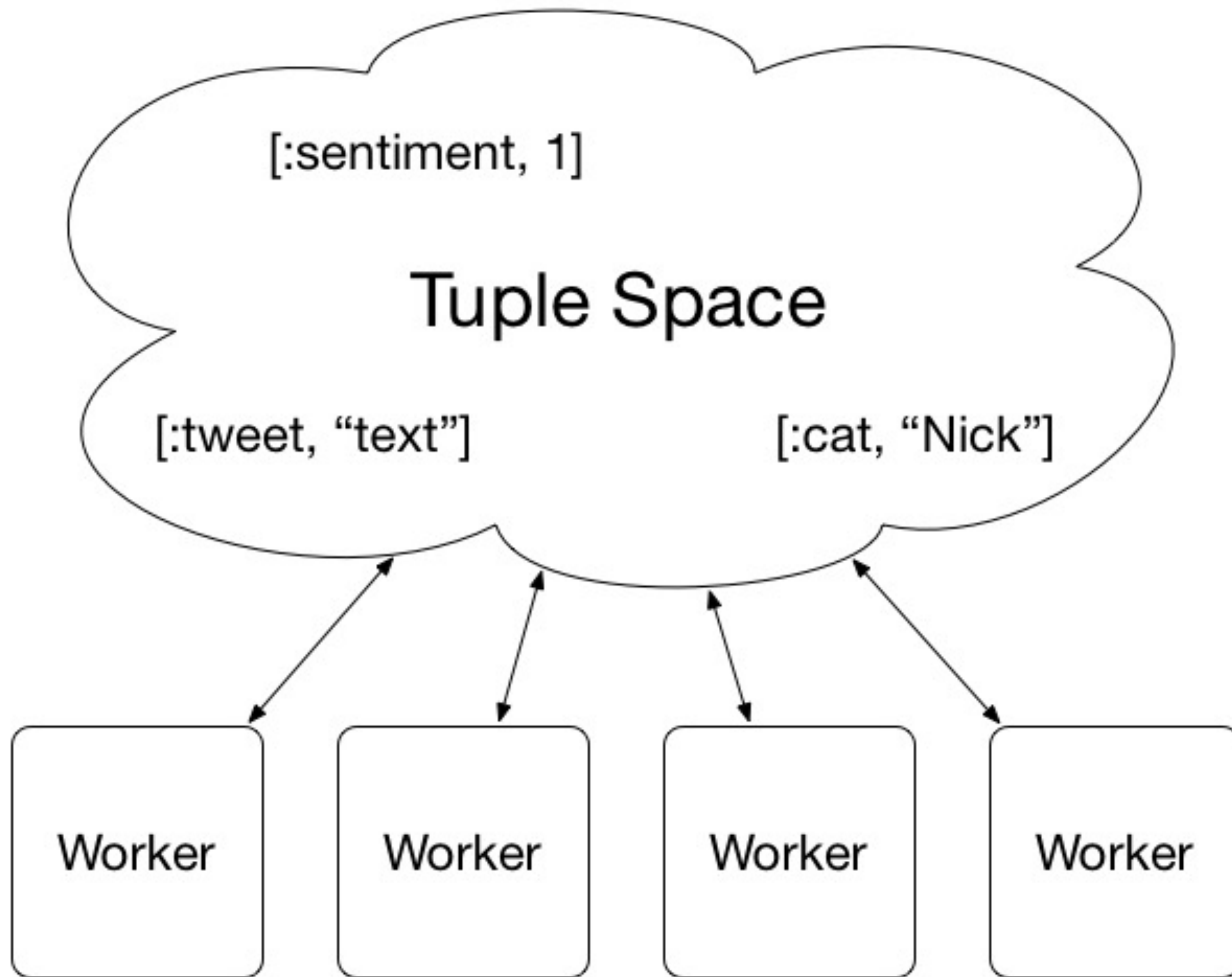
SENTIMENTS = { " :- ) " => 10,  
" 😊 " => 30,  
" ❤️ " => 25,  
" ( : " => 5,  
" 😡 " => -30,  
" :-D " => 15,  
" 👍 " => 7,  
" 🍌 " => -15 }

```
def analyze tweet
  SENTIMENTS.each do |s, val|
    if tweet.include? s then
      sentiment += val
    end
  end
end
```

# Many Computers!

rinda

Linda



# Server

```
require 'rinda/tuplespace'
```

```
URI = ARGV[0] || "druby://0.0.0.0:61676"
```

```
DRb.start_service(URI, Rinda::TupleSpace.new)
```

```
DRb.thread.join
```



# 3 Worker Types

# Server (Tuple Space)

Fetcher

Analyzer

Reducer

# Server (Tuple Space)

`[:tweet, "My :-)"]`

Fetcher

Analyzer

Reducer

# Server (Tuple Space)

```
[:tweet, "My :-)"]
```

Fetcher

Analyzer

Reducer

# Server (Tuple Space)

Fetcher

Analyzer

Reducer

`[:tweet, "My :-)"]`

# Server (Tuple Space)

Fetcher

[:sentiment, 10]

Analyzer

Reducer

# Server (Tuple Space)

```
[:sentiment, 10]
```

Fetcher

Analyzer

Reducer

# Server (Tuple Space)

Fetcher

Analyzer

Reducer

`[:sentiment, 10]`



# Server (Tuple Space)

Fetcher

Analyzer

total\_sentiment = 10

Reducer

# Fetcher

```
[ :tweet, "My tweets :-)"]
```

```
require 'rinda/rinda'

DRb.start_service("druby://#{my_ip}:3000")
ts = Rinda::TupleSpaceProxy.new(DRbObject.new(nil, uri))

tf = TweetFetcher.new
tf.fetch("emoji") { |text| ts.write([:tweet, text]) }
```



# Analyzer (mapper)

```
require "rinda/rinda"
require "sentiments"

DRb.start_service("druby://#{my_ip}:3000")
ts = Rinda::TupleSpaceProxy.new(DRbObject.new(nil, URI))

loop do
  _, tweet = ts.take[:tweet, String] ←
  sentiment = 0
  SENTIMENTS.each do |s, val|
    if tweet.include? s then
      sentiment += val
    end
  end
  ts.write[:sentiment, sentiment] ←
end
```

[ : sentiment, 5]

