Cloud Native Applications : Bluemix Console, CLI and Liberty App Accelerator

WebSphere User Group (30th March 2017)

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  will achieve results similar to those stated here.

Adam Pilkington

IBM Software Engineer, Master Inventor.

- Currently working on Java code generation for cloud native applications, based in the UK Hursley Lab .

- Previously a WebSphere Liberty developer working in the Microservices team and before that on IBM's JVM.

- He is also an IBM Master Inventor. Prior to joining IBM he worked in the UK financial services sector.

Agenda

Discover Bluemix starters and the App Accelerator.
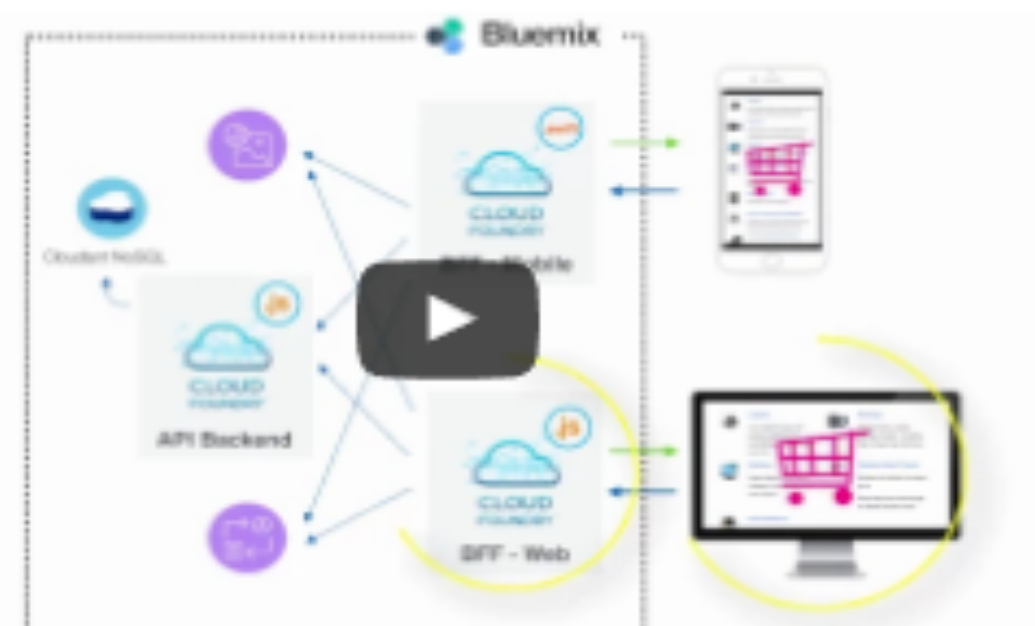
Developer Console

Create Bluemix projects and download starter code through a point-and-click interface

CLI Developer Plug-in

Create, run, and deploy Bluemix projects with starter code through the command line interface.

Liberty App Acclerator

Configure WebSphere Liberty with a set of selected technologies, then download the project as a zip file.

Bluemix developer experience

Building cloud native projects.

Create

Create a project from a variety of pattern types and Starters. Point-and-click interface.

Services

Connect key Bluemix optimised services to your project.

Code

Download working code, fully integrated with selected services.

Local development

Import the code into a development environment and make changes. Local bindings are provided for remote services.

CLI Deployment

Deploy to Bluemix using the CLI.

Repository Deployment

Alternatively, create a repository and deploy to Bluemix from there.

Bluemix developer console
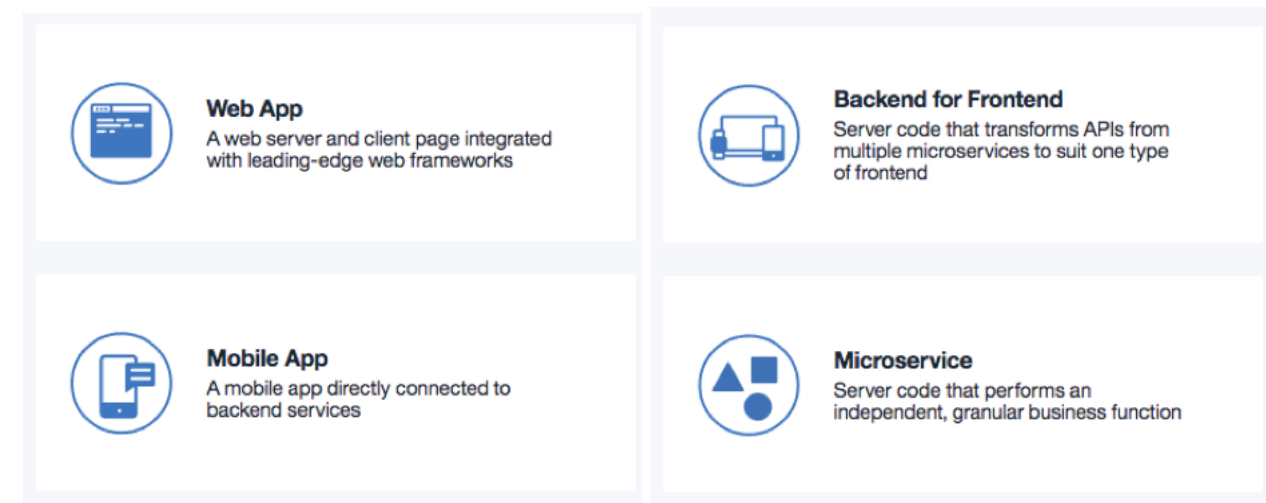
Create.

