

Polyglot

Parallelism

A Case Study in Using
Erlang and Ruby
at Rackspace



Foundation
Development
And
Automation
Team

F D A A T

What

We

Do



**Through automation,
Adapt and collaborate
Deliver Software**

Basics

Backup

Update

New Configs

Advanced

API backing MyRackspace FWM

API backing NTaaS

API for VLAN assignments

Ruby



mongo**DB**

The Environment





50,000

Network

DeVICES

Firewalls

Cisco ASA

Cisco Pix

Juniper SRX

Load Balancers

Cisco CSS

F5 BigIP

Brocade ADX

RedHill WebMux

Cisco ACE

Switches

Cisco Catalyst 2950

Cisco Catalyst 2960

Cisco Catalyst 4948

8 Datacenters

3 Continents

North America

Europe

Asia

The Challenges






Performance



Transparency



Multiple Device Types




Management Interfaces

Where

We

Started





Multiple Rails Applications



MySQL



Vendor Device Managers



3rd
Party
Solutions

Where

We

Are

Today



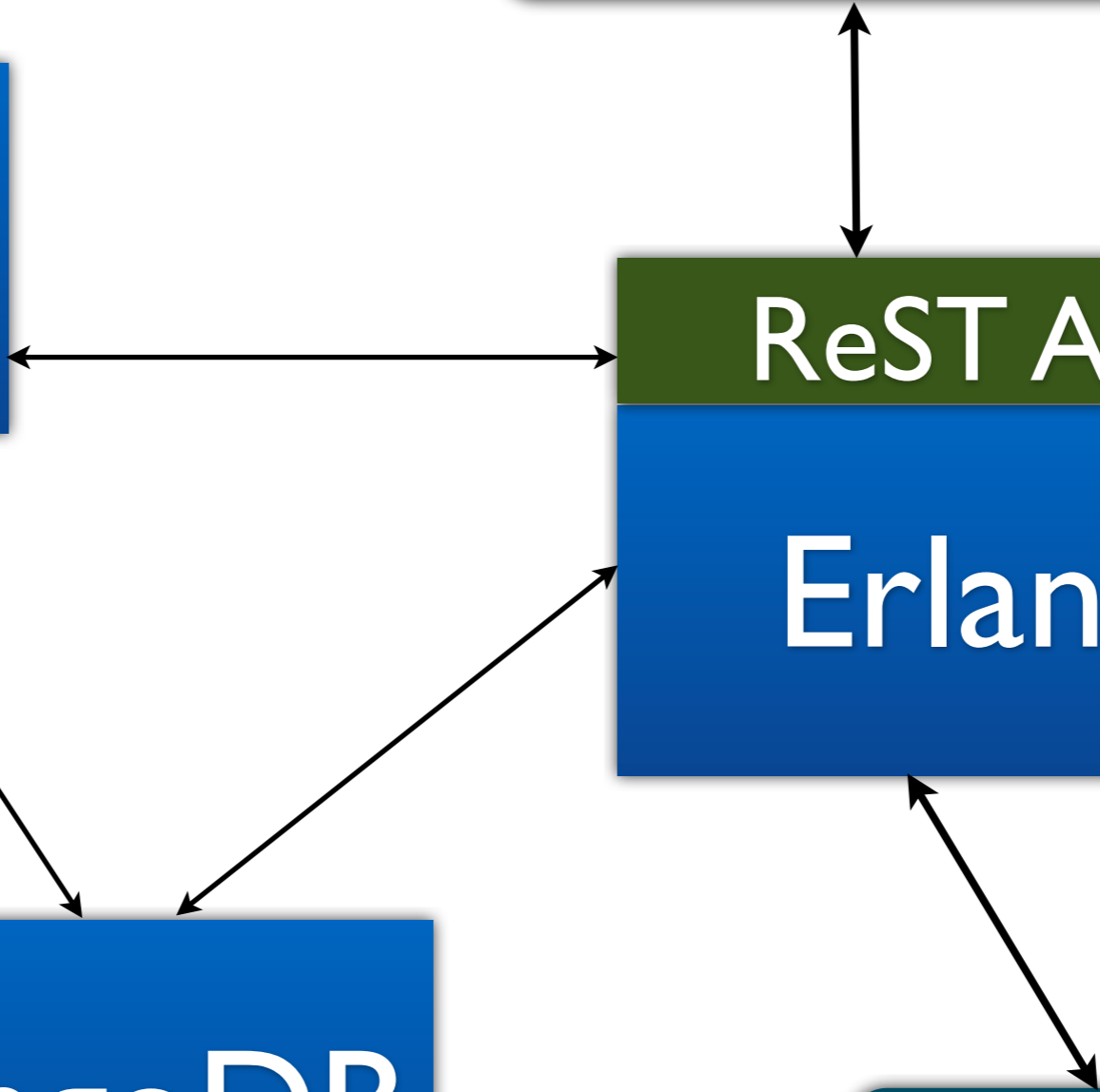
Other Clients

Rails

ReST API
Erlang

MongoDB

Network
Devices



Results

Device interactions are fast & reliable

Full Transparency

Better foundation for growth

Current Backups (98.0%)

[Backup Archives »](#)

Name	Status	Devices	Started at	Ended at	% Successful