# Reducer



```
require 'rinda/rinda'

DRb.start_service("druby://#{my_ip}:3000")
ts = Rinda::TupleSpaceProxy.new(DRbObject.new(nil, URI))

total_sentiment = 0

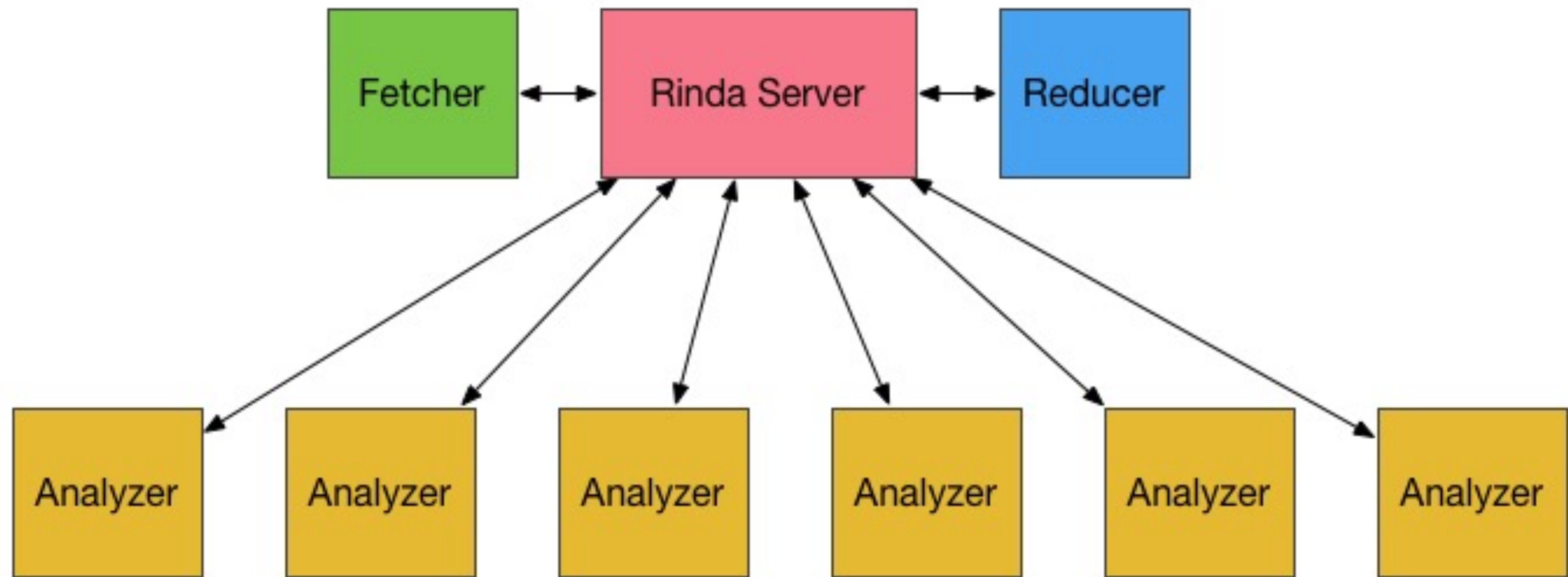
loop do
  _, sentiment = ts.take([:sentiment, Numeric])
  total_sentiment += sentiment
  STDERR.puts "Final Sentiment: #{total_sentiment}"
end
```