Select pattern

Choose a pattern that best fits your application.
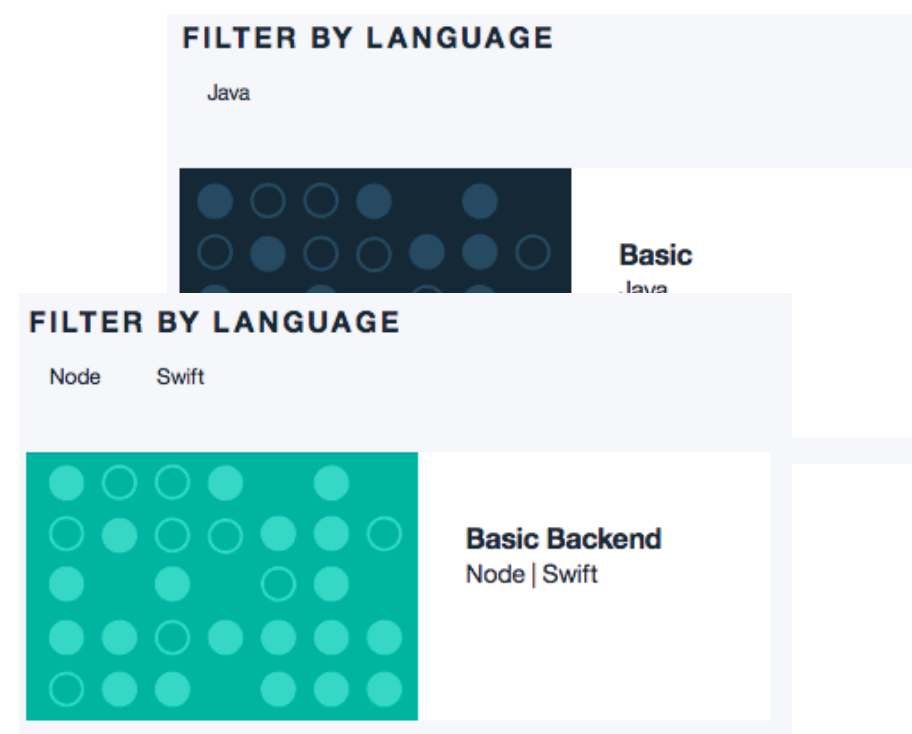
Select starter

Choose your starter for the selected pattern. Starters provide ready-to-run code
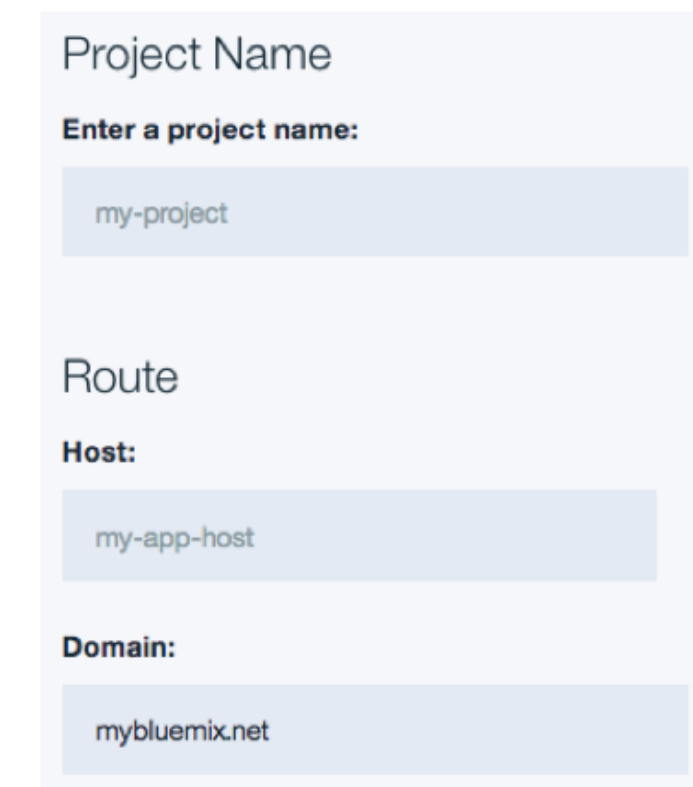
Create project

Depending on your choice of pattern and starter this may include Java, Node or Swift.