Backup job for HKG1	complete	494	March 27, 2012 12:00	March 27, 2012 12:05	96.6
Backup job for DFW1	complete	6986	March 27, 2012 02:30	March 27, 2012 03:08	98.4
Backup job for IAD2	complete	1261	March 27, 2012 02:00	March 27, 2012 02:06	99.0
Backup job for IAD1	complete	1238	March 27, 2012 01:30	March 27, 2012 01:43	98.0
Backup job for ORD1	complete	4343	March 27, 2012 01:00	March 27, 2012 01:20	96.9
Backup job for LON3	complete	5624	March 26, 2012 19:15	March 26, 2012 19:51	98.3
Backup job for LON1	complete	179	March 26, 2012 19:00	March 26, 2012 19:01	98.9

Errors (404 / 20125)

[Download CSV](#)

Date	Type	Category	Status
<u>March 27, 2012 02:41</u>	Backup	device.backup	success - no_changes
<u>March 26, 2012 02:43</u>	Backup	device.backup	success - no_changes
<u>March 25, 2012 02:40</u>	Backup	device.backup	success - no_changes
<u>March 24, 2012 02:40</u>	Backup	device.backup	success - no_changes
<u>March 23, 2012 02:40</u>	Backup	device.backup	success - no_changes
<u>March 22, 2012 02:40</u>	Backup	device.backup	success - changes_saved
<u>March 21, 2012 07:55</u>	Update	device.update	success - completed
<u>March 21, 2012 07:13</u>	API	fwcp.update	success - config_updated
<u>March 21, 2012 07:09</u>	API	fwcp.query	success - config_retrieved