# Making It Go

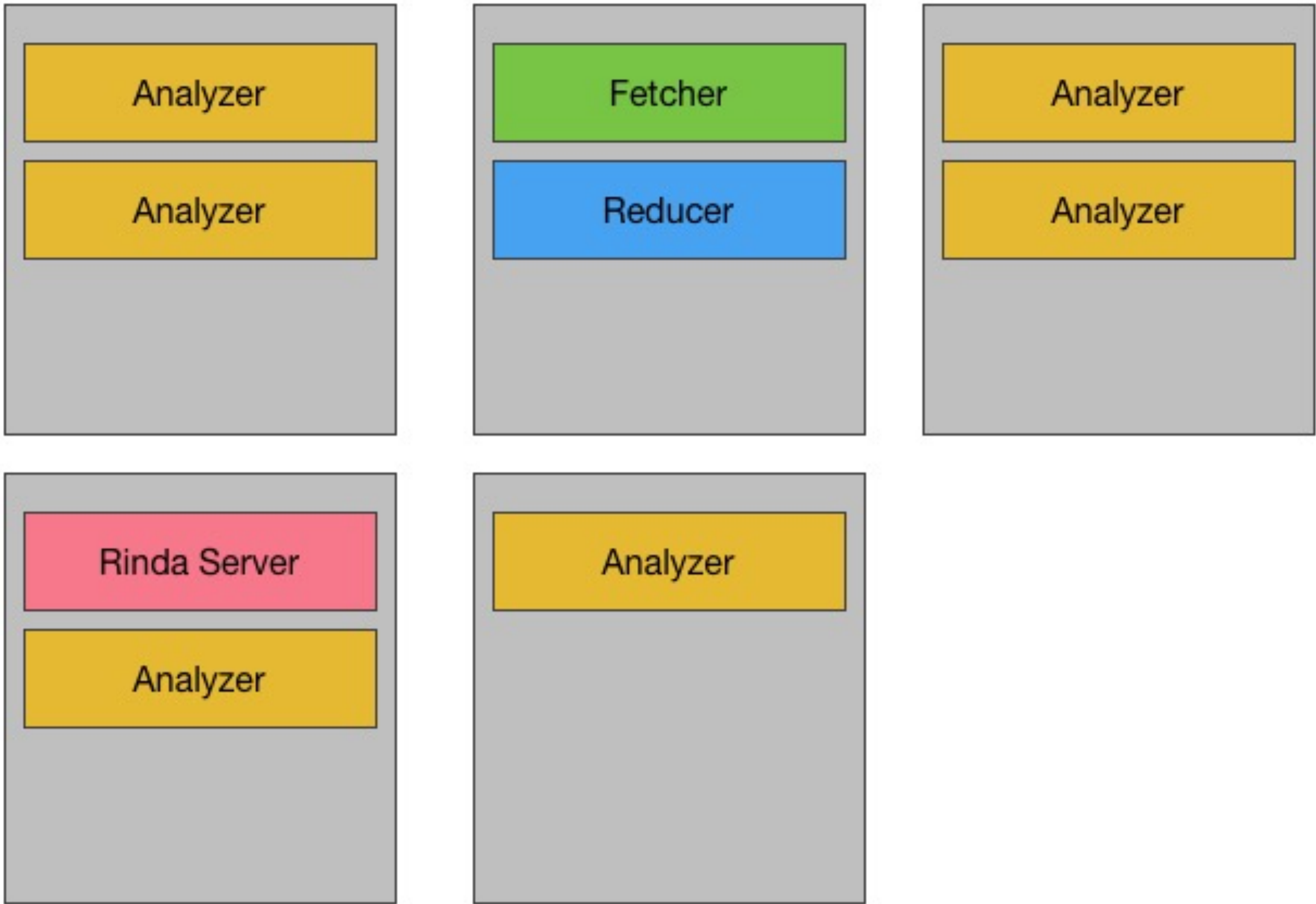
# Containers

# 8 Containers

5 Vms



# Kubernetes





# Demo

**#RubyConfEmoji**

# Latin Squares

# ***Latin Square***

*In combinatorics and in experimental design, a Latin square is an  $n \times n$  array filled with  $n$  different symbols, each occurring exactly once in each row and exactly once in each column.*

A	B	C	D
D	A	B	C
B	C	D	A
C	D	A	B



# Euler

Simple



**4 x 4**

576

**6 x 6**

812,851,200

9 x 9

5	3			7				
6			1	9	5			
	9	8					6	
8				6				3
4			8		3			1
7				2				6
	6					2	8	
			4	1	9			5
				8			7	9

<https://en.wikipedia.org/wiki/Sudoku#/media/File:Sudoku-by-L2G-20050714.svg>

**5,524,751,496,156,892,842,531,225,600**

$\sim 5 \times 10^{27}$



# Code

# Sieve

Array#permute

```
SIZE = ARGV[0].to_i || 6
```

```
permutates = (1..SIZE).to_a.permutation.map { |n| n }  
permutates.permutation(SIZE).each do |grid|  
  pp grid  
end
```

```
SIZE = ARGV[0].to_i || 6
```

```
permuter = (1..SIZE).to_a.permutation.map { |n| n }  
permuter.permutation(SIZE).each do |grid|  
  pp grid  
end
```

```
SIZE = ARGV[0].to_i || 6
```

```
permuter = (1..SIZE).to_a.permutation.map { |n| n }  
permuter.permutation(SIZE).each do |grid|  
  pp grid  
end
```

```
SIZE = ARGV[0].to_i || 6
```

```
permuter = (1..SIZE).to_a.permutation.map { |n| n }
```

```
permuter.permutation(SIZE).each do |grid|
```

```
  pp grid
```

```
end
```

```
[ [1, 2, 3, 4, 5],  
  [1, 2, 3, 5, 4],  
  [1, 5, 4, 2, 3],  
  [5, 3, 4, 2, 1],  
  [3, 2, 1, 5, 4]]
```



```
[ [1, 2, 3, 4, 5],  
  [1, 2, 3, 5, 4],  
  [1, 5, 4, 2, 3],  
  [5, 3, 4, 2, 1],  
  [3, 2, 1, 5, 4]]
```

$$(n!)! / (n! - n)!$$

$O(n!!)$

$\sim 1 \times 10^{50}$

```
size = solution[0].length
example = (1..size).to_a

correct = solution.all? { |row| row.sort == example } &&
          solution.transpose.all? { |col| col.sort == example }

if correct then
  pp solution
end
```

```
size = solution[0].length  
example = (1..size).to_a
```

```
correct = solution.all? { |row| row.sort == example } &&  
          solution.transpose.all? { |col| col.sort == example }
```

```
if correct then  
  pp solution  
end
```

```
size = solution[0].length
example = (1..size).to_a
```

```
correct = solution.all? { |row| row.sort == example } &&  
    solution.transpose.all? { |col| col.sort == example }
```

```
if correct then  
  pp solution  
end
```

```
size = solution[0].length
example = (1..size).to_a

correct = solution.all? { |row| row.sort == example } &&
          solution.transpose.all? { |col| col.sort == example }

if correct then
  pp solution
end
```



$10^{50}$

**SCALE!!!!**

rinda

```
[ : possibility,  
  [3, 4, 2, 1],  
  [2, 3, 1, 4],  
  [1, 2, 4, 3],  
  [4, 1, 3, 2]  
]
```

```
[ : solution,  
  [ [3, 4, 2, 1],  
    [2, 3, 1, 4],  
    [1, 2, 4, 3],  
    [4, 1, 3, 2]  
]
```

# Server

```
require 'rinda/tuplespace'
```

```
URI = ARGV[0] || "druby://0.0.0.0:61676"
```

```
DRb.start_service(URI, Rinda::TupleSpace.new)
```

```
DRb.thread.join
```

# Generator



```
#!/usr/bin/env ruby

require 'rinda/rinda'

SIZE = ARGV[0].to_i || 6
URI = ARGV[1] || "druby://0.0.0.0:61676"
DRb.start_service
ts = Rinda::TupleSpaceProxy.new(DRbObject.new(nil, URI))

permutates = (1..SIZE).to_a.permutation.map { |n| n }
permutates.permutation(SIZE).each do |n|
  ts.write([:possibility, n])
end
```

