SET UP YOUR OWN PRERENDER SERVICE

WITH AWS OPSWORKS

INTRODUCTION – JACOB SENECAL

- Senior Developer at PartCycle Technologies
- I work primarily on backend / Rails development
- Lots of infrastructure and process automation
- We also use Heroku, Ember, Postgres…

PARTCYCLE
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github.com/jakesen

WHAT IS AWS OPSWORKS

- Amazon Web Services' tool for managing applications and servers
- It allows you to configure a Stack comprised of Layers, Apps and Instances
- The Stack can be configured using Chef recipes and cookbooks
- The instances are EC2 (Elastic Compute Cloud) virtualized servers

WHAT IS PRERENDER

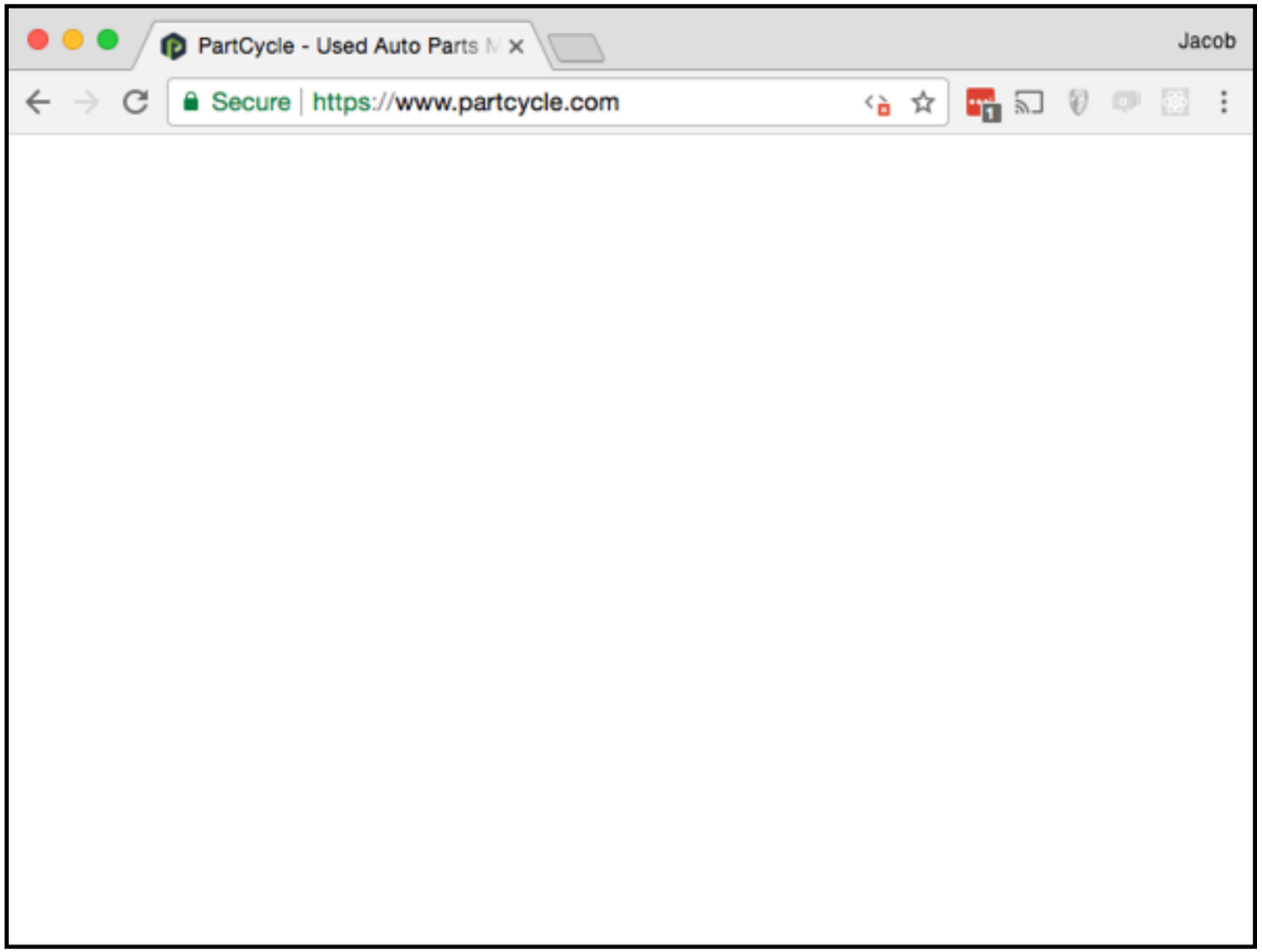
- Open source Node.js application for converting JS rendered pages to pure HTML on demand
- It uses Phantom.js to render pages in Chromium
- It uses the prerender middleware to intercept requests from search bots (available for Rails, Express, etc)
- You can also use the paid service at Prerender.io
- More info and documentation at http://github.com/prerender/prerender

WHAT WE'RE GOING DO

- Create a github repo containing our customized prerender app
- Create a deploy key
- Set up an OpsWorks stack in Amazon Web Services
- Deploy and test our app!
- Demo app: https://github.com/jakesen/prerender-opsworks-demo

...AND WHY...

- Client rendered pages aren't recognized by Search bots
- While Google has been working on JS support, it doesn't always work
- Assume the worst - search bots won't run JS



OPSWORKS NODE.JS APP REQUIREMENTS

- Must have server.js
- Must have package.json
- Must listen on port 80 or 443 or env.PORT

GETTING STARTED

- Prerender suggests using a clone or fork of the prerender repo
- You can also create a new node project that imports prerender
- > npm init
- > npm install prerender –save

{} package.json ×

```
1  {
2    "name": "prerender-opsworks-demo",
3    "version": "1.0.0",
4    "description": "Demonstration of setting up Prerender for AWS OpsWorks",
5    "main": "index.js",
6    "scripts": {
7      "test": "echo \"Error: no test specified\" && exit 1"
8    },
9    "repository": {
10     "type": "git",
11     "url": "git+https://github.com/jakesen/prerender-opsworks-demo.git"
12   },
13   "author": "Jacob Senecal",
14   "license": "MIT",
15   "bugs": {
16     "url": "https://github.com/jakesen/prerender-opsworks-demo/issues"
17   },
18   "homepage": "https://github.com/jakesen/prerender-opsworks-demo#readme",
19   "dependencies": {
20     "prerender": "^4.4.1"
21   }
22 }
23
```

COPY SERVER

- Create a new file named server.js (this is the filename required by OpsWorks App Layer)
- Copy the contents of server.js from pre-render
- Ignore optional plugins (for now)

server.js

```
#!/usr/bin/env node
var prerender = require('prerender');

var server = prerender({
    workers: process.env.PRERENDER_NUM_WORKERS,
    iterations: process.env.PRERENDER_NUM_ITERATIONS
});



server.use(prerender.sendPrerenderHeader());
// server.use(prerender.basicAuth());
// server.use(prerender.whitelist());
server.use(prerender.blacklist());
// server.use(prerender.logger());
server.use(prerender.removeScriptTags());
server.use(prerender.httpHeaders());
// server.use(prerender.inMemoryHtmlCache());
// server.use(prerender.s3HtmlCache());

server.start();
```

PROBLEM: HEALTH CHECKS WON'T WORK!

- The default configuration of prerender returns 5xx errors if no render url is provided
- The default OpsWorks chef recipes configure monit to send requests to the root path do determine the health of our Node.js layer
- The load balancer also needs to have a path for health checks