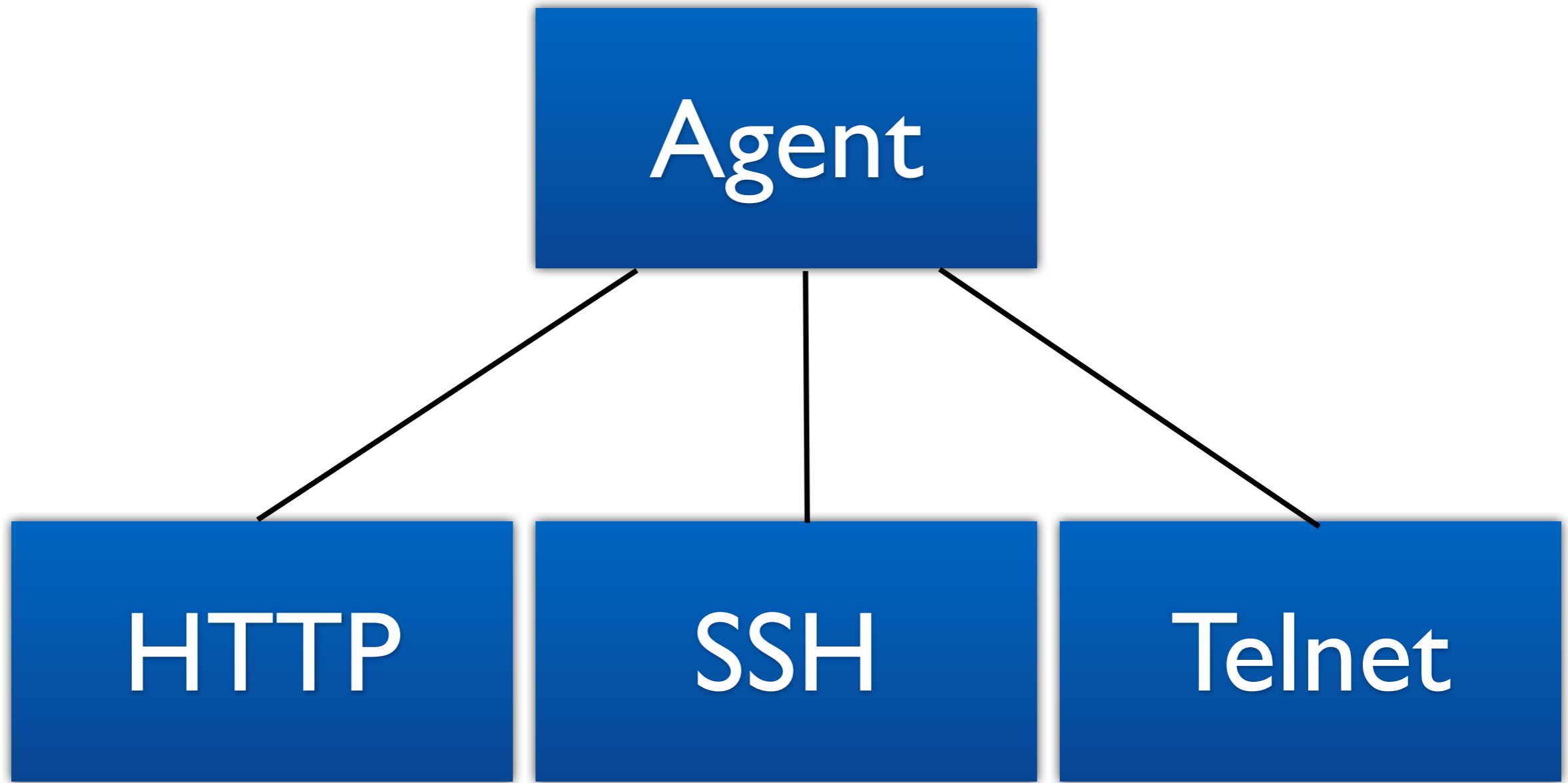
Device ID:	<u>188571</u>	
Date:	March 22, 2012 02:40	
Started At:	2012-03-22 02:40:06	
Ended At:	2012-03-22 02:40:22	
Type:	Backup	
Category:	device.backup	
User:	System	
Status:	success	
Result:	changes_saved	
Details:	prepare	ok - successful
	ha_status	ok - none
	version	ok - stored
	running-config	ok - <u>saved</u>
	finalize	ok - successful



Details



Command Line Automation





Ruby Scripts

```
module Hello
  def say_hello
    "Hello, World!"
  end
end

GenScript.expose(:hello, Hello)
```

```
{ok, Pid} = gen_script:start(hello,  
                             {ruby, "hello.rb"}).
```

```
<<"Hello, World!">> =  
  gen_script:call(Pid, hello, []).
```

```
gen_script:stop(Pid).
```