# Checker

```
require 'rinda/rinda'
require 'pp'

URI = ARGV[0] || "druby://0.0.0.0:61676"
DRb.start_service
ts = Rinda::TupleSpaceProxy.new(DRbObject.new(nil, URI))

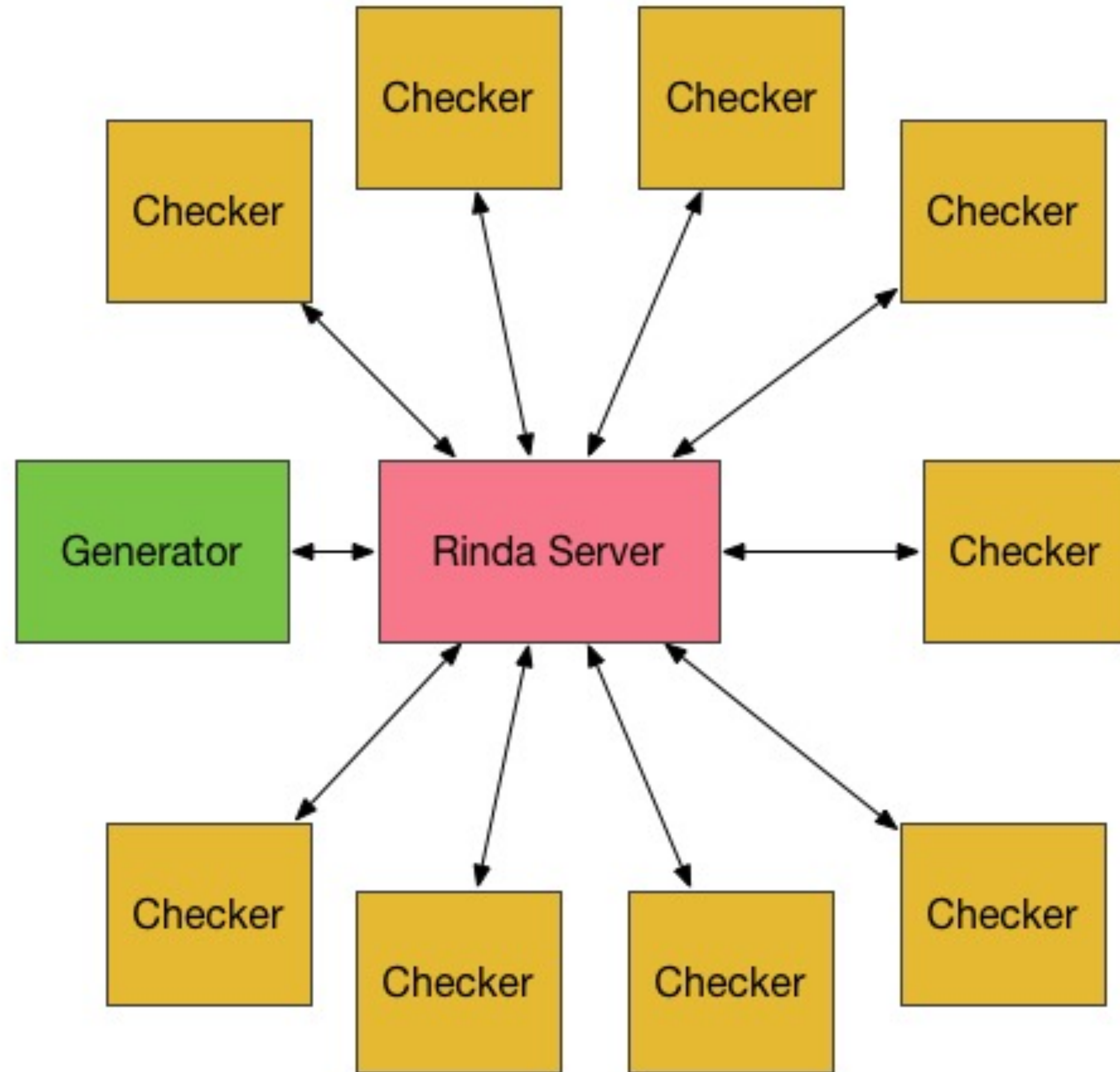