①————②————③

Bluemix developer console

Services.
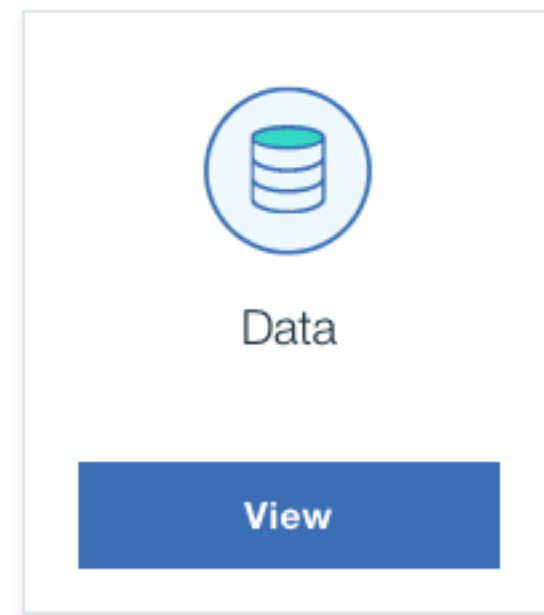
Add capabilities

Enhance your project by adding capabilities
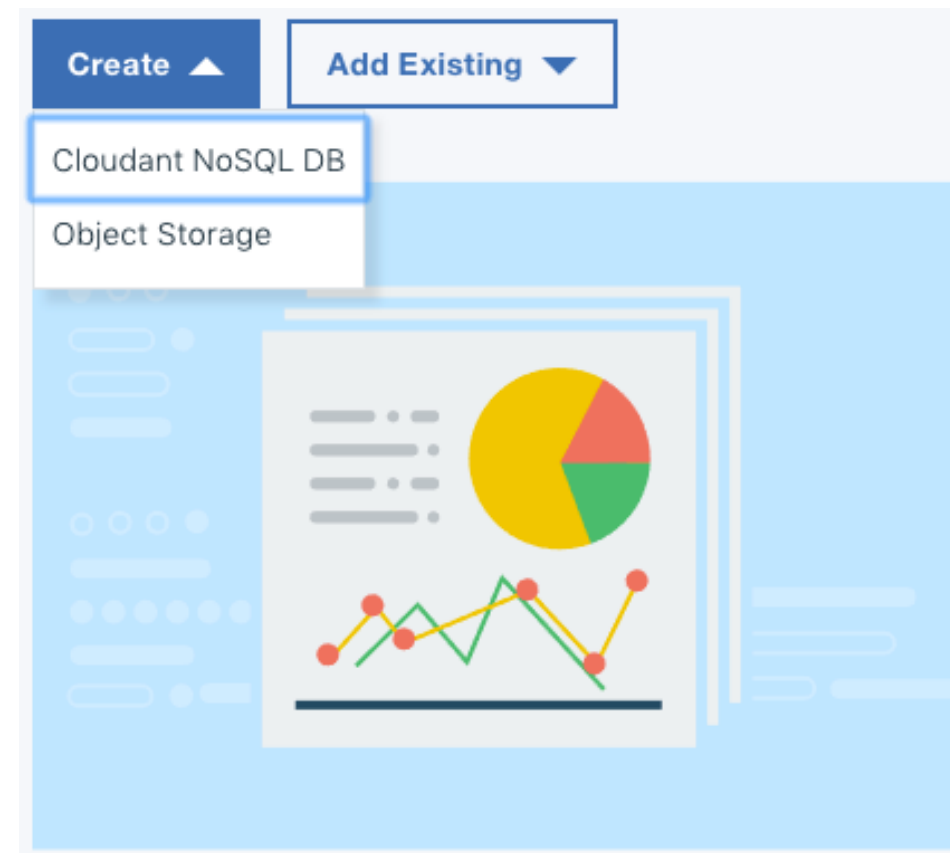
Select services

Create new service instances or add existing ones to the project.
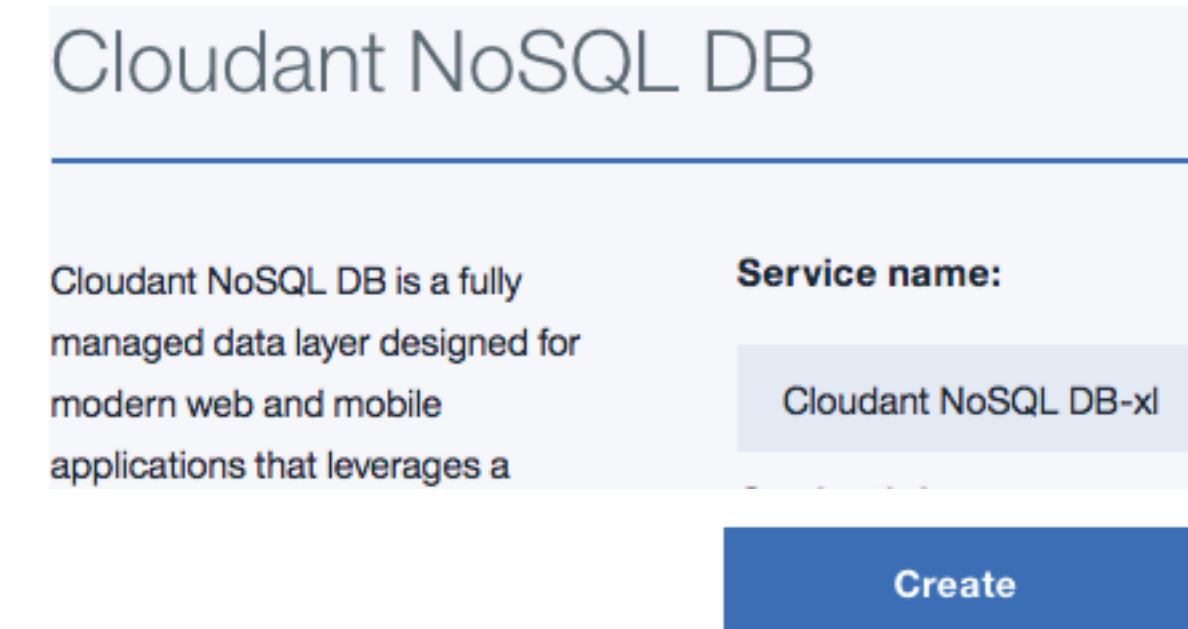
Configure and create

