Blue-Green

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Estimated Time: 25 minutes

Requirements

This lab is part of a workshop available at https://github.com/Pivotal-Field-Engineering/DevNexus2017
General Pre-Requisites are available in the Readme.md

In general the Labs should be done in numerical order since they are interdependent.

What you will learn

- How to manage an application upgrade with a blue-green deployment

Exercises

Setup

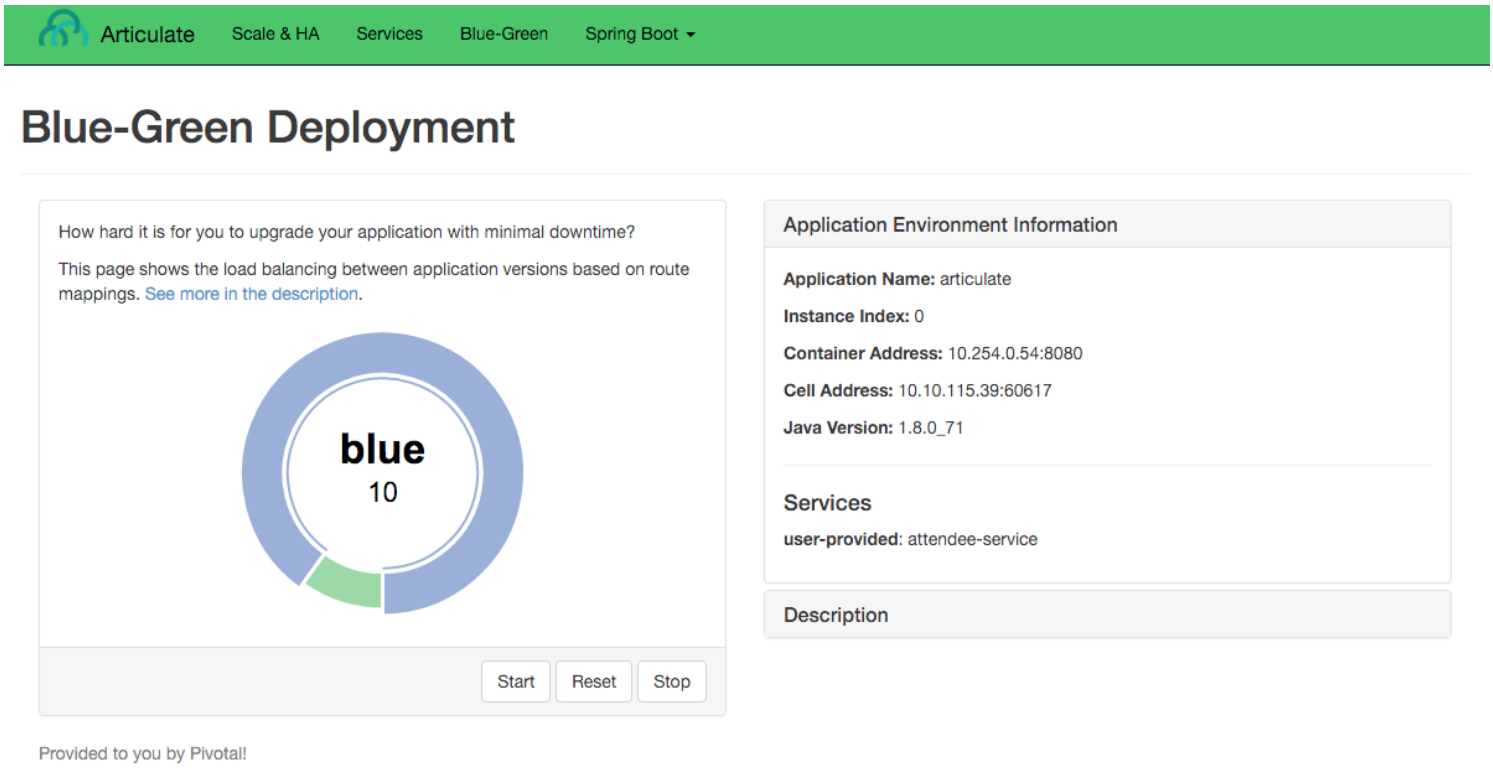
1) To simulate a blue-green deployment, first scale `articulate` to multiple instances.

```
$ cf scale articulate –i 2
```

Perform a Blue-Green Deployment

1) Read about usingBlue-Green Deployments to reduce downtime and risk (https://docs.pivotal.io/pivotalcf/devguide/deploy-apps/blue-green.html).