loop do
  _, solution = ts.take([:possiblity, Array]) ←
  size = solution[0].length
  example = (1..size).to_a

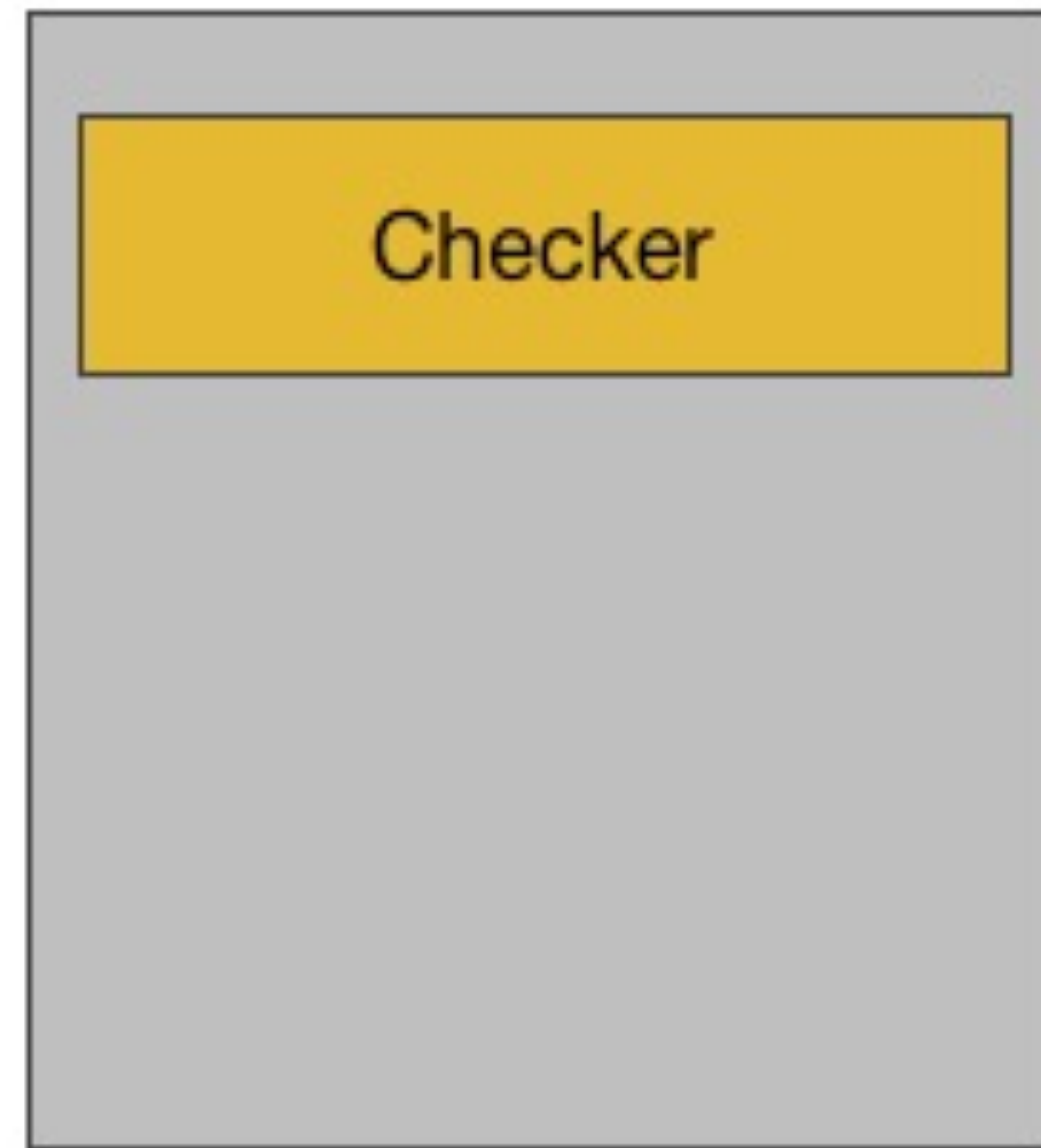
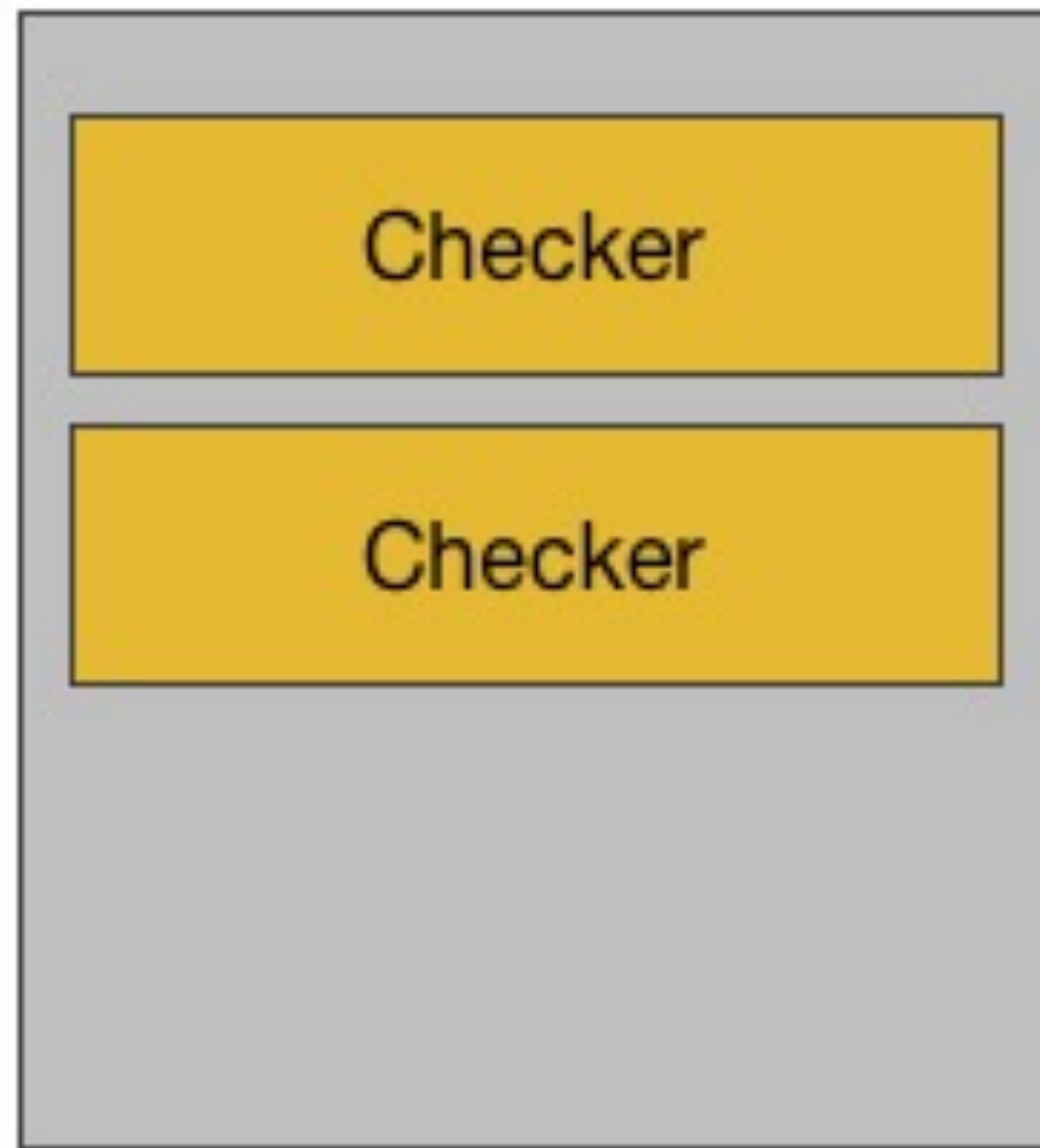