New services can be configured for your requirements before adding to your project.

1 ——————→ 2 ——————→ 3

Bluemix developer CLI plug-in

Create and services.

```
1. Install the Bluemix CLI.

2. Install the Developer Plug-in.

  $ bx plugin install dev -r Bluemix

3. Run it in a local development container from the project directory. This step requires
Docker.

  $ bx dev run
```

```
? Select a pattern:
1. Web App
2. Mobile App
3. Backend for Frontend
4. Microservice
Enter a number> 4

? Select a starter:
1. Basic
Enter a number> 1

? Select a language:
1. Java
Enter a number> 1

? Enter a name for your project> bxclimsjava

? Enter a hostname for your project> bxclimsjava
```

```
? Select a service:
1. Cloudant NoSQL Database
2. Object Storage
Enter a number> 1

? Select a service plan:
1. Lite
2. Standard
Enter a number> 1

Successfully added service to project.

? Do you want to add another service? [y/n]>
```

Install CLI plug-in

Download and install the plug-in. Requires Docker.

Select starter

Choose your starter for the selected pattern. Depending on your choice of pattern and starter this may include Java, Node or Swift.

Create project

Create and configure new service instances for the project.

1 —————————> 2 —————————> 3

Local Development
Code.
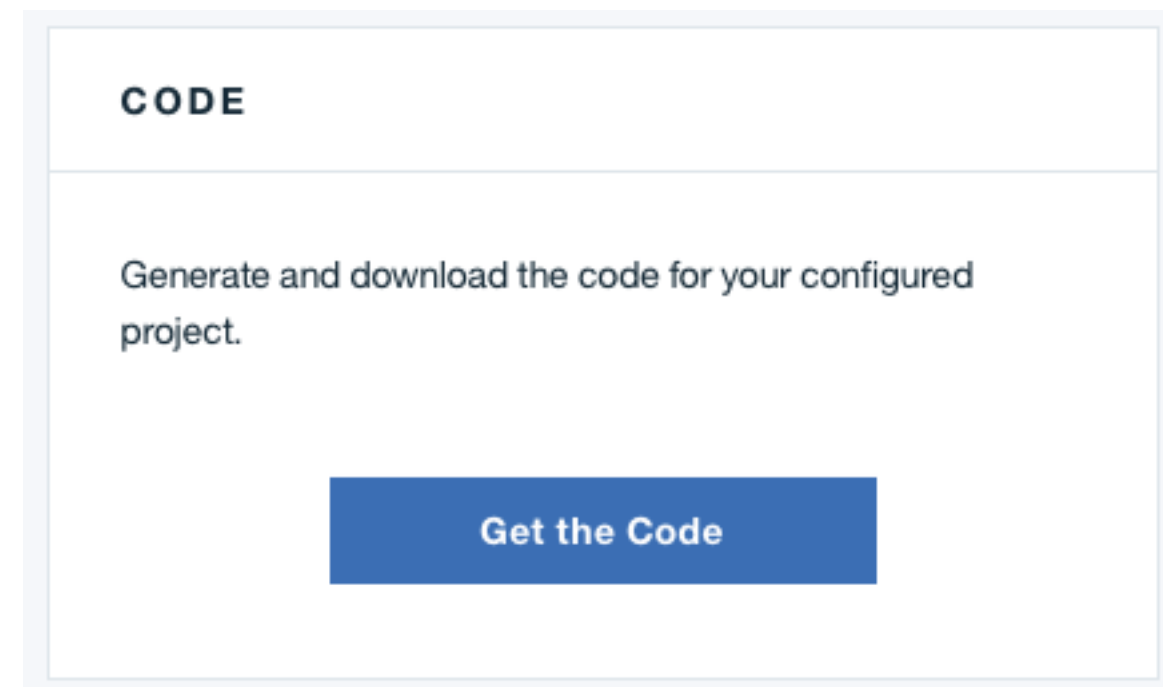
Download the code
Download the code from the console. CLI will have automatically placed the code in your current directory.