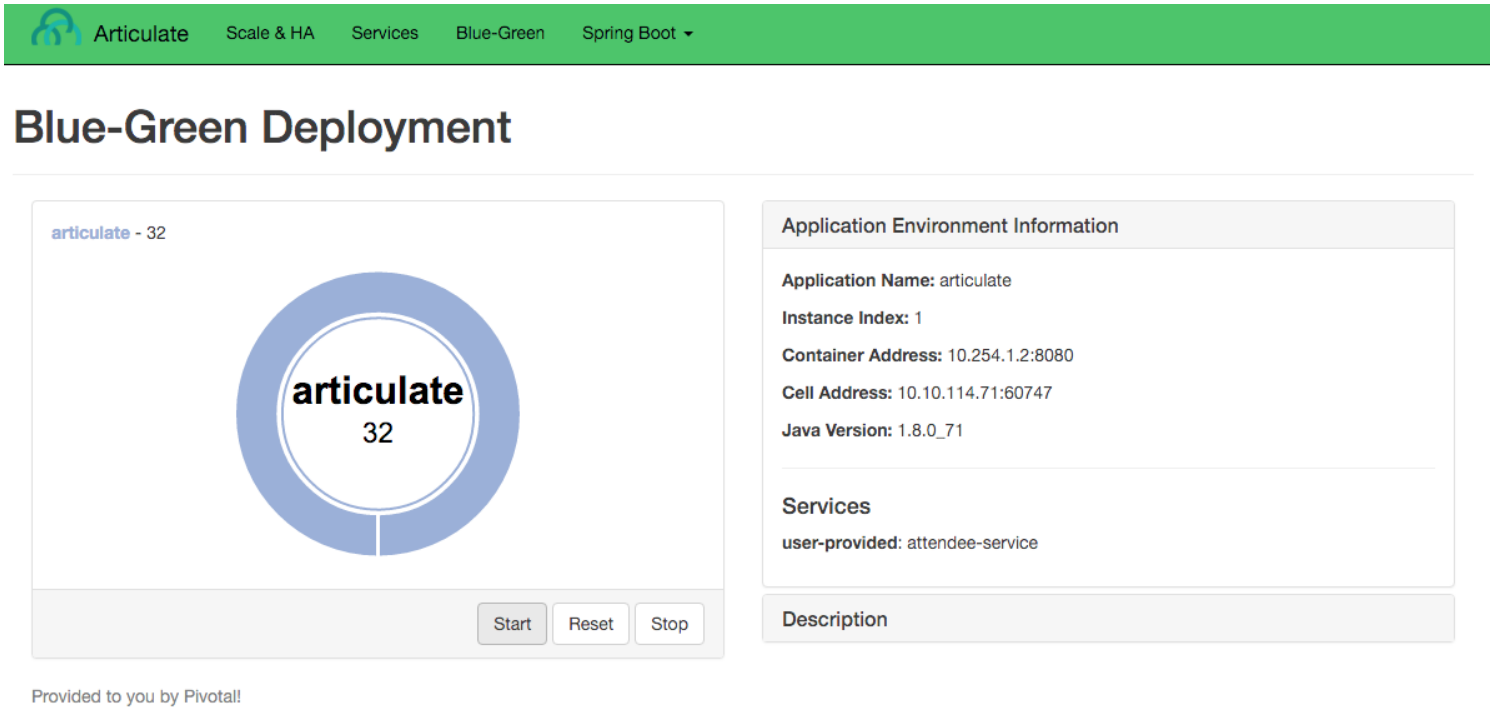
2) Browse to the `articulate Blue–Green` page.



3) Lets assume that the deployed application is version 1. Let's generate some traffic. Press the `Start` button.

Leave this open as a dedicated tab in your browser. We will come back to this later.

4) Observe our existing application handling all the web requests.



5) Record the subdomain (`host`) for the `articulate` application.

This is our production route. *You will use this in the next step.*

For example:

```
$ cf routes

Getting routes as droberts@pivotal.io ...

space   host                                          domain
       apps
dev     articulate-heartsickening-elegance            pcfi1.fe.gopivota
l.com   articulate
```

6) Now let's `push` the next version of `articulate` .

However, this time we will specify the subdomain by appending `-temp` to our production route.