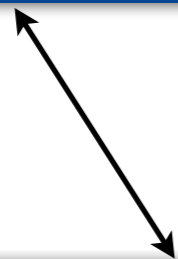


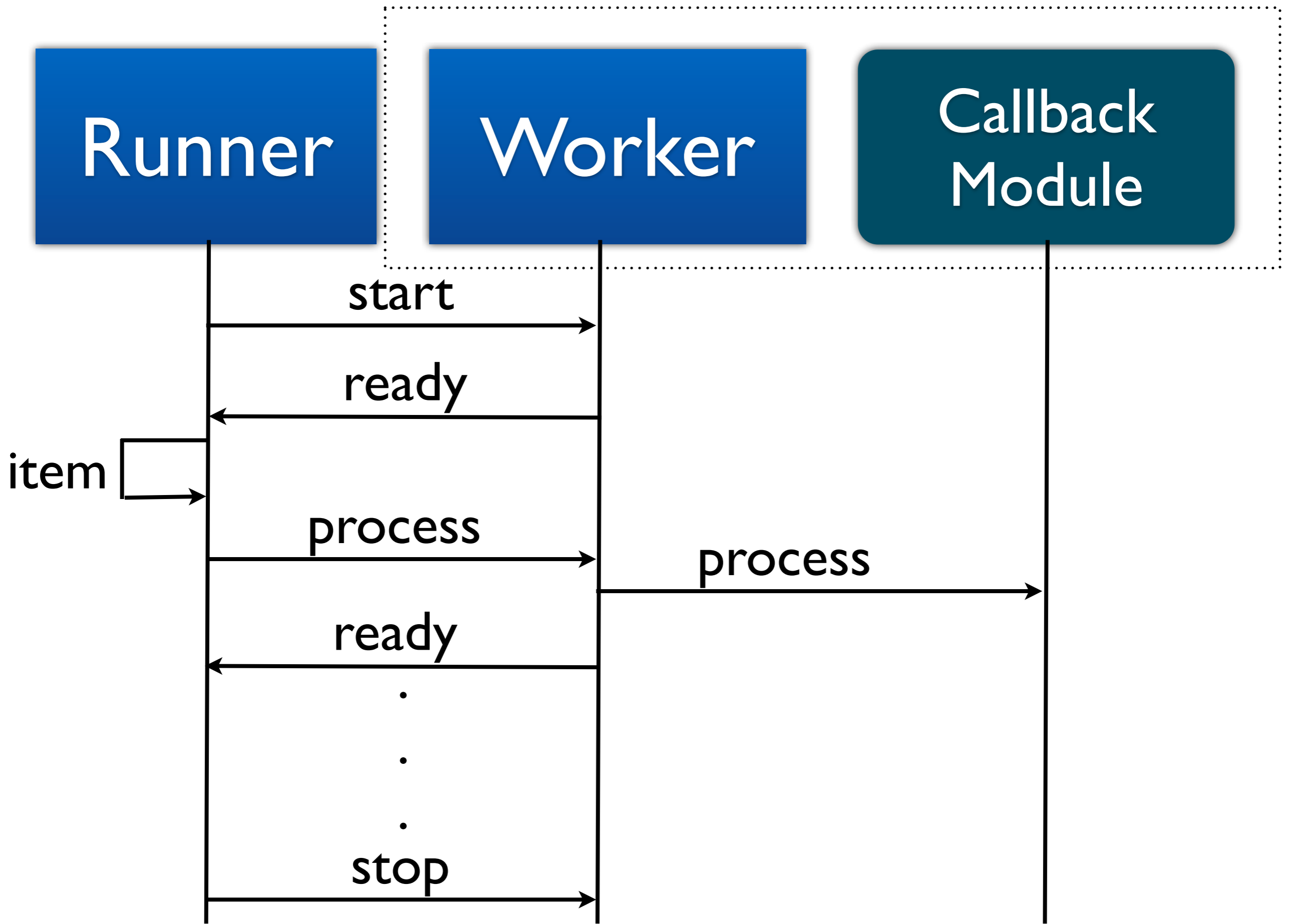
Batch Jobs

Runner

Workers

Callback Module

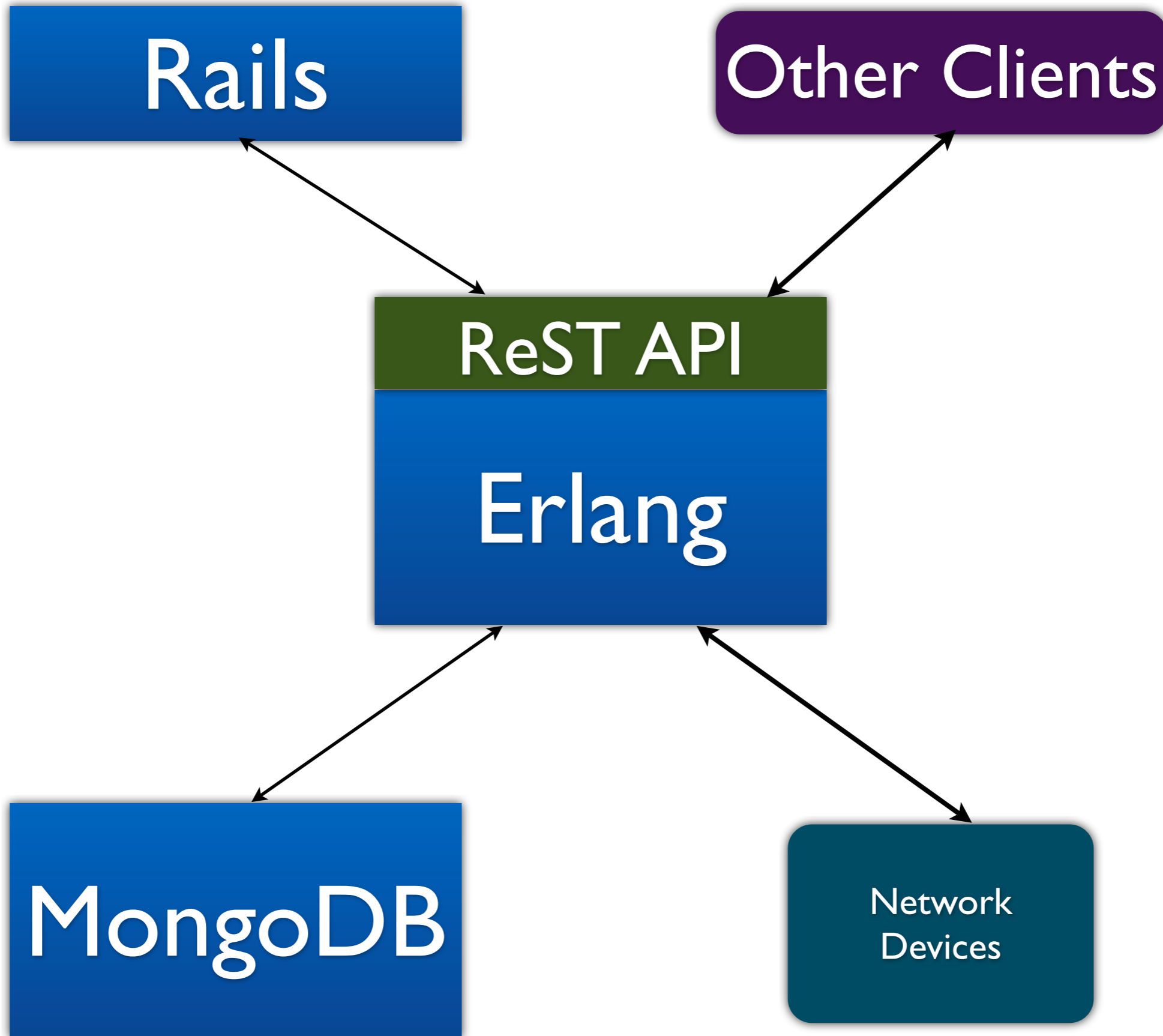






What's

Next



How
We
Got
Here



Objections

Erlang is weird

You can't find Erlang programmers

If you use Erlang you will fail

Open Source



Questions



Twitter: @philtoland

GitHub: github.com/toland

Blog: philtoland.com