Python, Watson and Cloudant on IBM Bluemix for Hackathons

A guide for hackers

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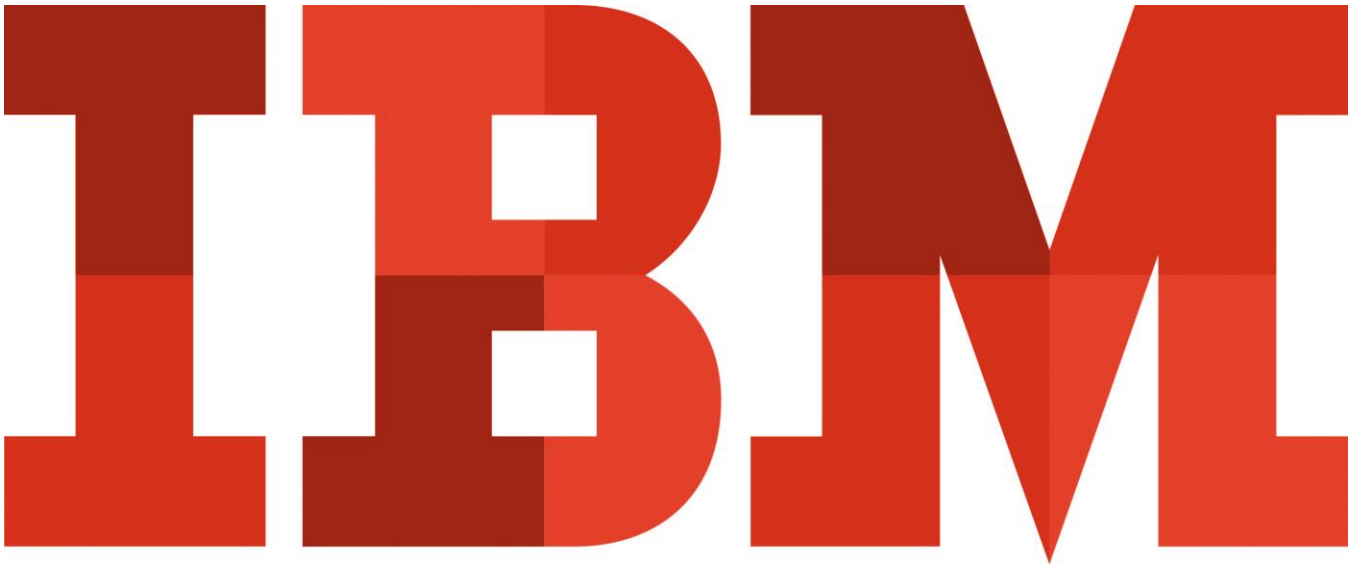


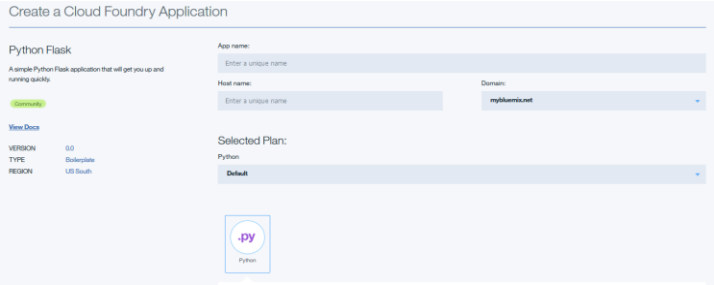
A digital copy of this lab and code snippets can be found at:
`http://ibm.biz/<<TODO>>`

Quick Introduction

When I attend Hackathons I am often asked if IBM Bluemix supports Python and how you can combine Python with Watson and other Services on the IBM Bluemix cloud. This.little guide aims to provide a brief introduction to Python on Blumix. Enjoy.