For example (your subdomain will be different):

```
$ cd ~/pcf-developer-workshop/articulate/
$ cf push articulate-v2 -p ./articulate-0.0.1-SNAPSHOT.jar -m 512M -n art
iculate-heartsickening-elegance-temp --no-start
```

7) Bind `articulate-v2` to the `attendee-service` user provided service.

```
$ cf bind-service articulate-v2 attendee-service
```

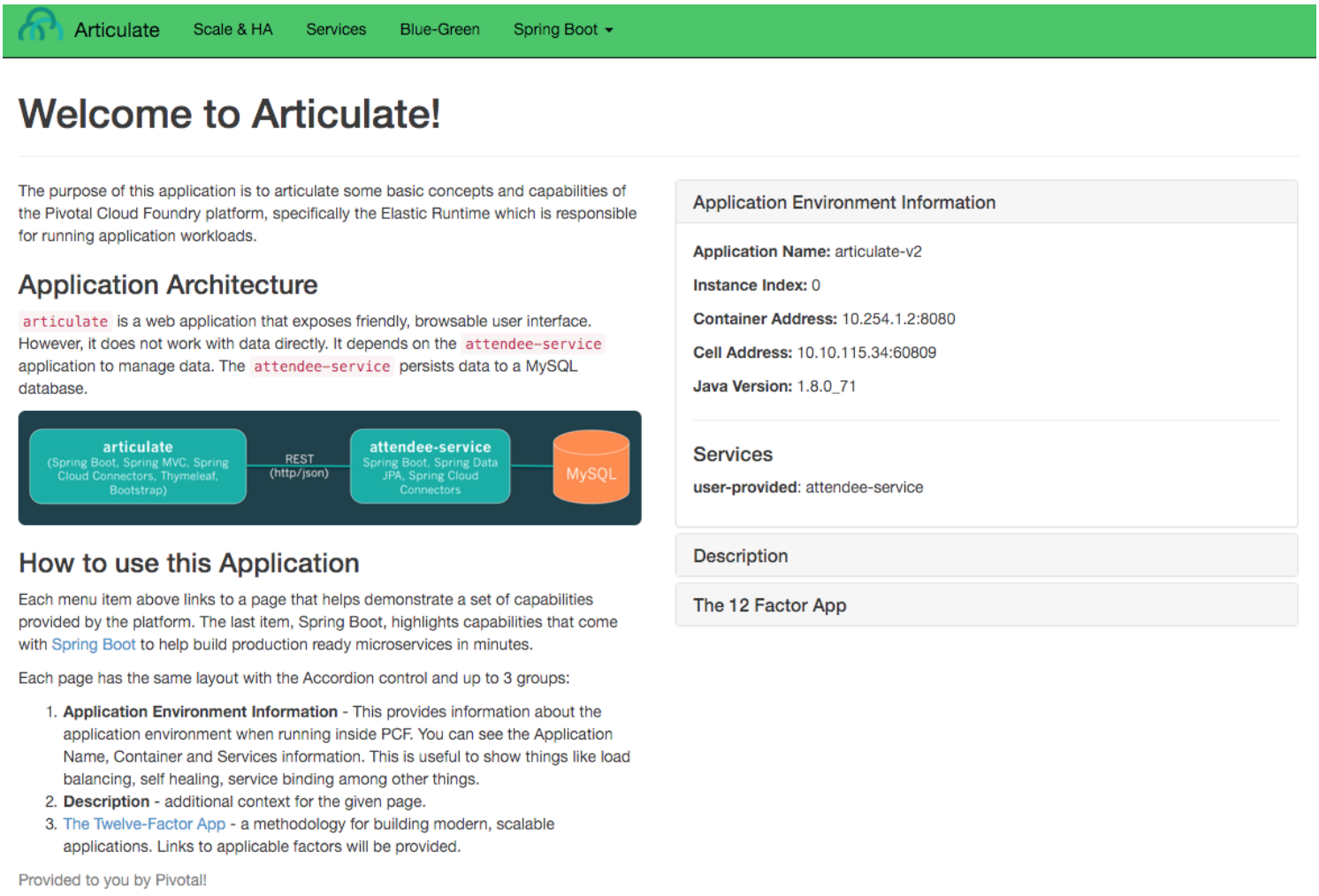
You can ignore the "TIP: Use 'cf restage articulate-v2' to ensure your env variable changes take effect" message at this time.

8) Start the application.

```
$ cf start articulate-v2
```

9) Now we have two versions of our app deployed.

Open a new tab and view version 2 of `articulate` in your browser. Take note of the application name.



