Week 6 Lecture 16

Applied

Helpful Resources

- http://devcenter.heroku.com
- https://help.ubuntu.com/community/EC2StartersGuide

What's in this lecture?

- Heroku, Engine Yard, Amazon EC2
- Deploying an app to the cloud

A Little Backstory

- Customer demand for online goods is highly seasonal
- Amazon.com is the largest online shopping website
- To meet the Christmas demand, Amazon invested heavily in their infrastructure
- After holidays, what to do with excess?

EC2!

Amazon EC2

- ‘Elastic Compute Cloud’
- Goal: provide a scalable infrastructure for online computing
- The basic components:
  - servers
  - disks
  - machine images

P-a-a-S

- ‘Platform-as-a-Service’
- Using EC2 (and others) as the foundations
- Goal is to provide a managed software stack for rapid application development
- Take the system administration out of the developer’s hands

EngineYard

- PaaS built on EC2
- Tailored to the Ruby on Rails Framework
- Stack built on custom Gentoo-based OS
- Great service, high(er) prices

Heroku

- Also a PaaS built on EC2
- Dead simple to set up, manage, and scale
- exchanges limitations for cost:
  - can't SSH in
  - can't access database remotely
- All built with shared resources

Goal

- Get the world's simplest Rails app live on Heroku
- Make local changes
- Commit
- Deploy
- See changes in cloud!

The Heroku Gem

edit your Gemfile:

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source 'http://rubygems.org'

gem 'heroku'
gem 'rails', '3.0.5'
gem 'sqlite3'

Don't Forget

- After you edit your Gemfile:
  - run
    $ bundle install
  - add and commit files
    - Gemfile
    - Gemfile.lock

Authentication

- Create a Heroku account using their web page
- Initialize the application with
  $ heroku create

Credentials

- Heroku registers your SSH keys with the instance
- Gives you an API token that signs each request made to the Heroku Environment
- If your public key changes, you will have to create a new Heroku config file!

What you'll see

$ heroku create
Enter your Heroku credentials.
Email: foo@example.com
Password:
Creating vivid-spring-115... done, stack is bamboo-mri-1.9.2
http://vivid-spring-115.heroku.com/ |
git@heroku.com:vivid-spring-115.git

What's Happening?

- Heroku is provisioning a virtual machine
- Assigns it the internal name
  vivid-spring-115
- Creates the subdomain
  http://vivid-spring-115.heroku.com
- Creates the remote git repository
  git@heroku.com:vivid-spring-115.git

To the Cloud

- We need to get our local code to the remote Heroku repository
- Simple as:
  $ git push heroku master
- What's going on? earlier we created a remote repository AND created a local branch 'heroku' that pointed to it

Setup Database

- We need to tell Heroku to prepare our database:

$ heroku rake db:migrate

All set!

- We can now visit our application
- Run a set of commands using Heroku CLI

  $ heroku help
- Control how much resources our application uses via the web interface

Exercises

- Deploy your simple blogging app to Heroku