CUSTOMIZE SERVER

- Use the prerender **beforePhantomRequest** plugin handler to intercept requests without a url
- Return a success message and 200 status code

server.js

```js
#!/usr/bin/env node
var prerender = require('prerender');

var server = prerender({
    workers: process.env.PRERENDER_NUM_WORKERS,
    iterations: process.env.PRERENDER_NUM_ITERATIONS
});

server.use({
    beforePhantomRequest: function(req, res, next) {
        if(!req.url || req.url == '/') {
            req.prerender.documentHTML = "SERVICE AVAILABLE";
            return res.send(200);
        }
        next();
    }
});

server.use(prerender.sendPrerenderHeader());
// server.use(prerender.basicAuth());
// server.use(prerender.whitelist());
server.use(prerender.blacklist());
// server.use(prerender.logger());
server.use(prerender.removeScriptTags());
server.use(prerender.httpHeaders());
// server.use(prerender.inMemoryHtmlCache());
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server.start();
```
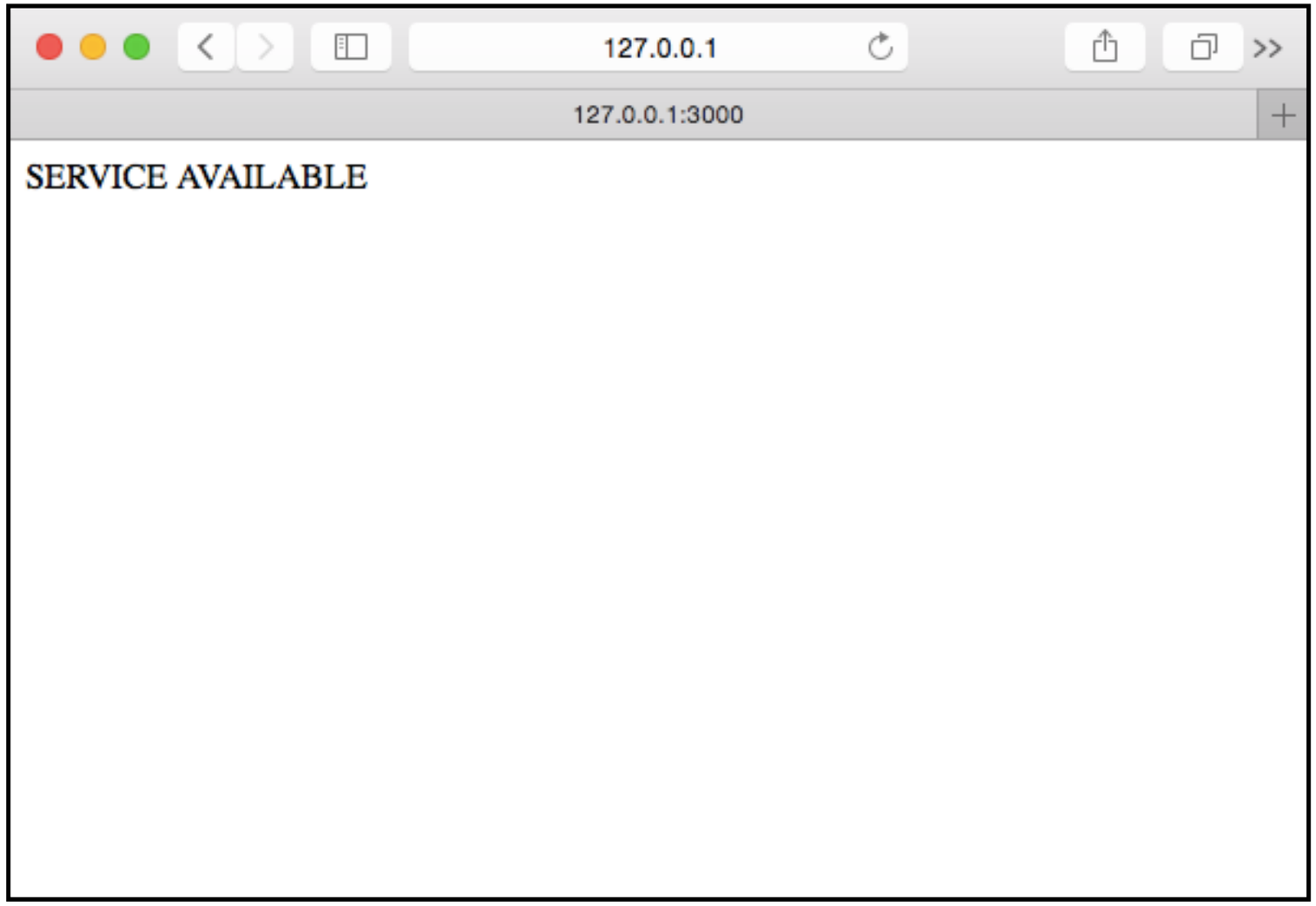
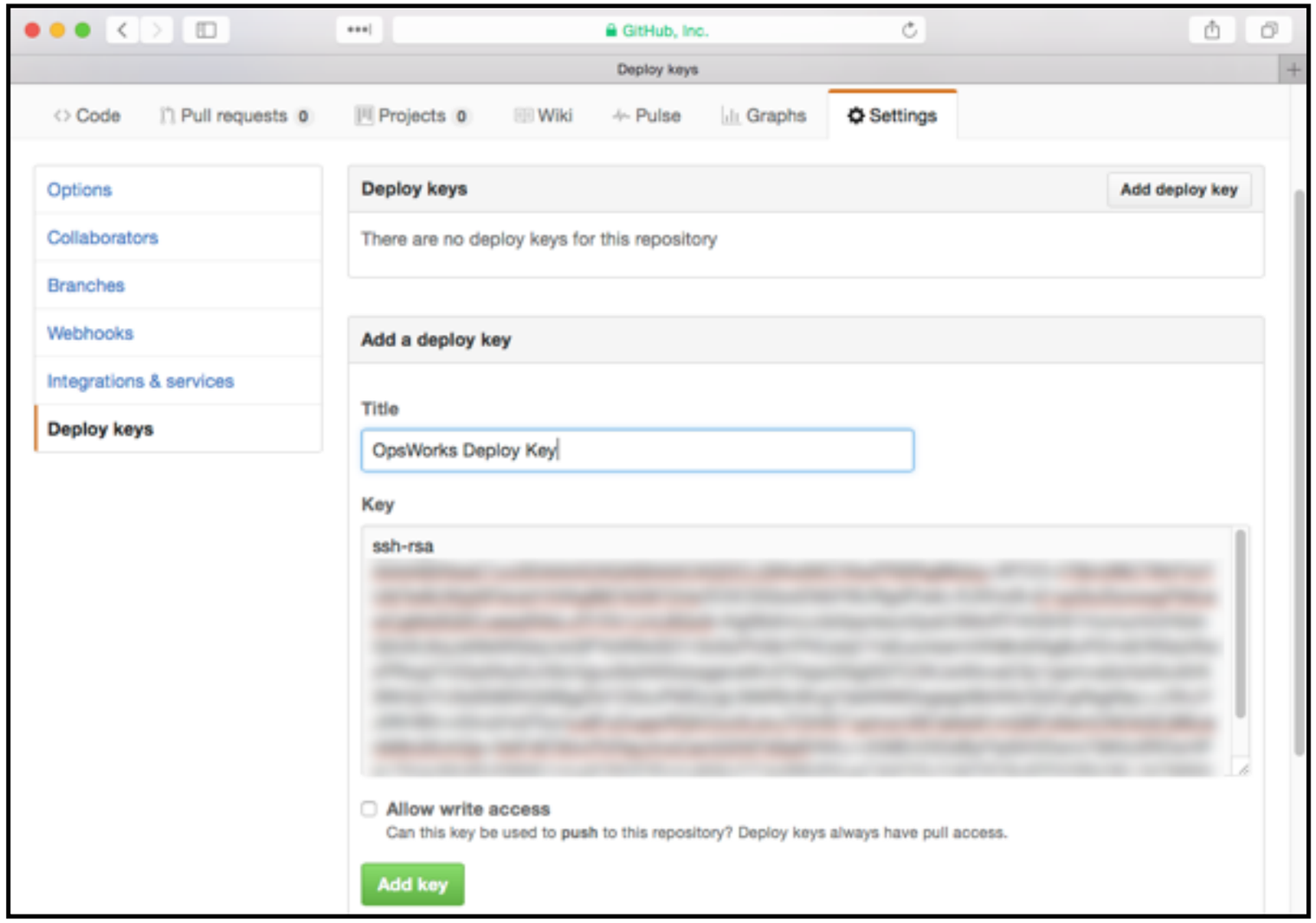

TEST LOCALLY

- > node server.js
- Open the local server in your browser
- Try adding a valid web URL as the path