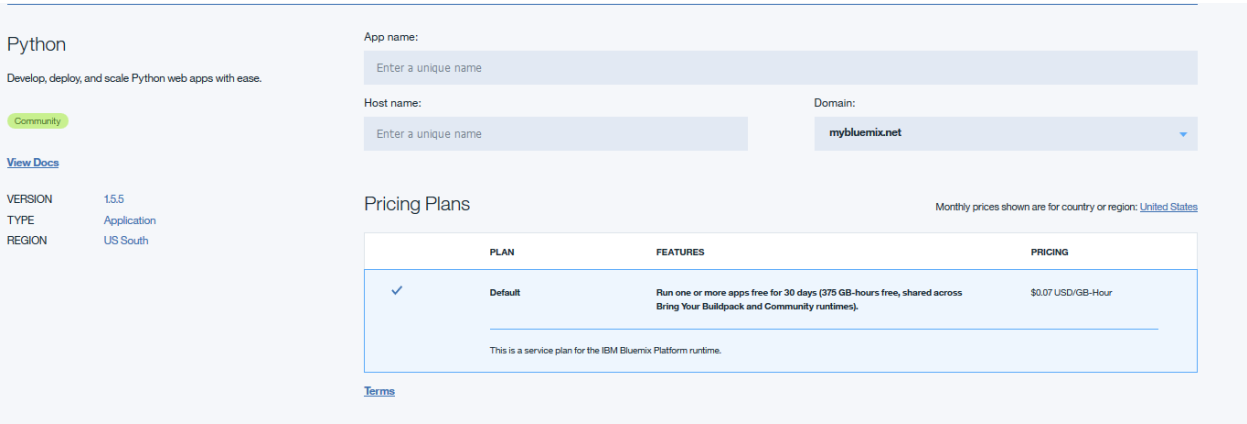
Python Build pack on Bluemix

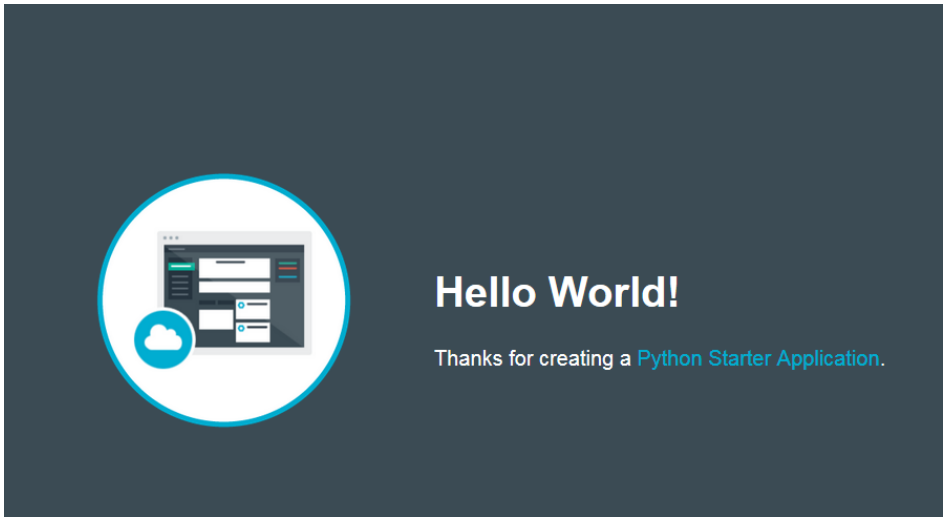
Bluemix comes with a Python build pack that is maintained by the open source community. ,
https://console.ng.bluemix.net/catalog/starters/python/
The original buildpack is found at GitHub https://github.com/cloudfoundry/python-buildpack
And is based on the Heroku Buildpack