Build locally
Use the CLI to build, run and debug your project inside a Docker container.
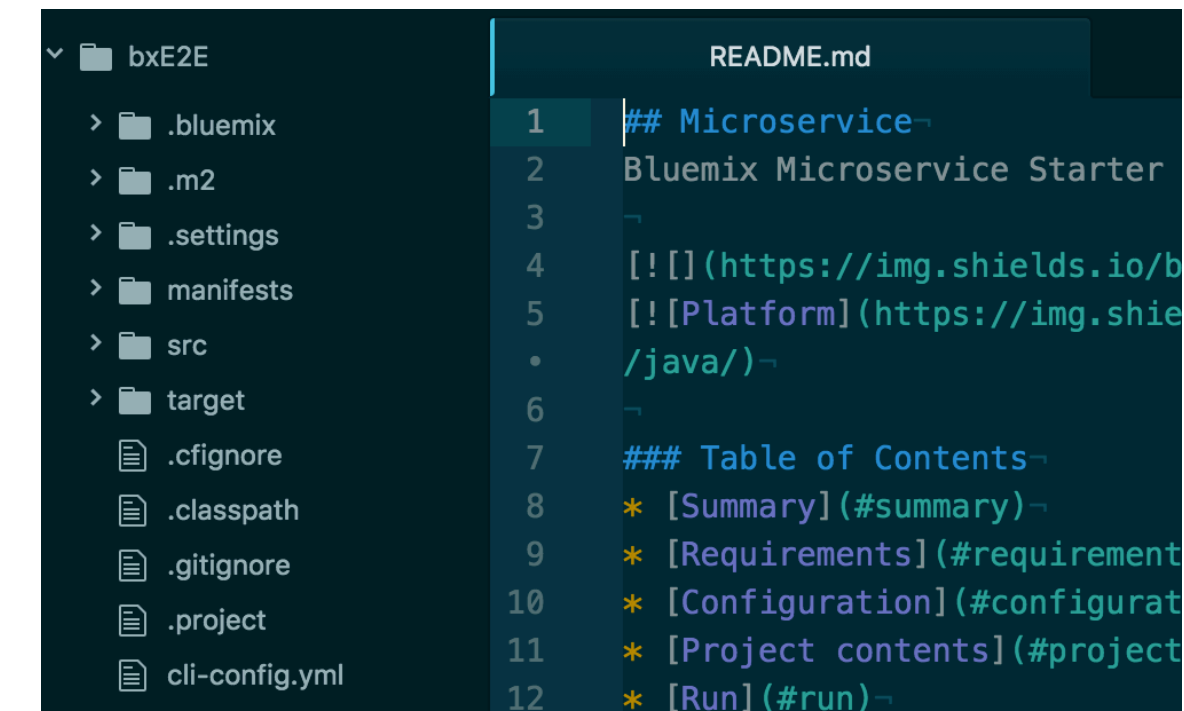
Develop
Develop with the code locally using your preferred tools. Local instance will use service instances in Bluemix.

1 ———————————— 2 ———————————— 3
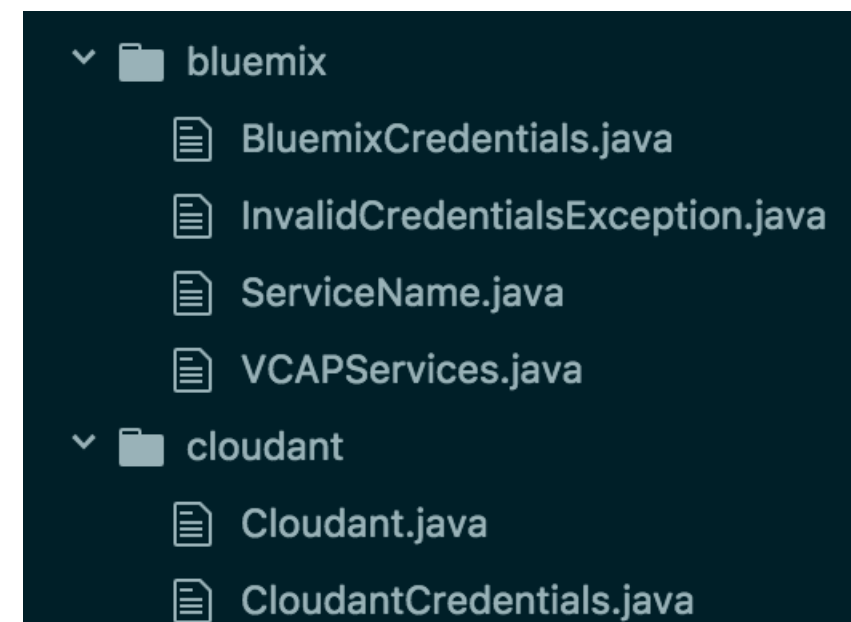
Generated code

