Getting Started with IBM Bluemix

Hands-On Workshop

Exercise 7a: Specifying a Buildpack

Specifying a buildpack when deploying an application

In this workshop, you'll specify a buildpack to deploy your application. A *buildpack* provides the runtime for an application.

You can control which buildpack your application uses by specifying options at deploy time.

By using the `cf buildpacks` command, you can see the internal buildpacks that are available and the order that they will be tried to run your application.

You can specify a specific internal buildpack or a link to an external buildpack by using the `-b` option on the command line or the `buildpack:` option in a `manifest.yml` file.

For this first task, you'll deploy a Go application to Bluemix by using command-line tools. You could use a build in the Go buildpack, but in this exercise, you'll use the latest version of the Cloud Foundry buildpack.

When a DEA stages an application, it uses a base OS stack, the buildpack, and the application files to create the droplet ready for deployment to a container. There is a default stack available, but sometimes a buildpack needs a different stack. To see what stacks are available on a Cloud Foundry platform, use the `cf stacks` command:

```
cf stacks
Getting stacks in org binnes@uk.ibm.com / space workshop as
binnes@uk.ibm.com...
OK

name         description
lucid64      Ubuntu 10.04 on x86-64
cflinuxfs2   Ubuntu 14.04.2 trusty
```

The latest Cloud Foundry buildpack needs the newer cflinuxfs2 stack, based on Ubuntu 14.04.2. To specify the stack to be used when deploying an application, use the `-s` option on the command line or the `stack` option in the manifest file.

1. Create a new directory to work in.

2. Create a new text file, name it `app.go`, and copy or type the following content into that file:

```
package main

import (
    "fmt"
    "log"
    "net/http"
    "os"
)

func main() {
    http.HandleFunc("/", hello)
    err := http.ListenAndServe(":"+os.Getenv("PORT"), nil)
```

Copyright IBM Corporation 2013-2015. All rights reserved.

```
    if err != nil {
        log.Fatal("ListenAndServe:", err)
    }
}

func hello(w http.ResponseWriter, req *http.Request) {
    fmt.Fprintln(w, "hello, world!")
}
```

3. Create another new text file, name it `Procfile`, and copy or type the following content into that file:

   ```
   web: app
   ```

4. Create a third new text file, name it `.godir`, and copy or type the following content into that file:

   ```
   app
   ```

These three files make up a simple Hello World application that uses the Go language.

- The `Procfile` provides the name of the application that the Go buildpack will run when it starts the application.
- The `.godir` file provides the name of the application when the application is built.

5. Deploy this application by using the following command. Replace `GoTest` with the application name and host name that you want to use for your deployed application.

   ```
   cf push GoTest -b https://github.com/cloudfoundry/buildpack-go.git -s
   cflinuxfs2
   ```

6. Check that the application works by launching the application from the Bluemix web UI.

7. After you confirm that the application is working, delete the application by using the following command. Replace `GoTest` with the name that you used to deploy the application.

   ```
   cf d GoTest
   ```

Instead of having to specify options on the command line, you can use a manifest file.

1. Use a manifest file to deploy the application by creating the `manifest.yml` text file. Add the following content to that file. Replace `GoTest` with the name you want to use for your deploy.

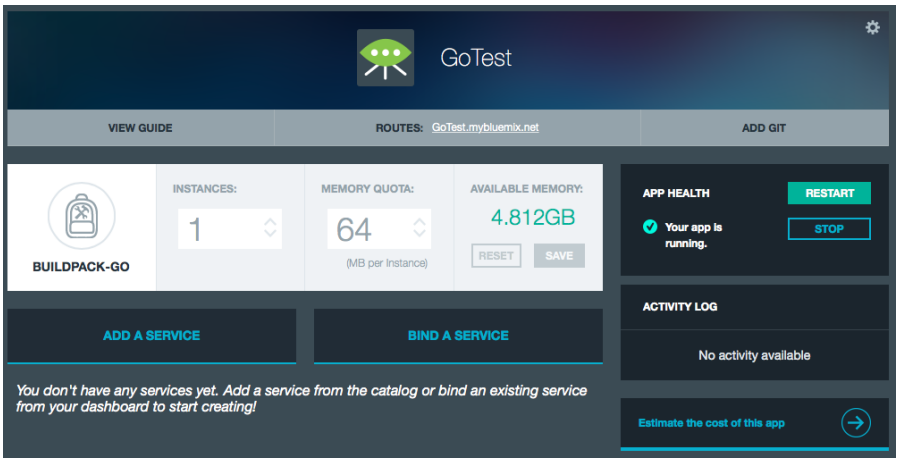
Copyright IBM Corporation 2013-2015. All rights reserved.

```
---
applications:
  - name: GoTest
    memory: 64M
    instances: 1
    path: .
    buildpack: https://github.com/cloudfoundry/buildpack-go.git
    stack: cflinuxfs2
```

2. Deploy the application by running the following command. This command will use the manifest file.

```
cf push
```

3. Check that the application deployed successfully by launching it from the Bluemix web UI.



Copyright IBM Corporation 2013-2015. All rights reserved.