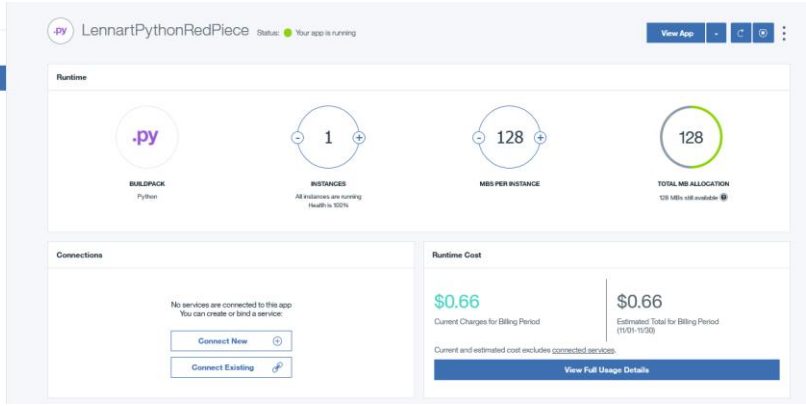
To launch this buildpack, just fill in a unique App name and Host name and click on create. And then follow instructions.

More about the Python buildpack on Bluemix at this URL:
https://console.ng.bluemix.net/docs/runtimes/python/index.html#python_runtime





When it launches, the Python Buildpack comes up with “Hello World”



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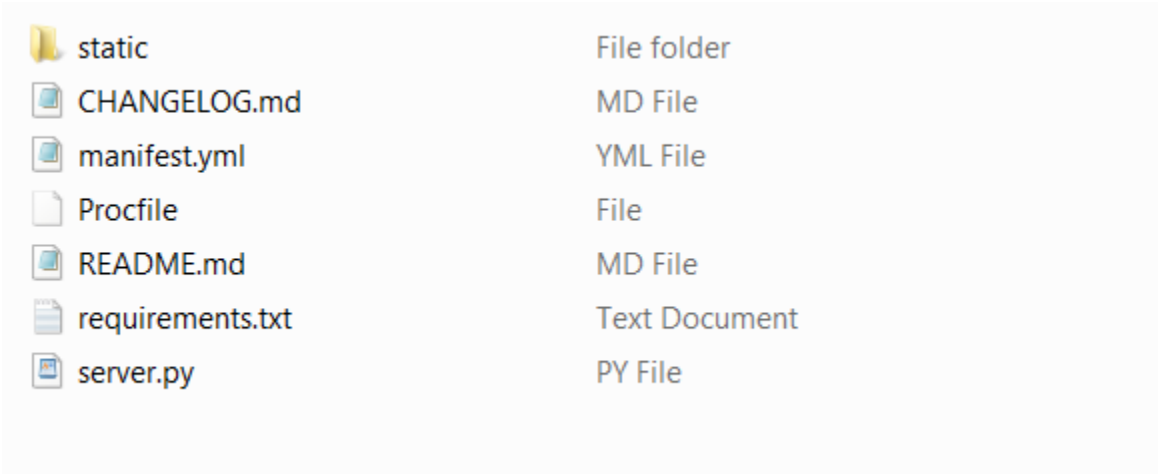
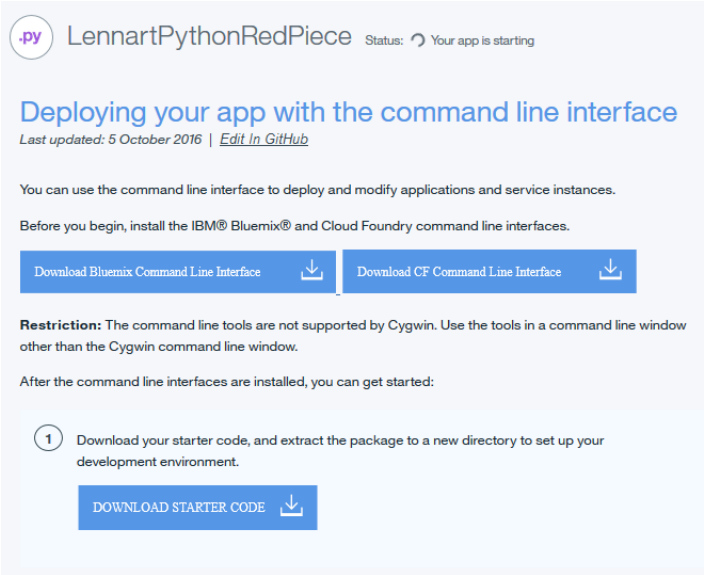
When the Python Buildpack is launched it has a console window, from which you administer your installed runtime.