Toolchain configuration.


```
    v  📁  .bluemix
        📄  deploy.json
        📄  pipeline.yml
        📄  toolchain.yml
```



```
application: ${CF_APP}
script: |-¤¬
··#!/bin/bash¤¬
···cf create-service "cloudantNoSQLDB"
···cf push "${CF_APP}" -p target/bxmsja
···# View logs¤¬
···# cf logs "${CF_APP}" --recent¤¬
```



```
toolchain:¤¬
··name: bxmsjava¤¬
¤¬
# Github repos¤¬
repo:¤¬
··service_id: githubpublic¤¬
··parameters:¤¬
····repo_url: "{{repository}}"
····type: link¤¬
····has_issues: true¤¬
```
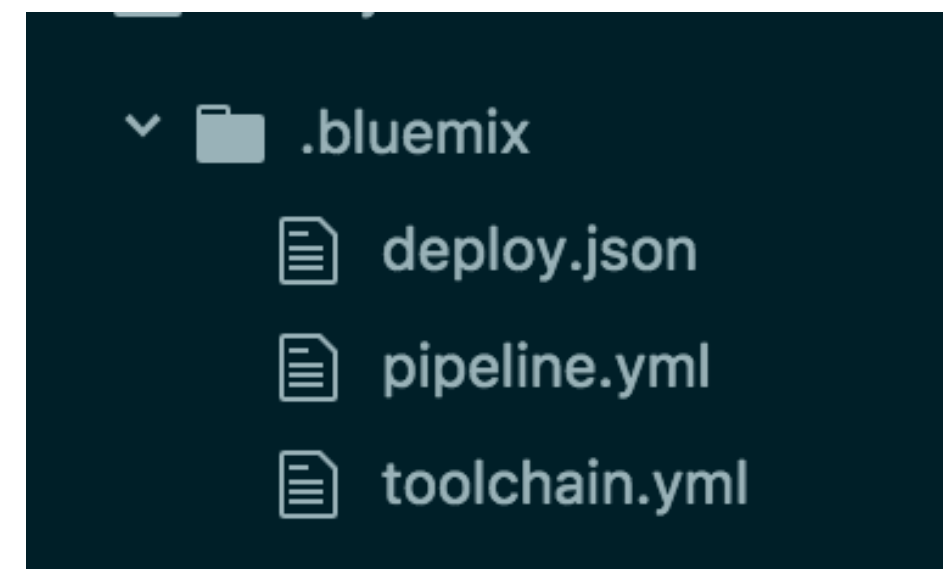
Toolchain configuration

Download the code from the console. CLI will have automatically placed the code in your current directory.

pipeline.yml

Use the CLI to build, run and debug your project inside a Docker container.

toolchain.yml

Develop with the code locally using your preferred tools. Local instance will use service instances in Bluemix.

Generated code

Application, Bluemix and server code.
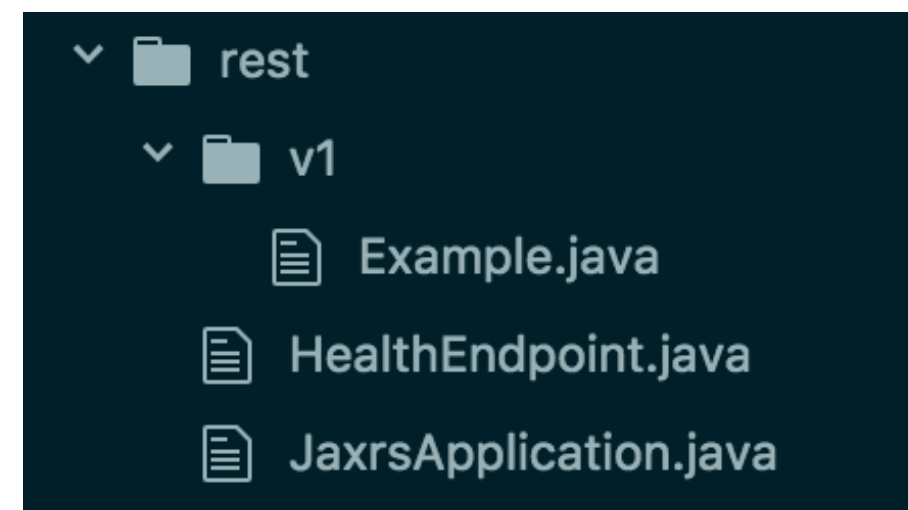
Application code

Exemplar code is generated to create a functional application. Demonstrate any established best practices or proven patterns for a given language.