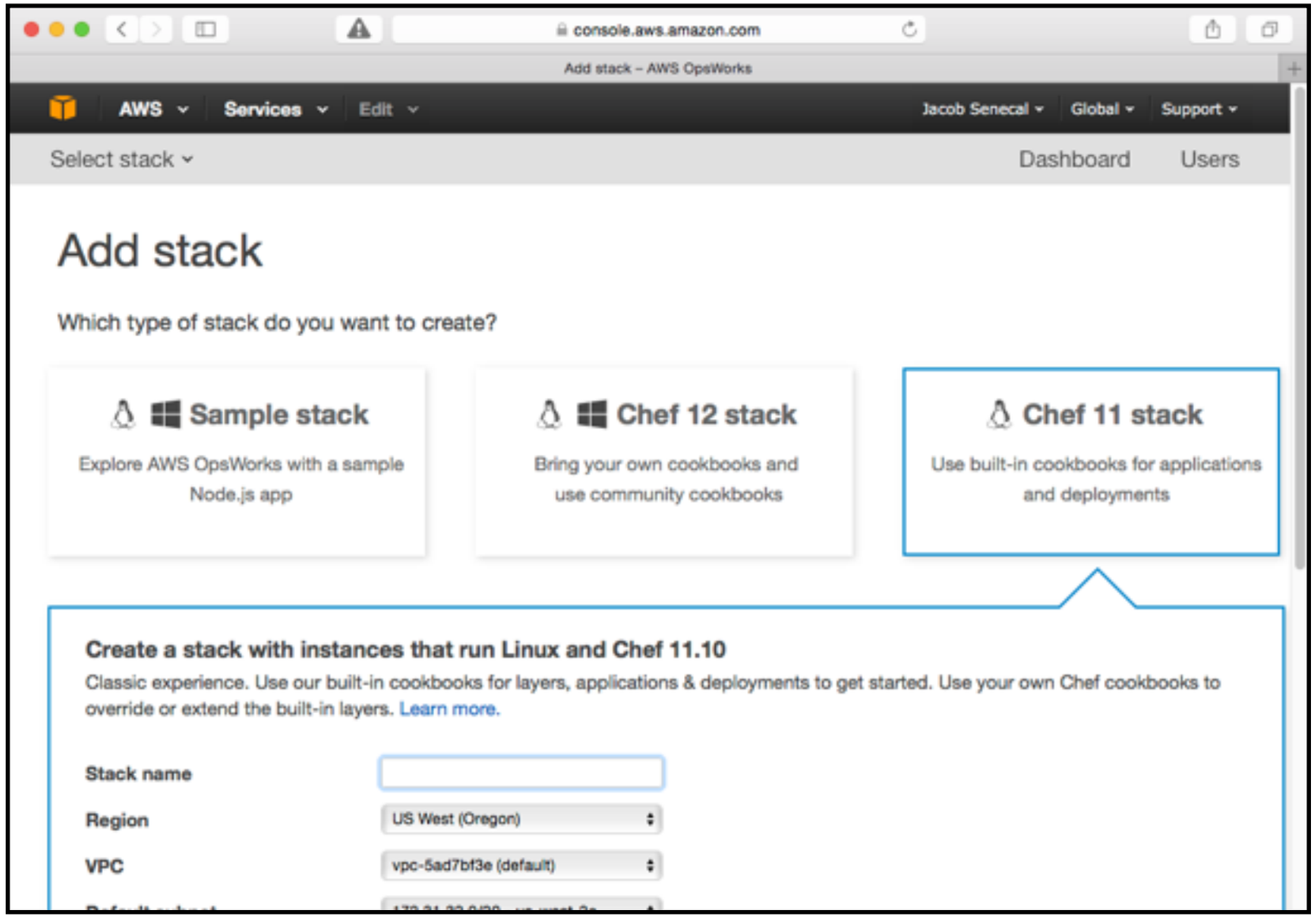
SET UP DEPLOY KEY

- Create a public/ private key pair
- Go to github repo Settings
- Add the public key to the repo's Deploy keys