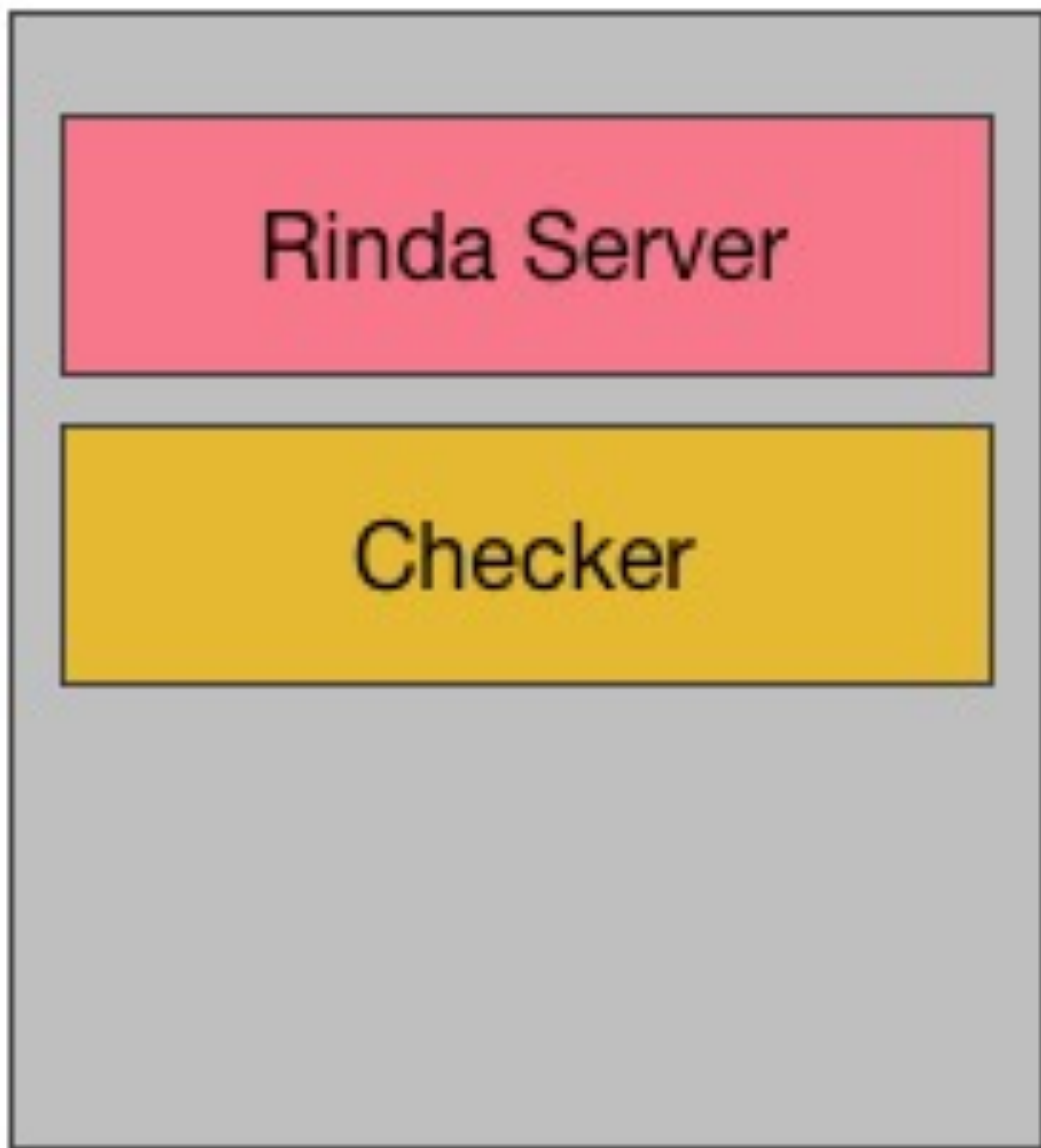
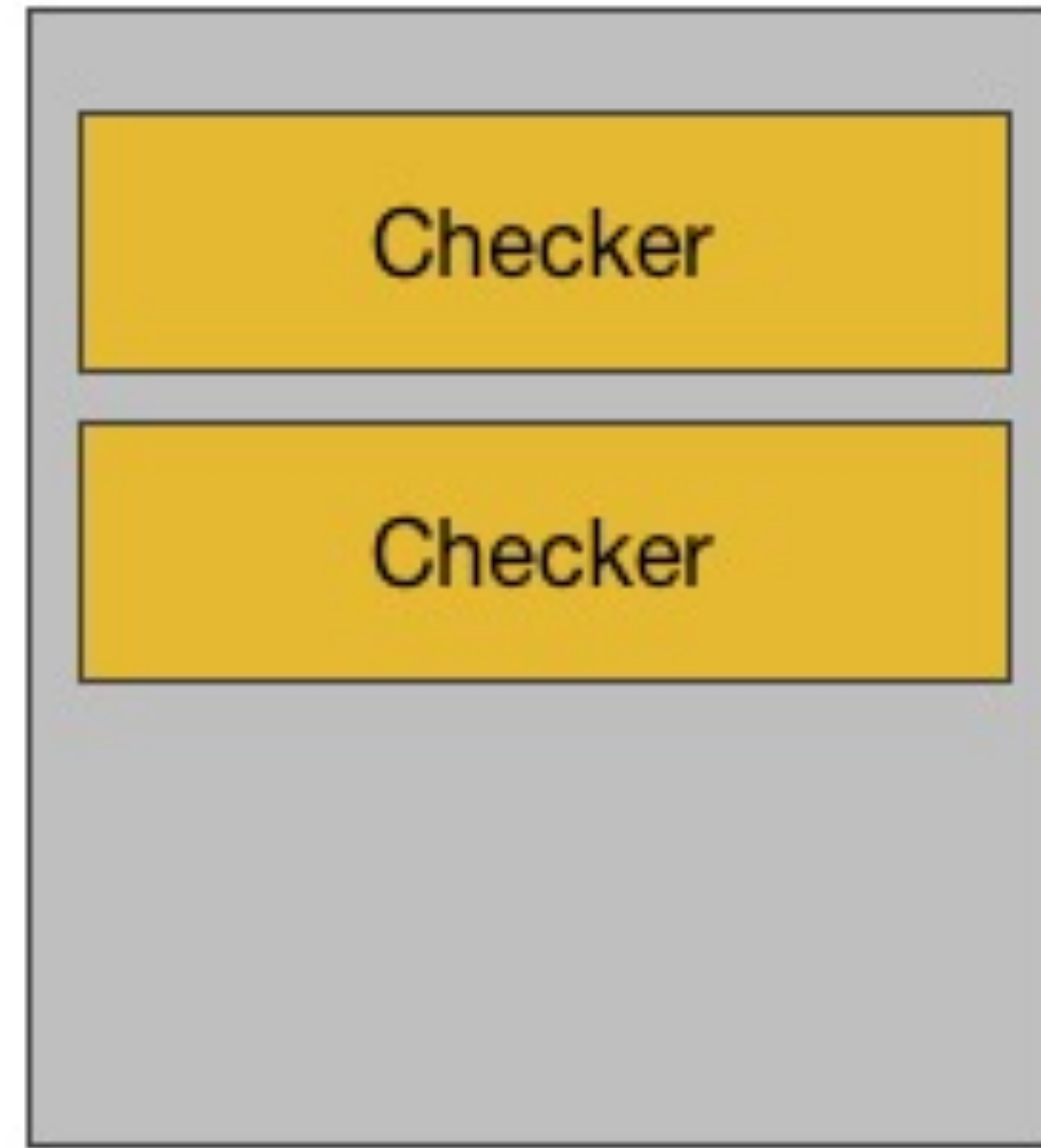
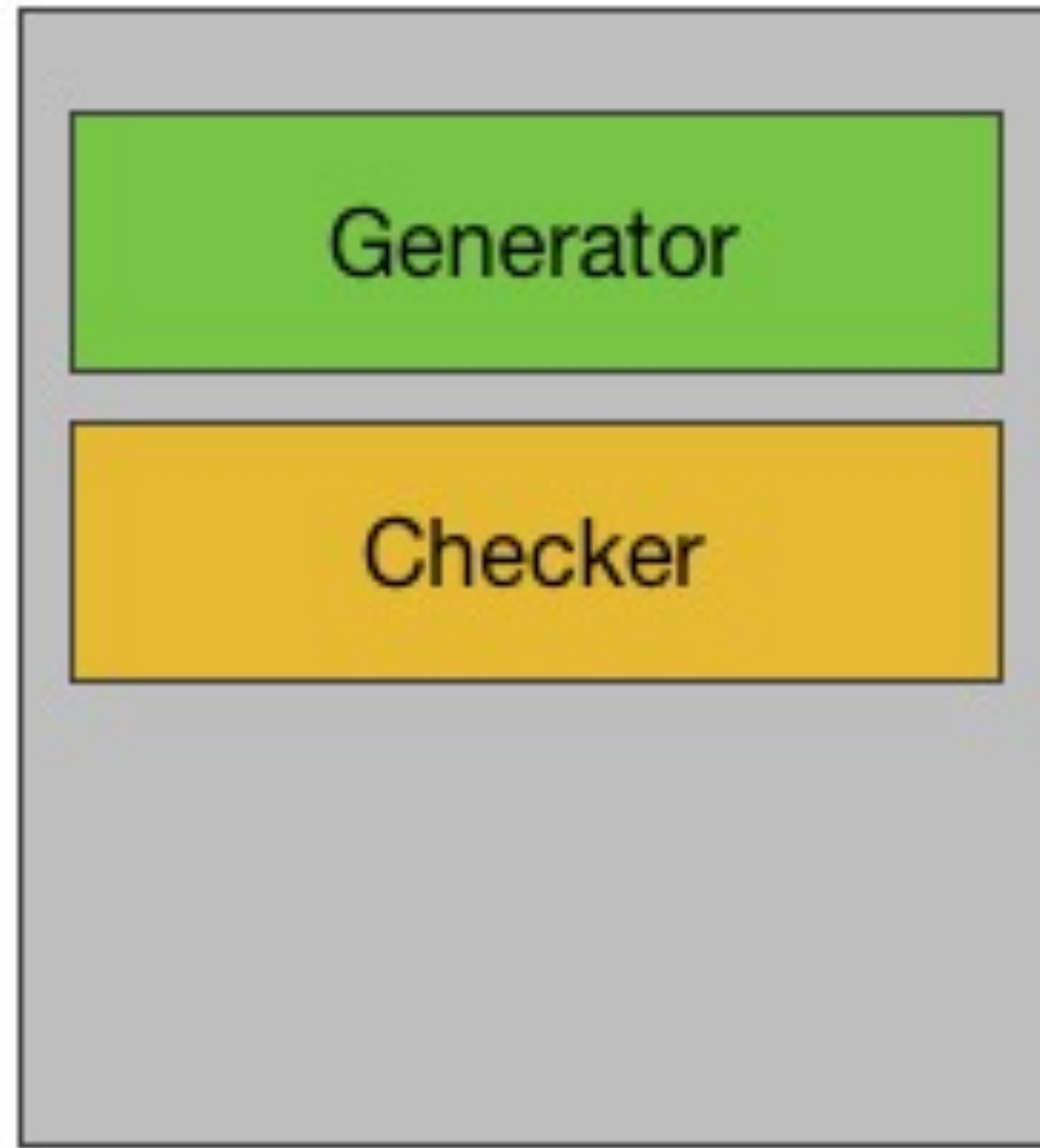
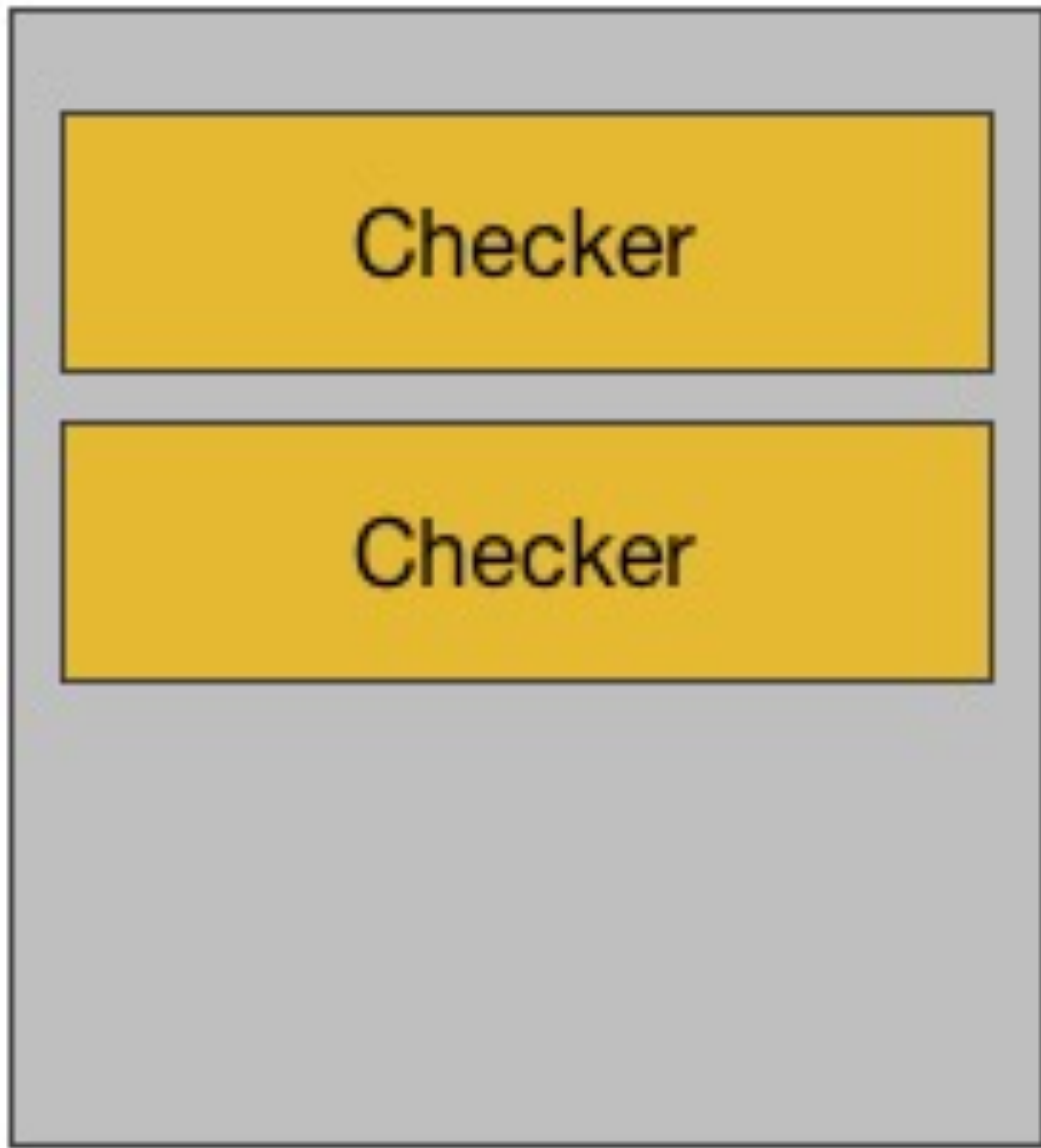
  correct = solution.all? { |row| row.sort == example } &&
            solution.transpose.all? { |col| col.sort == example }

  if correct then
    ts.write([:solution, solution])
    pp solution
    break
  end
end
```