Bluemix code

If services were added to the project, binding code is generated to access them, either locally or when deployed.
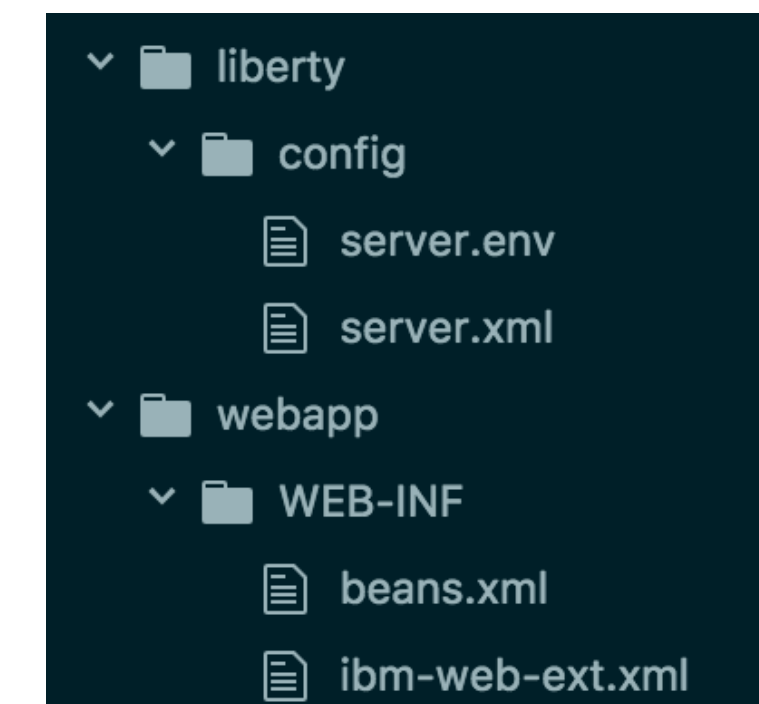
Server configuration

The appropriate server configuration files are also generated.

Generated code

Local development .
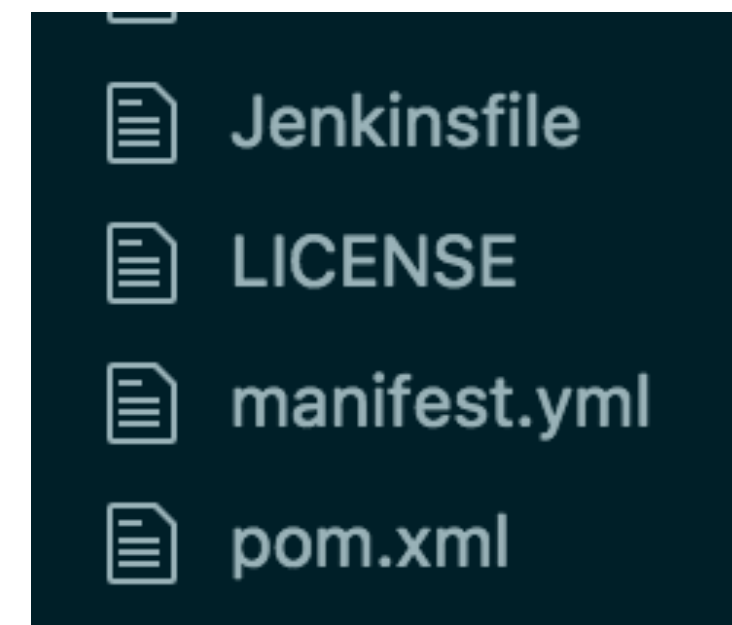
Build files

All the required files to build
your project locally and deploy
to Bluemix.
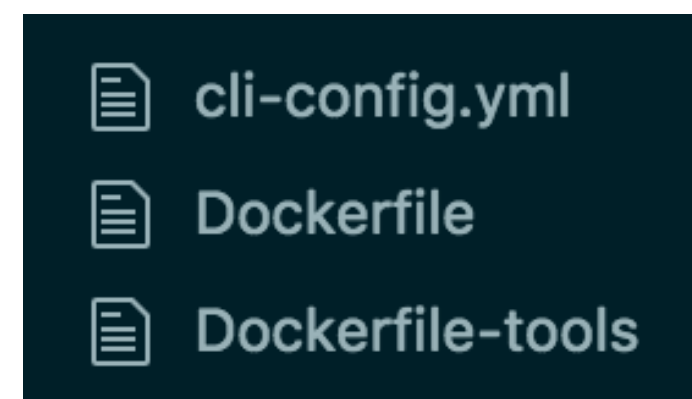
Local development