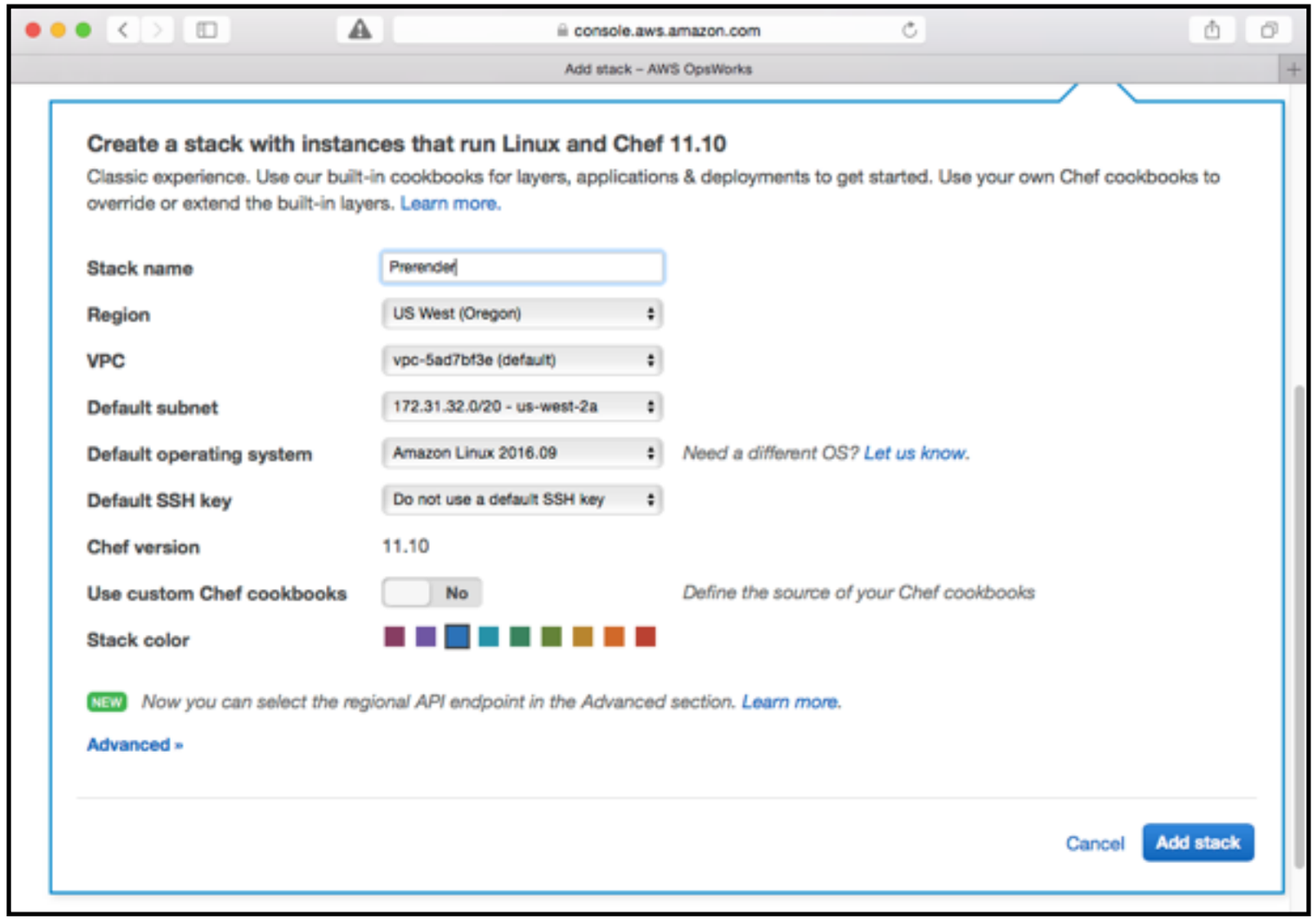
ADD OPSWORKS STACK

- Go to AWS OpsWorks dashboard
- Add stack, choose Chef 11



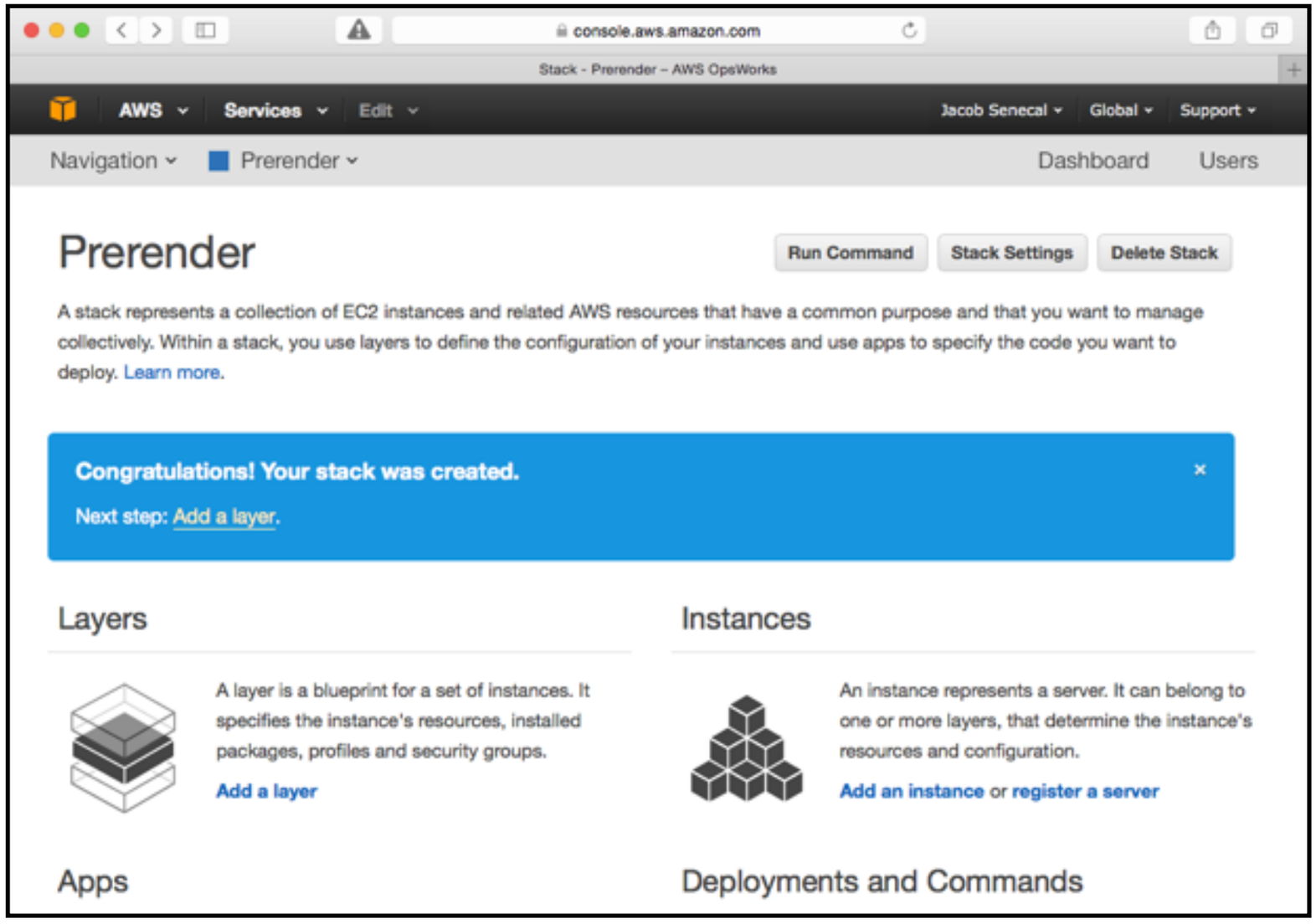
OPSWORKS STACK SETTINGS

- Give it a name
- Choose Region, VPC, etc (we'll use the defaults for this demo)



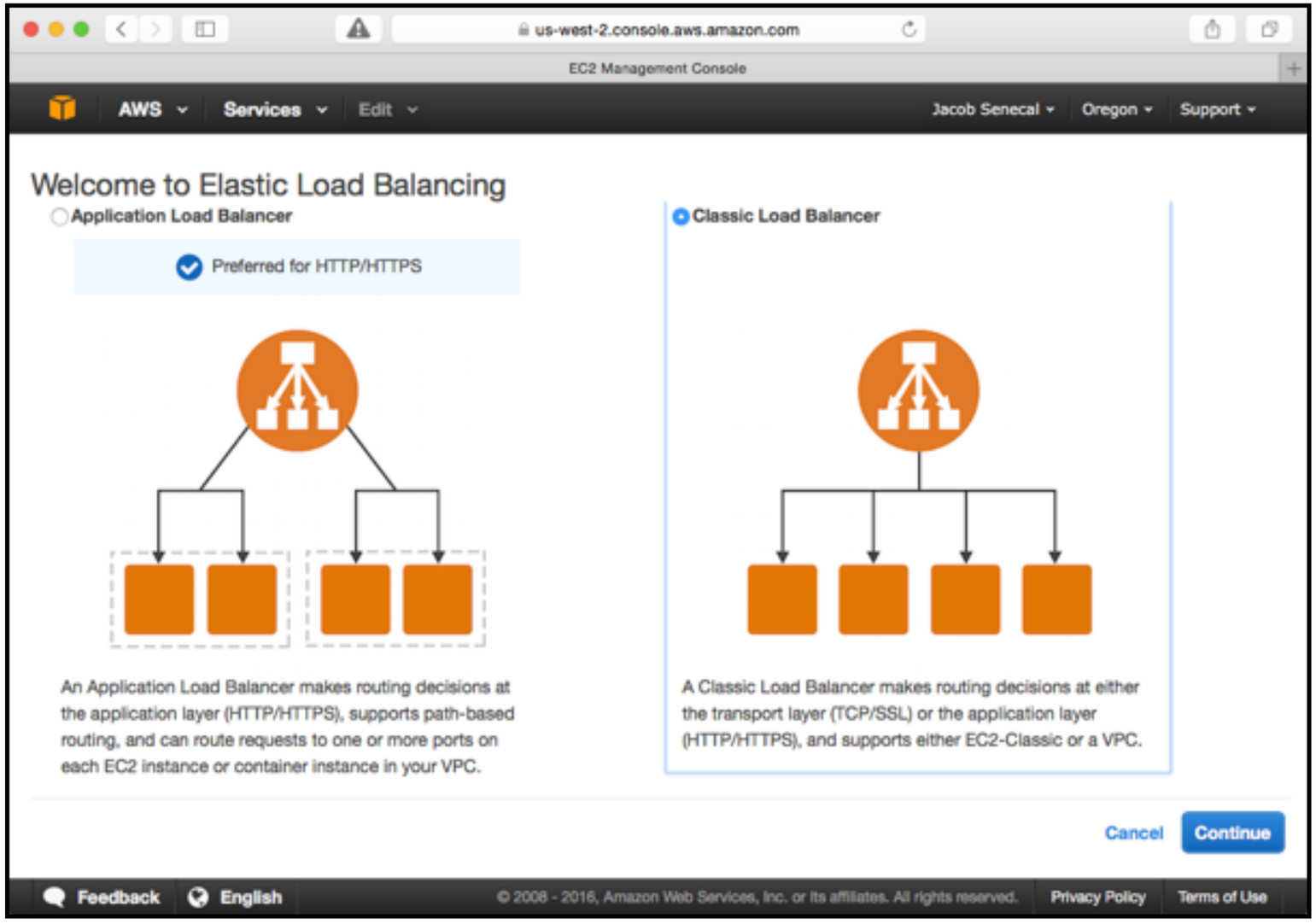
ALL DONE! (JK)

- Now we have a stack, but there's still lots to do
- Next, we need to add a layer
- But first…



