Rails from the Ground Up!

with Jared Richardson
RoleModel Software

Networking
Part One
Talking over the Wire

We have...

A working console app

But that's boring

Let's play another machine!

Ruby Sockets

Abstracted

Powerful

Open 2 irb sessions

In both sessions

```
require 'socket'

host = "127.0.0.1"

port = "9999"
```

Server Sockets

```
server = TCPServer.open(port)

socket = server.accept

while line = socket.gets

  puts line

end
```

Client Socket

```
s = TCPSocket.open(host, port)

s.puts("Hello world")
```

War v2.0

Write a server

Write a client

War v2.0 Server

ruby war-server.rb <port> [<hands_to_play>]

hands_to_play is optional

default to infinity

War v2.0 Client

ruby war-client.rb <port> [<hands_to_play>]

Then Play Each Other

War v3.0

A threaded server

Handles multiple clients

```ruby
server = TCPServer.open(port)

loop do

  s = server.accept

  # start a thread to handle the client

  Thread.start do

    while line = s.gets

      puts line.chomp + " from #{s.addr[3]}"

    end

  end

end
```

War v3.0

ruby war-server.rb <port> [<hands_to_play>]

ruby war-clients.rb <port> [<hands_to_play>]
[<threads_to_play>]

More on Sockets

```
s=TCPSocket.new(Socket::AF_INET,Socket::SOCK_STREAM, 0)

opt=[1, 0].pack("i,i")

s.setsockopt(Socket::SOL_SOCKET, Socket::SO_RCVTIMEO, opt)
```

Whut?

Ruby sockets accept most C options

Native implementation

Very fast

Your Turn

Code a simple web server

Web Server

Listens on port 80

Reads document request (e.g. index.html)

Reads files from the "HTML" directory

Passes contents to the client

Threaded

Test with your web browser

Testing?

How do we test web applications?

runit

put *a* known file on disk

socket connection

ask for the file

check the contents

write it

Your Turn

Write a time server

Threaded

Tested

"Raw" time on port 123

HTML page on port 80

Serve time UTC time

http://en.wikipedia.org/wiki/Network_Time_Protocol

Next...

Networked apps with Sinatra

Re-Cap

Arrays & Hashes

Deck of cards (objects)

Rake (skimmed)

Networking (skimmed)

Installed Rails & Sinatra