Configuration files for running
the project in local containers.
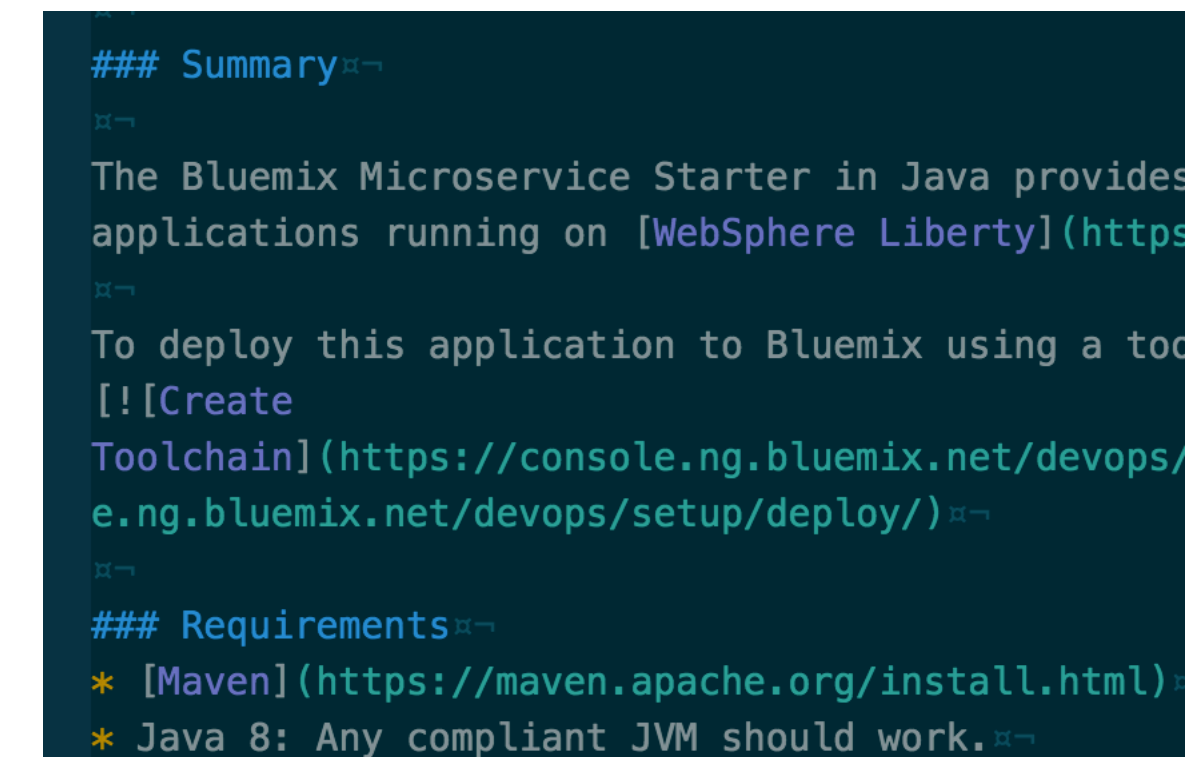
Readme

Further information is available
in the readme file.

Deployment

Deploy via CLI or repository.


```
Uploading app files from: /var/folders/
Uploading 7.9K, 15 files
Done uploading
OK
```


📖 README.md

Microservice sample

This microservice is configured to connect t

Create toolchain

RUNNING	STATE	ACTIONS
1	● Running	↻ ↗ ⋮

Deploy from the CLI

Once local development is complete, the project can be deployed using the CLI.
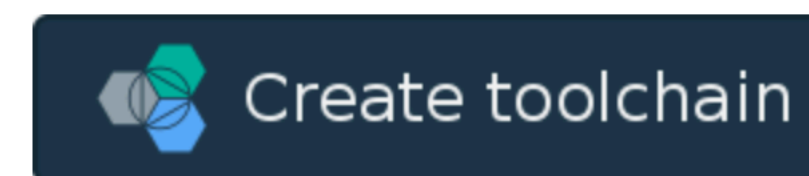
Deploy from Github

Checking your code into a repository will allow you to deploy from Github.

Running in Blumemix

Once deployment has finished, then the application will be up and running in Bluemix.

Bluemix developer summary
GUI or CLI, same journey

	GUI	CLI
| Step 1 : Choose your starting point |  | ```
? Select a pattern:
1. Web App
2. Mobile App
3. Backend for Frontend
4. Microservice
Enter a number> 4

? Select a starter:
1. Basic
Enter a number> 1

? Select a language:
1. Java
Enter a number> 1

? Enter a name for your project>
``` |
| Step 2 : add some services |  | ```
? Do you want to add services to your project? [y/n]> y

? Select a service:
1. Cloudant NoSQL Database
2. Object Storage
Enter a number>
``` |
| Step 3 : download the code
Step 3a : (optional) local development | | |
| Step 4 : deploy to bluemix |  | ```
Uploading app files from: /var/folders,
Uploading 7.9K, 15 files
Done uploading
OK
``` |

Liberty App Accelerator

Build Liberty focused applications.

- WebSphere Liberty / JEE focused.

- Select list of technologies or Liberty features.

- Generates Liberty configuration, build files and code.

- Swagger option allows for code to be generated from JSON or yaml.

Liberty app accelerator

Easily start building apps for WebSphere Liberty, a Java EE application server

Configure WebSphere Liberty with a set of selected technologies. Then download the project as a zip file.

STEP 1 / 2

Select one or more technology types:

REST ☐ i	Web Sockets ☐ i	Persistence ☐ i
Servlet ☐ i	Spring Boot ☐ i	Watson SDK ☐ i
MicroProfile ☑ i	Microservice Builder (Beta) ☐ i	Swagger ☑ i ⚙

☑ Generate server code from a Swagger document

Select file

Liberty App Accelerator

Build Liberty focused applications.

- Optional configuration – build type and deploy to Bluemix.

- Create directly on GitHub or download code locally.

Further reading
Where to find out more information.

- Bluemix : https://console.ng.bluemix.net/developer/getting-started/

- Bluemix CLI : http://clis.ng.bluemix.net/ui/home.html

- Liberty App Accelerator : http://ibm.biz/appaccelerator

- WASdev : https://developer.ibm.com/wasdev/

Questions ... ?

Notices and disclaimers

Thank you!