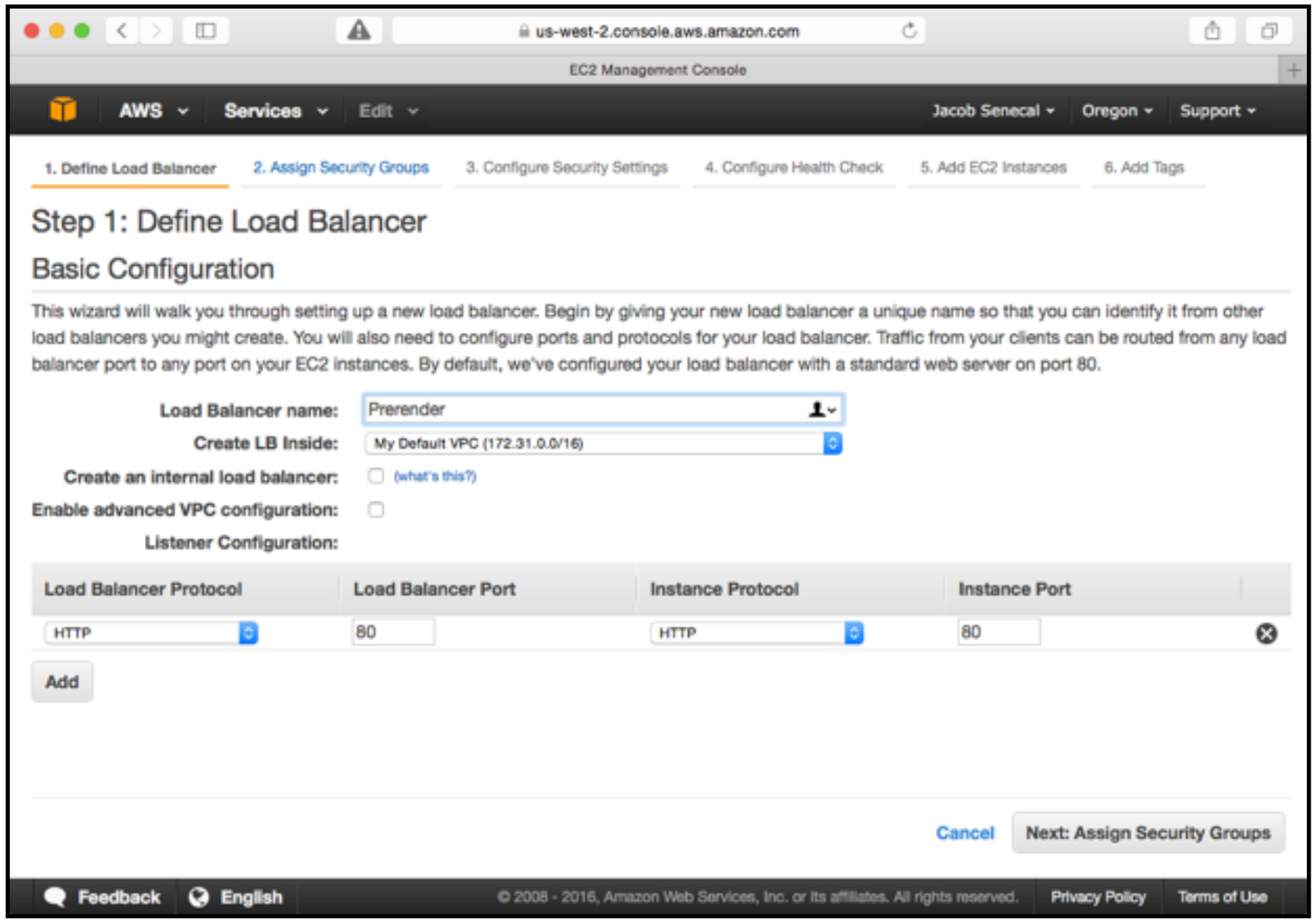
CREATE LOAD BALANCER

- Go to AWS EC2 dashboard
- Click Load Balancers from Nav menu
- Click Create Load Balancer
- Choose Classic Load Balancer



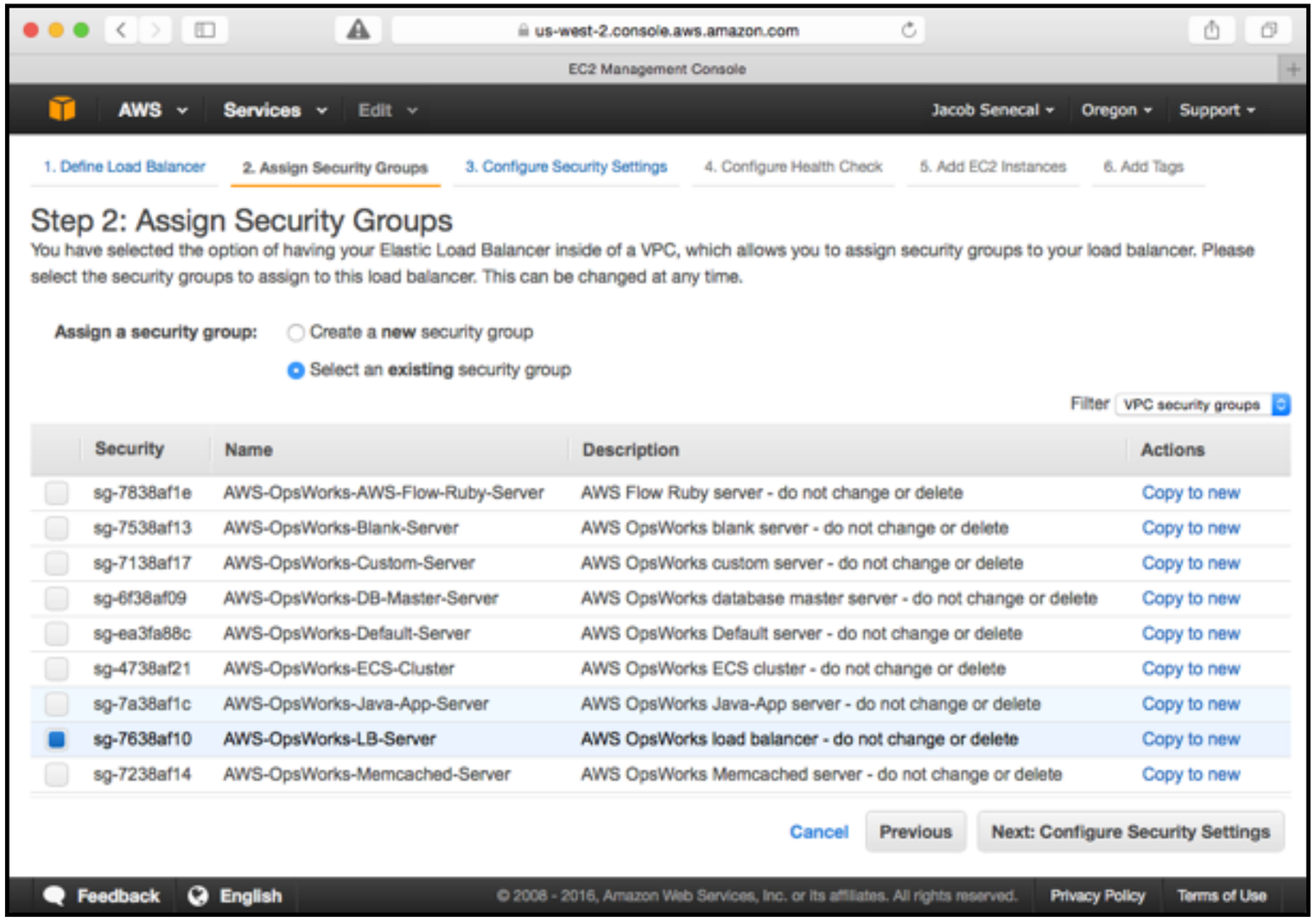
CONFIGURE LOAD BALANCER

- Give it a name
- Assign to same VPC as OpsWorks stack
- Configure protocols (Needed if you want SSL support, etc)