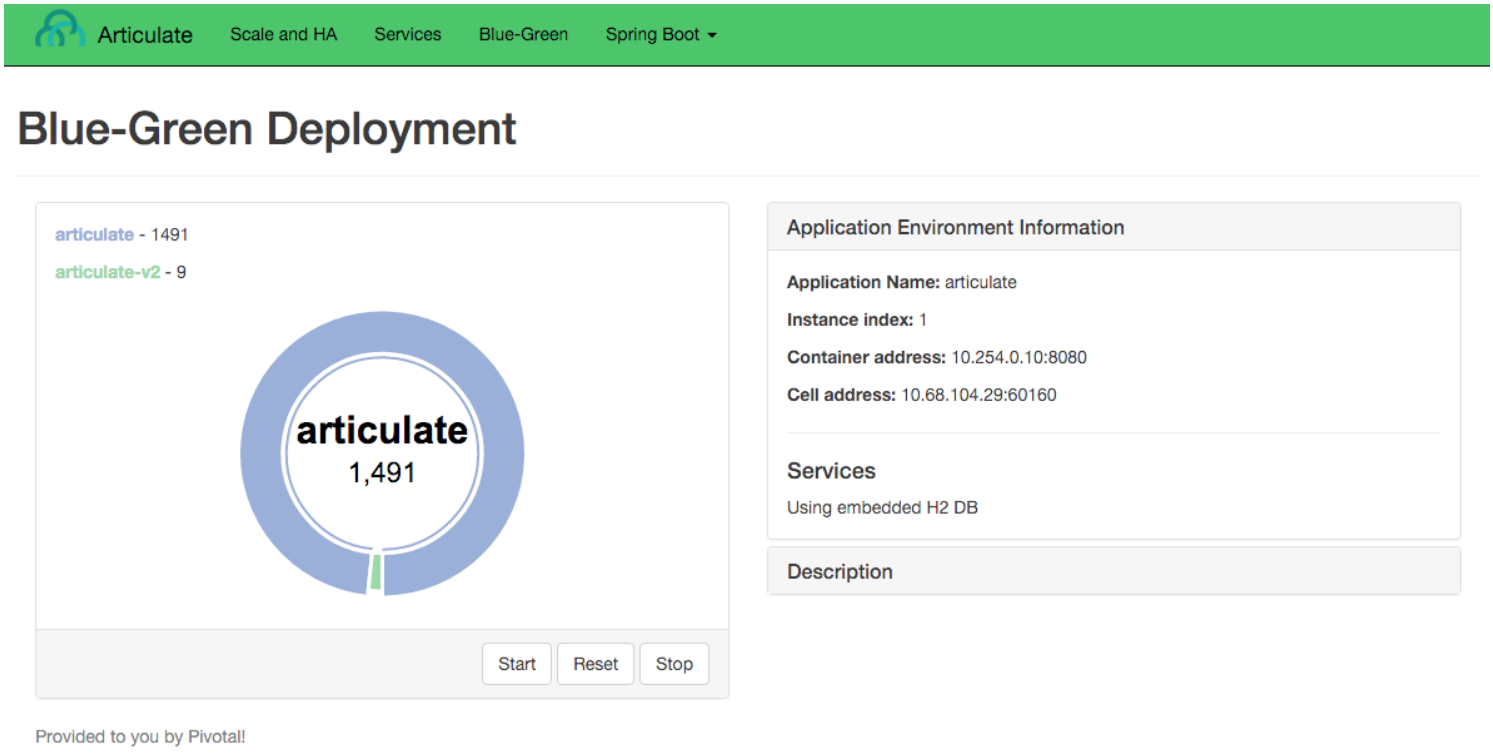
At this point in the deployment process, you could do further testing of the version you are about to release before exposing customers to it.

10) Let's assume we are ready to start directing production traffic to version 2. We need to map our production route to `articulate-v2` .

For example (your domain and subdomain will be different):

```
$ cf map-route articulate-v2 pcfi1.fe.gopivotal.com -n articulate-heartsickening-elegance
```

11) Return to browser tab where you started the load. You should see that it is starting to send requests to version 2.