You usually develop on your laptop and then use the cf command to push the code up to Bluemix.

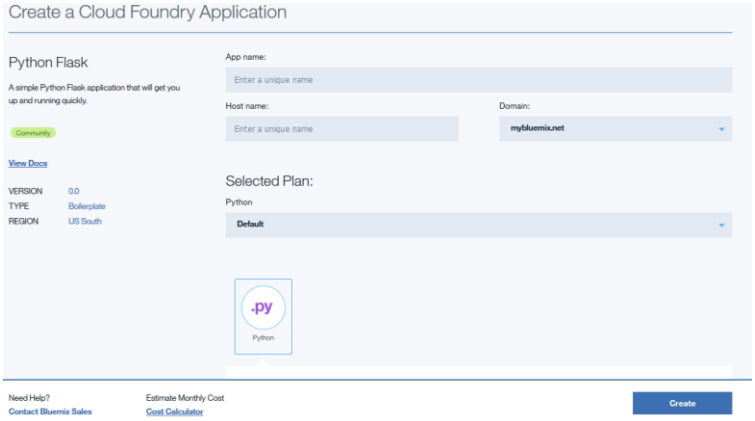


Just start by click on DOWNLOAD STARTER CODE and Download CF CommandLine Interface
Then use the cf command to push your changes to Bluemix.

Documentation on the Python Runtime on Bluemix: https://console.ng.bluemix.net/docs/runtimes/python/index.html#python_runtime

Python Flask on Bluemix

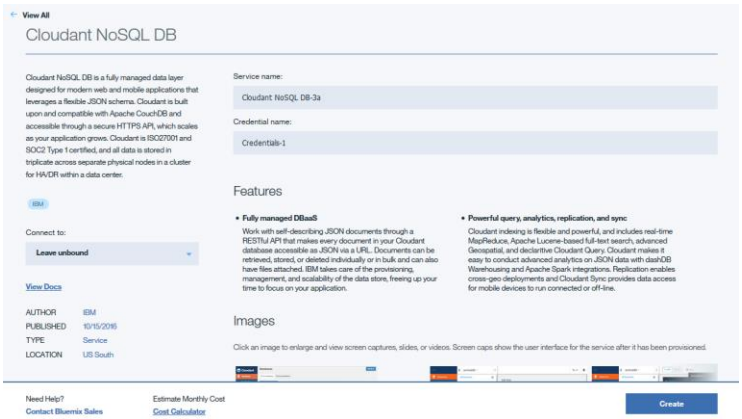
The popular micro framework http://flask.pocoo.org/ is hosted on Bluemix as a Boilerplate.
https://console.ng.bluemix.net/catalog/starters/python-flask/



Python Flask and Cloudant

Adding the Cloudant no-SQL database to Python Flask adds persistence to your app. Cloudant also provids https://cloudant.com/product/cloudant-features/sync/ synchronization with disconnected mobile apps, a key feature in today's mobile world.

To get started, launch the Cloudant service on Bluemix.



When your Cloudant database has launched, you use the following code in Python to connect to your database:

Running Couchdb on your local laptop

Start your CouchDb from the services tab
http://127.0.0.1:5984/_utils/#/database/test1/bf70258030d67578853a43fc01047d46

Using Python to access the Watson Developer Cloud

Watson Developer Cloud, Python SDK

https://github.com/watson-developer-cloud/python-sdk

Includes sample apps for most of the Watson services.