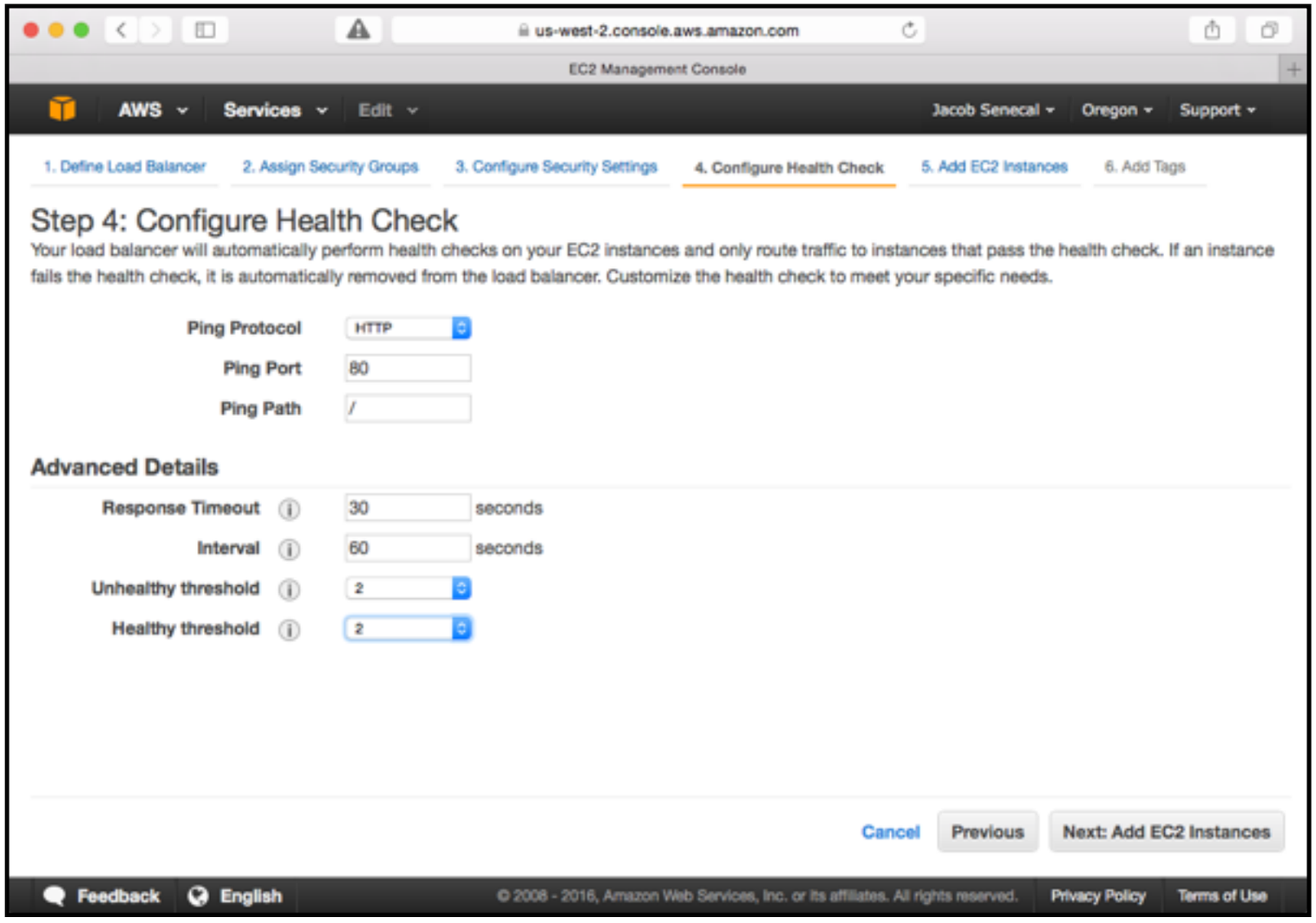
CONFIGURE LOAD BALANCER

- Assign security group (conveniently created by OpsWorks!)
- We'll skip Step 3



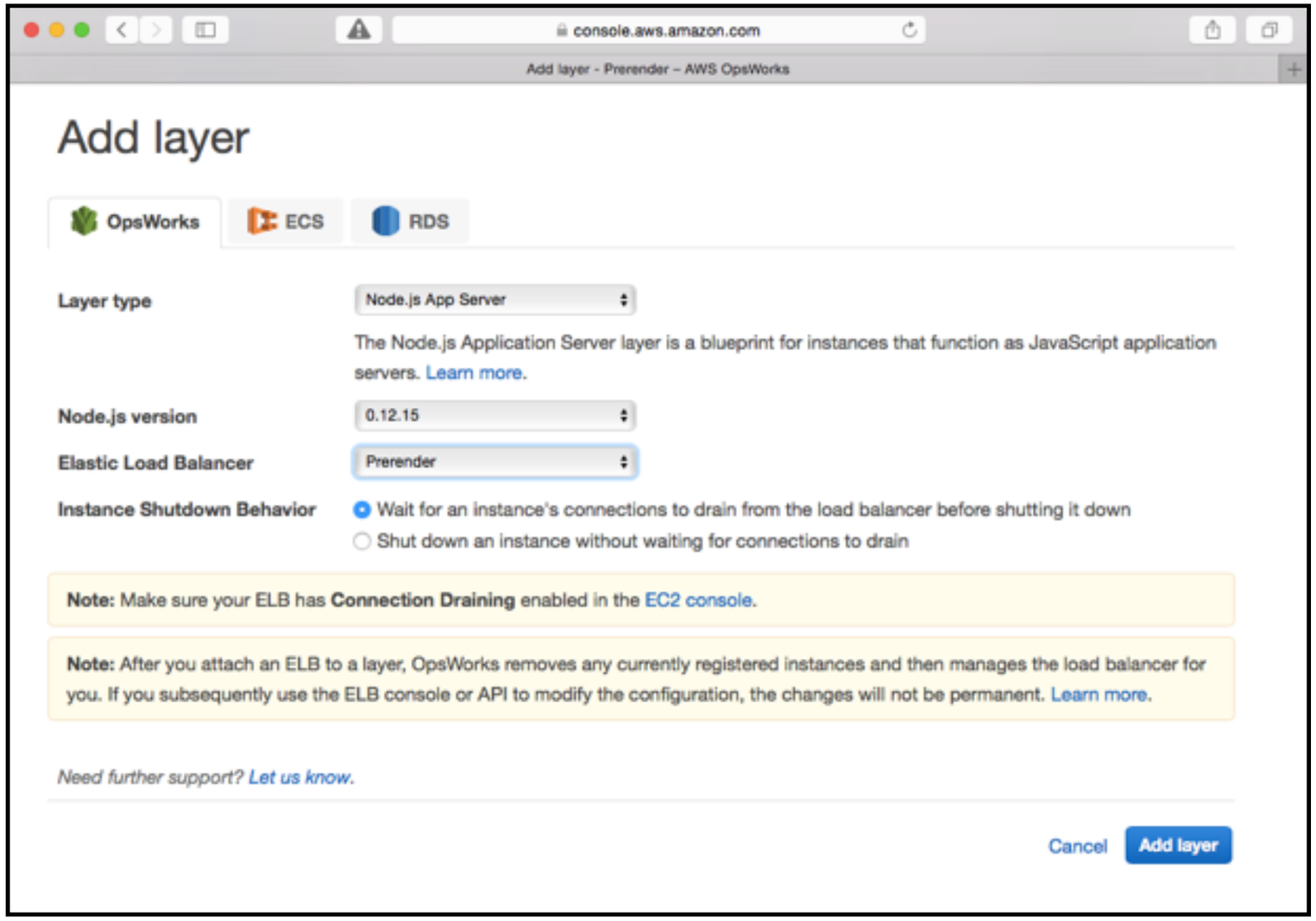
CONFIGURE HEALTH CHECK

- Ping path should be root (/)
- Ping timeout and interval should be generous
- Skip steps 5 & 6 and click Create
- Now back to our stack…



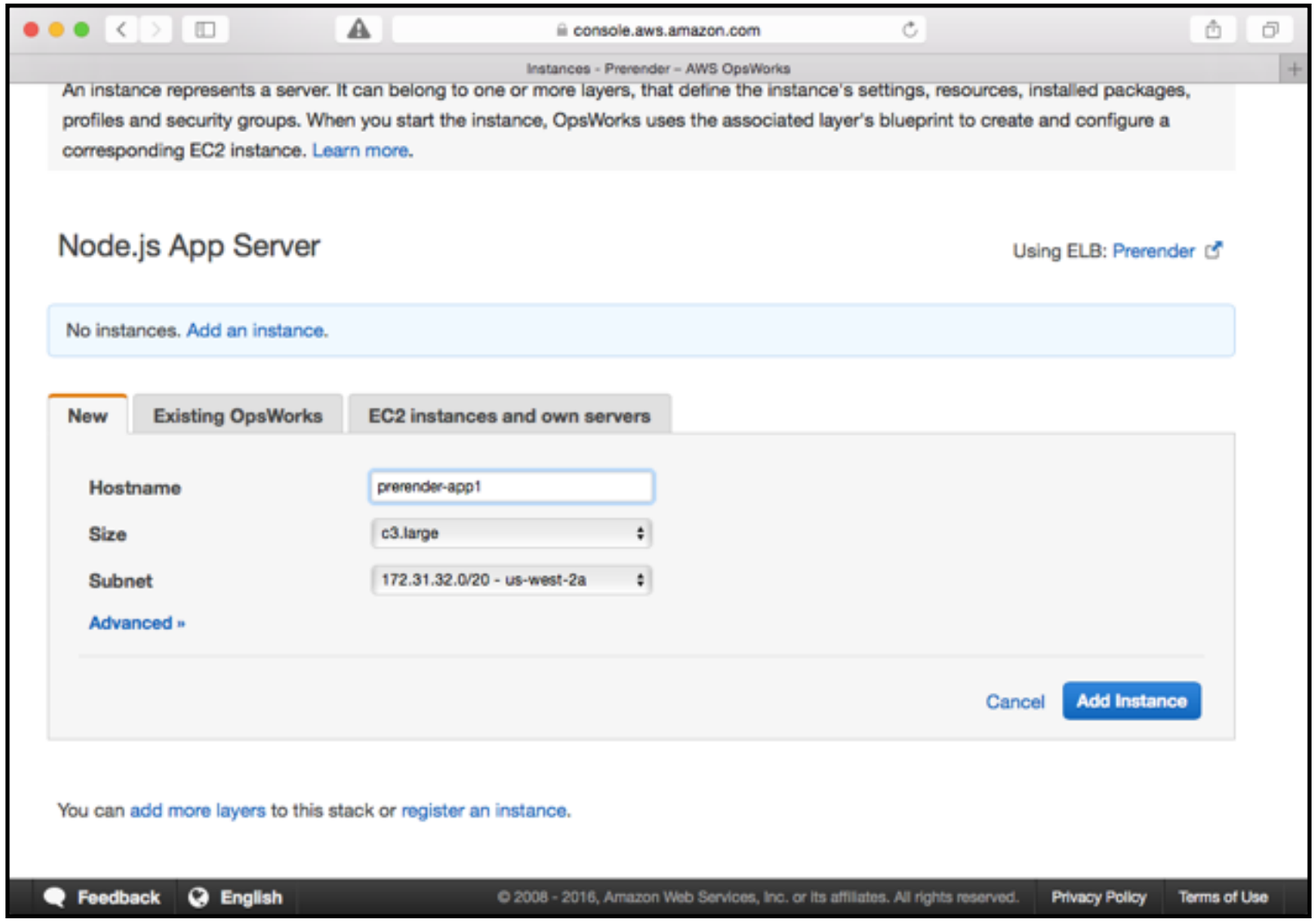
ADD NODE.JS LAYER

- Click Add Layer
- Layer type should be Node.js App Server
- Select the load balancer that was just created