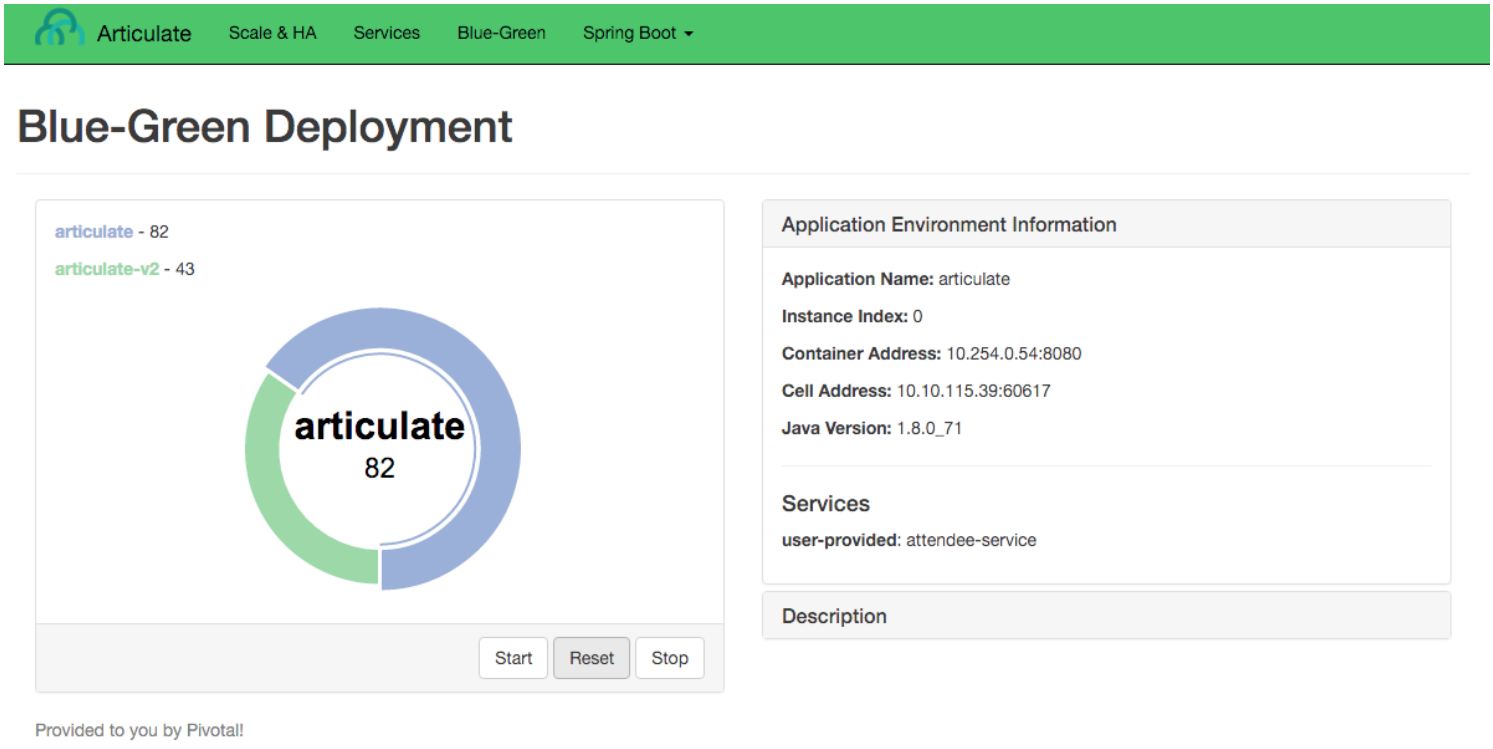
12) Press the `Reset` button, so we can see how the load get distributed across app instances.

If you are running with a similar configuration to this:

```
cf apps
Getting apps in org dave / space dev as droberts@pivotal.io...
OK

name                    requested state   instances   memory   disk   ur
ls
articulate              started           2/2         512M       1G
 ...
articulate-v2           started           1/1         512M       1G
 ...
```

You should see about a third of the requests going to version 2.



13) Move more traffic to version 2.

```
$ cf scale articulate -i 1
$ cf scale articulate-v2 -i 2
```

If you `Reset` the load generator, you will see ⅔ of the traffic go to `articulate-v2`.