# Deployment

Same As Before







# Logging

Logs Exports Metrics

text:### x

Compute Engine, All resource types, All res... All logs Any log level Up to: Nov 10, 2015, 10:57:28 AM PST



2015-11-10			Scanned: 2015-11-10 (10:57:28) - 2015-11-10 (10:57:28)	View Options
gke-latin-d23f4847-no...	10:57:28.000	{"log": "### [[1, 2, 3, 4, 5, 6, 7, 8, 9], [1, 2, 3, 4, 5, 6, 7, 9, 8], [1, 2, 3, 4, 5, 6, 8, 7, 9], [1, 2, 3, 4, ...		
gke-latin-d23f4847-no...	10:57:28.000	{"log": "### [[1, 2, 3, 4, 5, 6, 7, 8, 9], [1, 2, 3, 4, 5, 6, 7, 9, 8], [1, 2, 3, 4, 5, 6, 8, 7, 9], [1, 2, 3, 4, ...		
gke-latin-d23f4847-no...	10:57:28.000	{"log": "### [[1, 2, 3, 4, 5, 6, 7, 8, 9], [1, 2, 3, 4, 5, 6, 7, 9, 8], [1, 2, 3, 4, 5, 6, 8, 7, 9], [1, 2, 3, 4, ...		
gke-latin-d23f4847-no...	10:57:28.000	{"log": "### [[1, 2, 3, 4, 5, 6, 7, 8, 9], [1, 2, 3, 4, 5, 6, 7, 9, 8], [1, 2, 3, 4, 5, 6, 8, 7, 9], [1, 2, 3, 4, ...		
gke-latin-d23f4847-no...	10:57:28.000	{"log": "### [[1, 2, 3, 4, 5, 6, 7, 8, 9], [1, 2, 3, 4, 5, 6, 7, 9, 8], [1, 2, 3, 4, 5, 6, 8, 7, 9], [1, 2, 3, 4, ...		
gke-latin-d23f4847-no...	10:57:28.000	{"log": "### [[1, 2, 3, 4, 5, 6, 7, 8, 9], [1, 2, 3, 4, 5, 6, 7, 9, 8], [1, 2, 3, 4, 5, 6, 8, 7, 9], [1, 2, 3, 4, ...		
gke-latin-d23f4847-no...	10:57:28.000	{"log": "### [[1, 2, 3, 4, 5, 6, 7, 8, 9], [1, 2, 3, 4, 5, 6, 7, 9, 8], [1, 2, 3, 4, 5, 6, 8, 7, 9], [1, 2, 3, 4, ...		
gke-latin-d23f4847-no...	10:57:28.000	{"log": "### [[1, 2, 3, 4, 5, 6, 7, 8, 9], [1, 2, 3, 4, 5, 6, 7, 9, 8], [1, 2, 3, 4, 5, 6, 8, 7, 9], [1, 2, 3, 4, ...		
gke-latin-d23f4847-no...	10:57:28.000	{"log": "### [[1, 2, 3, 4, 5, 6, 7, 8, 9], [1, 2, 3, 4, 5, 6, 7, 9, 8], [1, 2, 3, 4, 5, 6, 8, 7, 9], [1, 2, 3, 4, ...		
gke-latin-d23f4847-no...	10:57:28.000	{"log": "### [[1, 2, 3, 4, 5, 6, 7, 8, 9], [1, 2, 3, 4, 5, 6, 7, 9, 8], [1, 2, 3, 4, 5, 6, 8, 7, 9], [1, 2, 3, 4, ...		
gke-latin-d23f4847-no...	10:57:28.000	{"log": "### [[1, 2, 3, 4, 5, 6, 7, 8, 9], [1, 2, 3, 4, 5, 6, 7, 9, 8], [1, 2, 3, 4, 5, 6, 8, 7, 9], [1, 2, 3, 4, ...		
gke-latin-d23f4847-no...	10:57:28.000	{"log": "### [[1, 2, 3, 4, 5, 6, 7, 8, 9], [1, 2, 3, 4, 5, 6, 7, 9, 8], [1, 2, 3, 4, 5, 6, 8, 7, 9], [1, 2, 3, 4, ...		
gke-latin-d23f4847-no...	10:57:28.000	{"log": "### [[1, 2, 3, 4, 5, 6, 7, 8, 9], [1, 2, 3, 4, 5, 6, 7, 9, 8], [1, 2, 3, 4, 5, 6, 8, 7, 9], [1, 2, 3, 4, ...		





# Profound Thoughts

# Useful

~~Useful~~

Well Engineered

~~Well Engineered~~

# Correct Tool

~~Correct Tool~~



Fun

Yes

# Fast

# Power

# Computer?

# Limits

Distributed Systems  
Are  
Fun & Easy

Fun



Thank You

Ryan Davis  
Scott Windsor  
Eric Hodel  
Brian Dorsey



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thagomizer@google.com