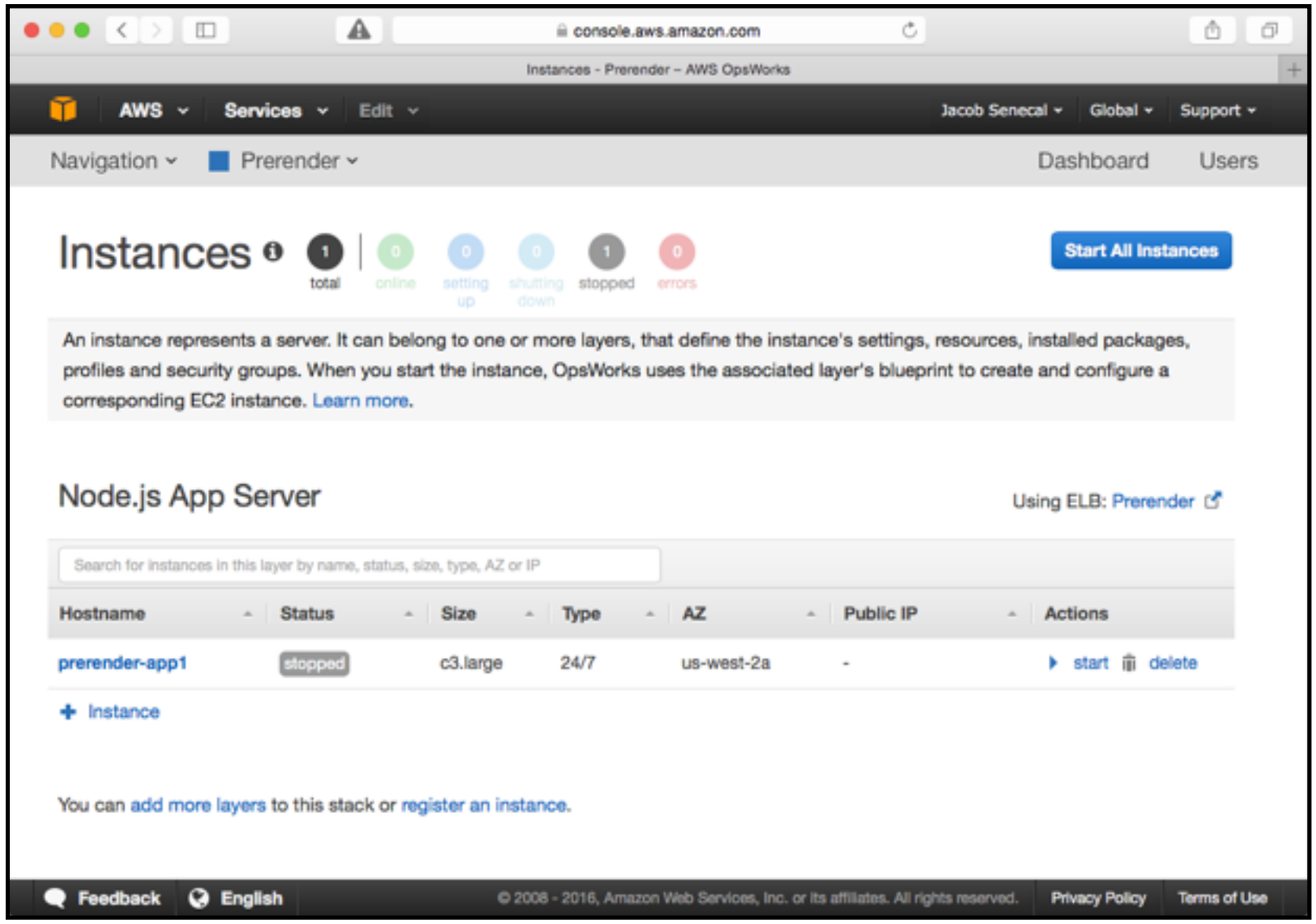
ADD NEW INSTANCE

- Click Add Instance
- Type is New (EC2)
- Set hostname and size
- Default of c3.large is a good starting point



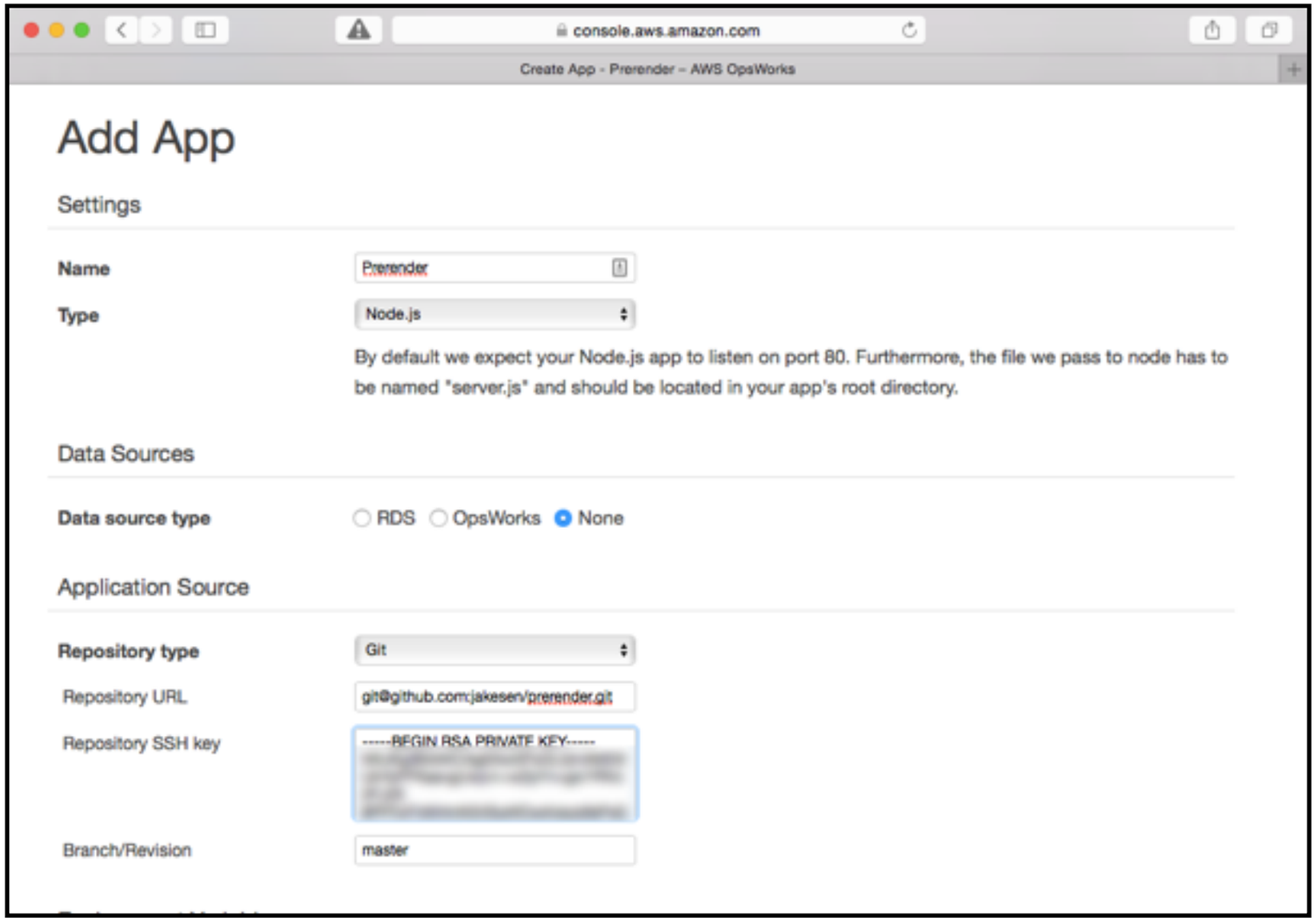
START NEW INSTANCE

- lick start to provision and boot new EC2 instance
- You'll see the status change to Requested, Booting, Running Setup, and finally Online