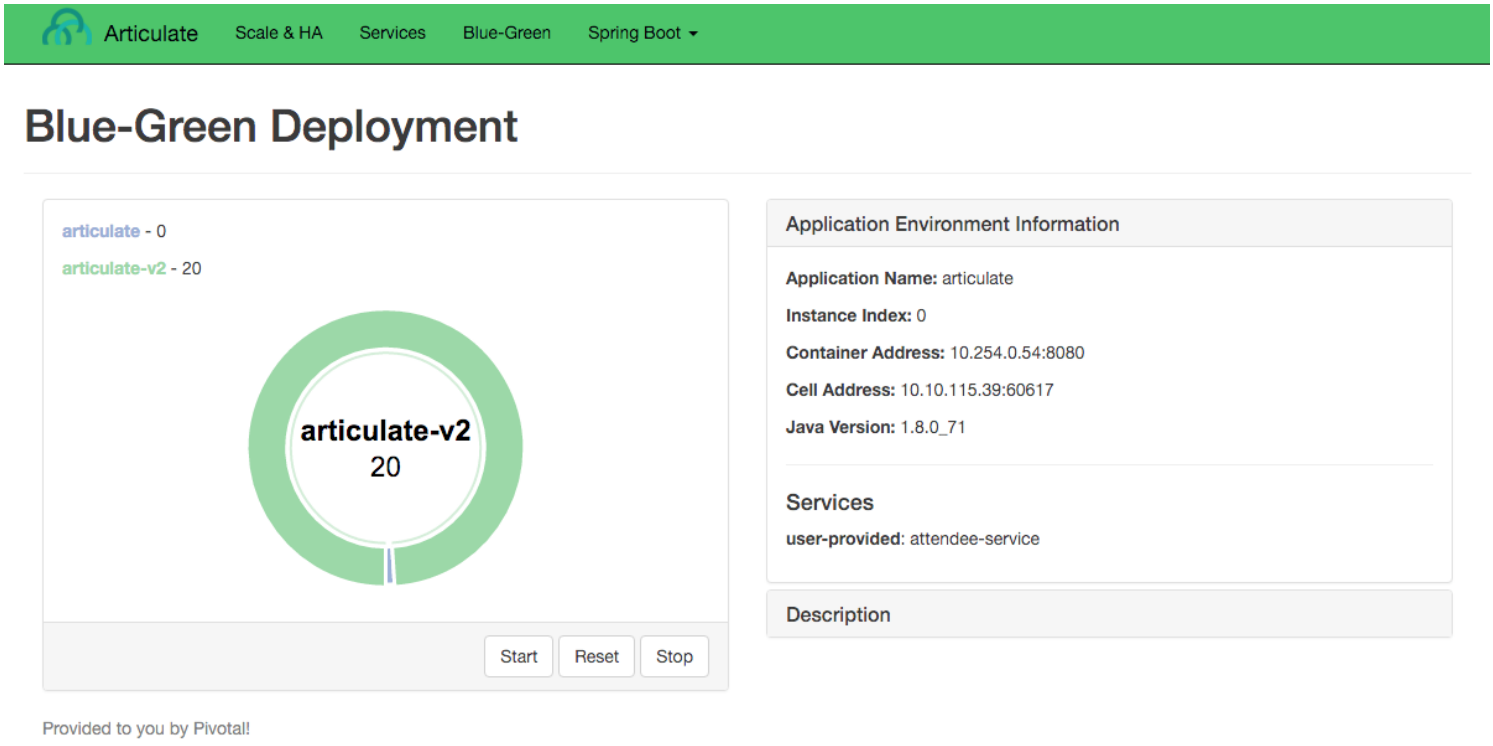
14) Move all traffic to version 2.

Remove the production route from the `articulate` application.

For example (your domain and subdomain will be different):

```
$ cf unmap-route articulate pcfi1.fe.gopivotal.com -n articulate-heartsickening-elegance
```

If you `Reset` the load generator, you will see all the traffic goes to `articulate-v2`.



NOTE: Refreshing the entire page will update the application name.

15) Remove the temp route from the `articulate-v2` application.

For example (your domain and subdomain will be different):

```
$ cf unmap-route articulate-v2 pcfi1.fe.gopivotal.com -n articulate-heart
sickening-elegance-temp
```

Congratulations! You performed a blue-green deployment.

Questions

- How would a rollback situation be handled using a blue-green deployment?
- What other design implications does running at least two versions at the same time have on your applications?
- Do you do blue-green deployments today? How is this different?

Cleanup

Let's reset our environment.

1) Delete the `articulate` application.

```
$ cf delete articulate
```

2) Rename `articulate-v2` to `articulate`.

```
$ cf rename articulate-v2 articulate
```

3) Restart `articulate`.

```
$ cf restart articulate
```

4) Scale down.

```
$ cf scale articulate –i 1
```

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