Code Samples

https://www.ibm.com/watson/developercloud/natural-language-classifier/api/v1/?python#explorer

Replace `YOUR SERVICE USERNAME` and `YOUR SERVICE PASSWORD` with your credentials

```
from watson_developer_cloud import NaturalLanguageClassifierV1

natural_language_classifier = NaturalLanguageClassifierV1(
  username='YOUR SERVICE USERNAME',
  password='YOUR SERVICE PASSWORD')
```

```
import json
from watson_developer_cloud import NaturalLanguageClassifierV1

natural_language_classifier = NaturalLanguageClassifierV1(
  username='YOUR SERVICE USERNAME',
  password='YOUR SERVICE PASSWORD')

with open('../resources/weather_data_train.csv', 'rb') as training_data:
  classifier = natural_language_classifier.create(
    training_data=training_data,
    name='My Classfier',
    language='en'
  )
print(json.dumps(classifier, indent=2))
```

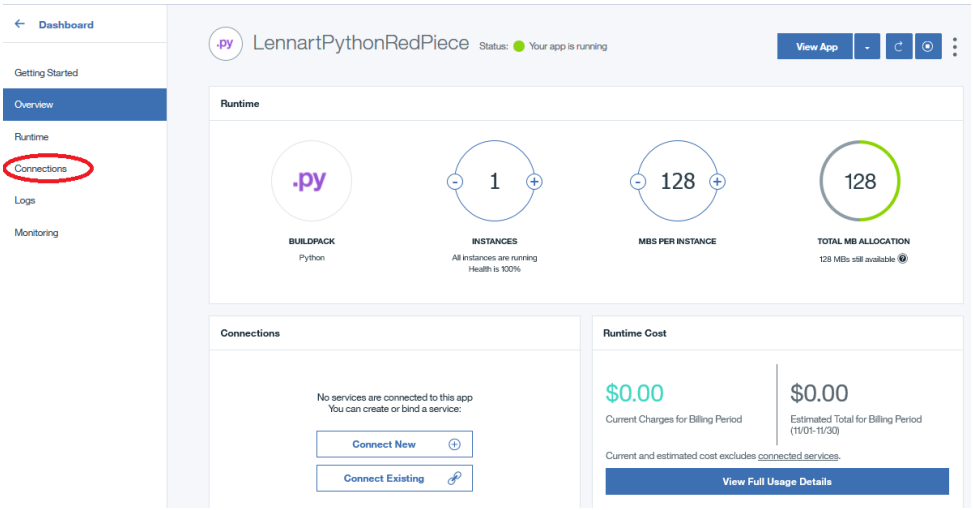
Example response

```
{
  "classifier id": "10D41B-nlc-1",
  "name": "My Classifier",
  "language": "en"
  "created": "2015-05-28T18:01:57.393Z",
  "url": "https://gateway.watsonplatform.net/natural-language-
classifier/api/v1/classifiers/10D41B-nlc-1",
  "status": "Training",
  "status_description": "The classifier instance is in its training phase,
not yet ready to accept classify requests"
}
```

Using Python and Cloudant

It is easy to add a No-SQL database to Python.

In the left hand panel of the Dasboard entry for your running Python buildpack, you click on Connections



Articles on using Python on Bluemix

- Deploying a Python Web Application to IBM Bluemix:

  https://www.ibm.com/blogs/bluemix/2016/03/deploying-python-app-to-bluemix/

- Simple Hello World Python App using Flask

  https://www.ibm.com/blogs/bluemix/2015/03/simple-hello-world-python-app-using-flask/

Resources

- Deploying a Python Web Application to IBM Bluemix:
  https://www.ibm.com/blogs/bluemix/2016/03/deploying-python-app-to-bluemix/
- Create a scalable and fault-tolerant REST endpoint using Flask and Python
  https://www.ibm.com/developerworks/cloud/library/cl-scalable-fault-tolerant-rest-endpoint-flask-python-bluemix-trs/

Summing Up

The IBM Bluemix cloud offers several choices for mobile developers:

1) Templates for those who want to quickly want to create a mobile app with a Watson service with minimal coding,
2) A Mobile Services Boilerplate with embedded mobile services
3) An advanced mobile environment for enterprise-grade mobile development
4) SDKs for app development with Watson Services

The choice is yours, enjoy.
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