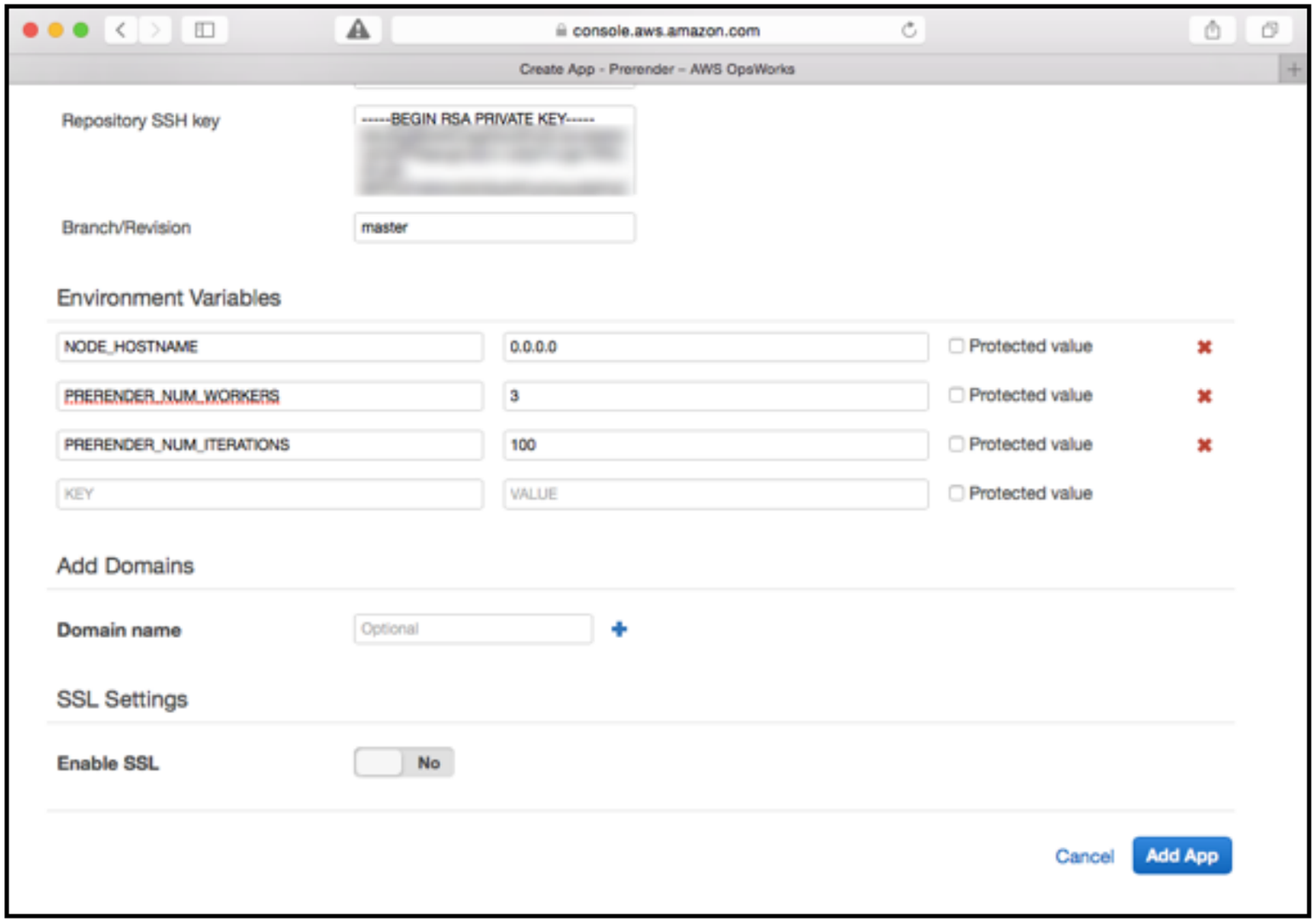
ADD PRERENDER APP

- Click Add App
- Enter name
- Choose Node.js type
- Add repo URL and private key
- Other settings can be left default



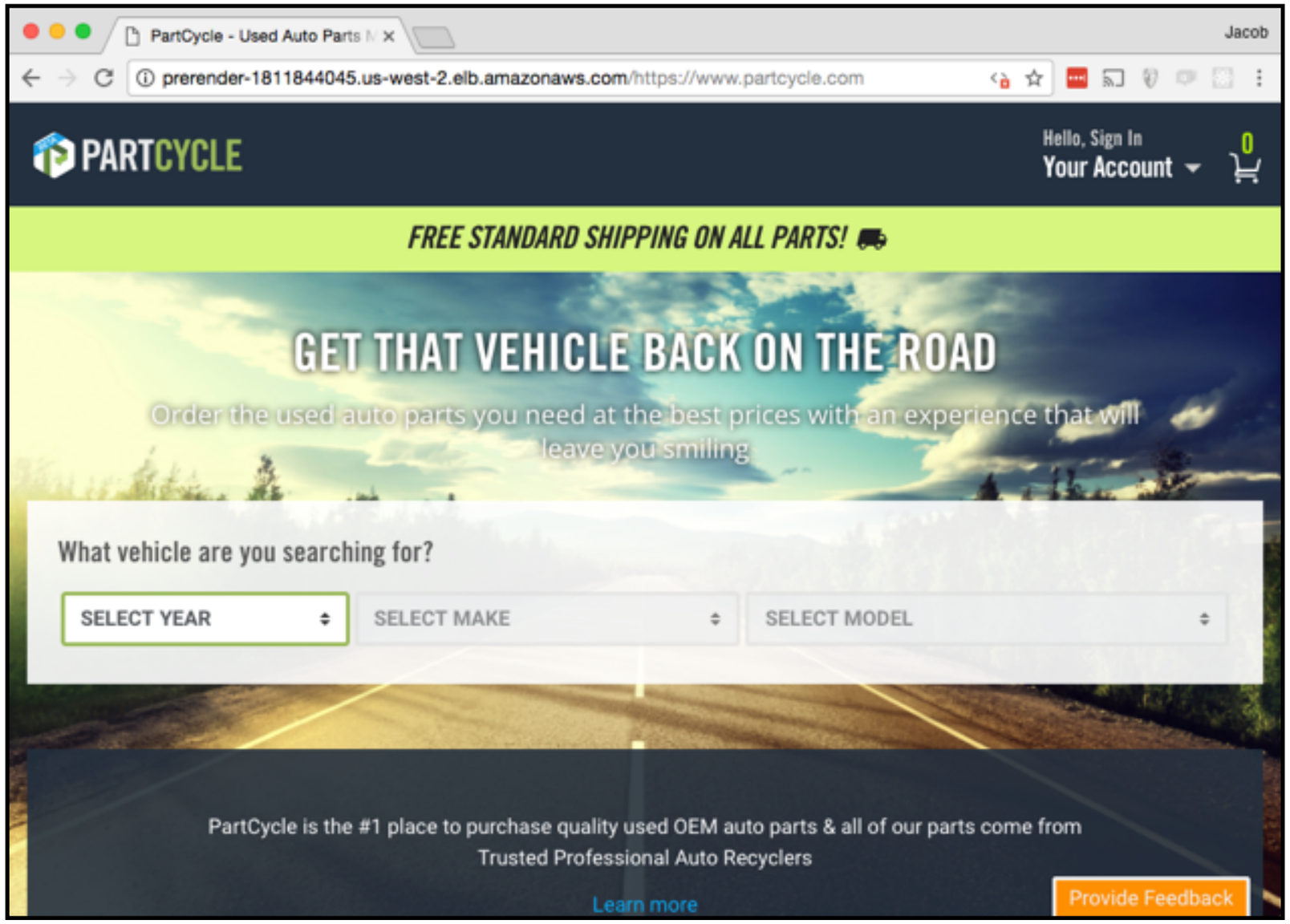
PRERENDER APP CONFIG

- Set environment variables
- NODE_HOSTNAME is required for the App to work with AWS' Node.js layer
- Prerender variables are optional
- Deploy



TESTING OUR PRERENDER STACK

- Copy the AWS load balancer endpoint address into your browser
- You should see SERVICE AVAILABLE
- Try adding a website URL
- You should see the rendered page!



RECAP

- If you need to serve your client-rendered JS site to search engines, Prerender may be just what you need
- Don't forget your middleware
- Caching / Pre-caching
- There's always the paid service: Prerender.io
- This demo can be found at https://github.com/jakesen/prerender-opsworks-demo
- PartCycle is hiring!

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RESULT STACK

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