



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

WebSphere User Group (30th March 2017)

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Adam Pilkington

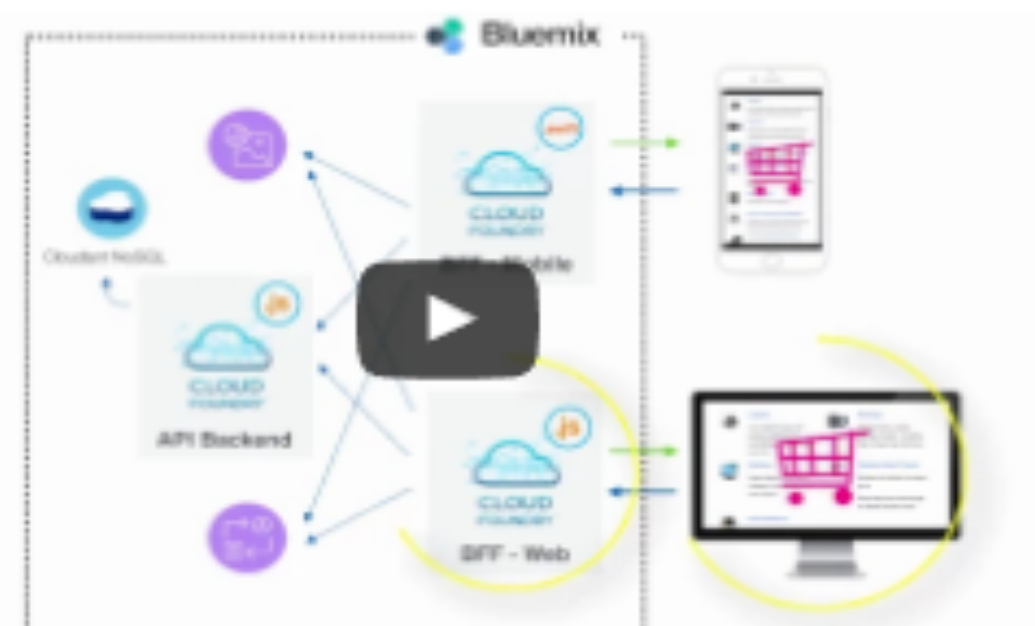
IBM Software Engineer, Master Inventor.

- 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 accelerator

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

Liberty App Accelerator

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

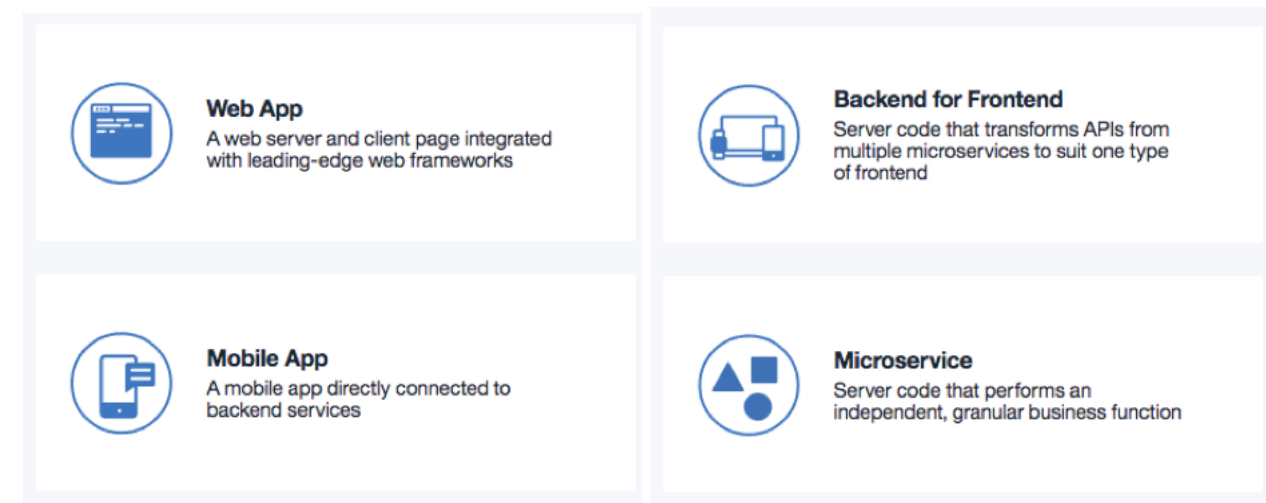
Deploy to Bluemix using the CLI.

Repository Deployment

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

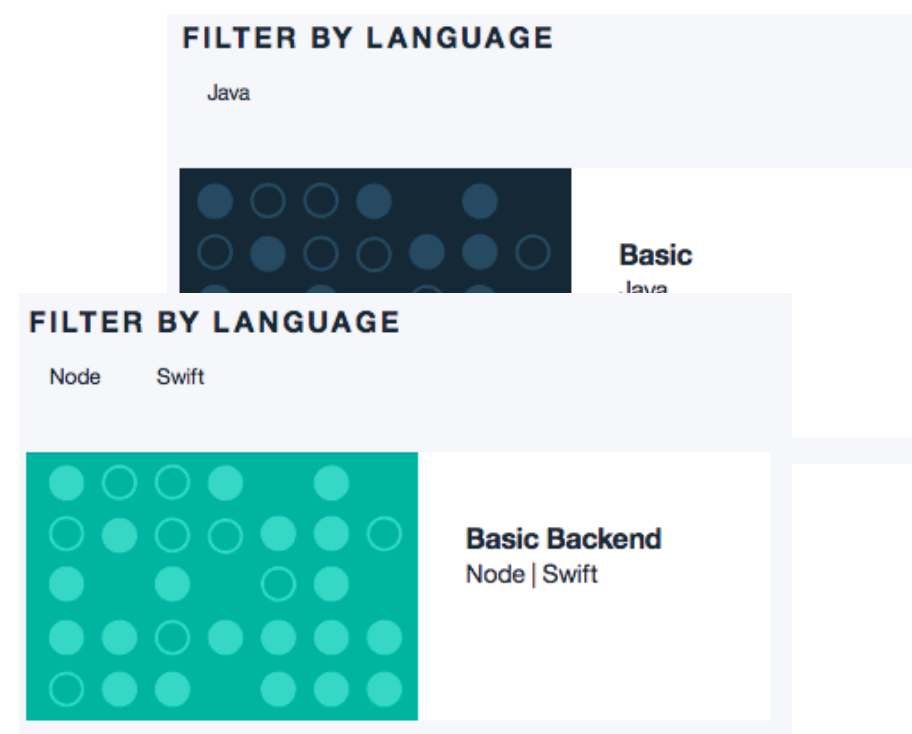
Bluemix developer console

Create.



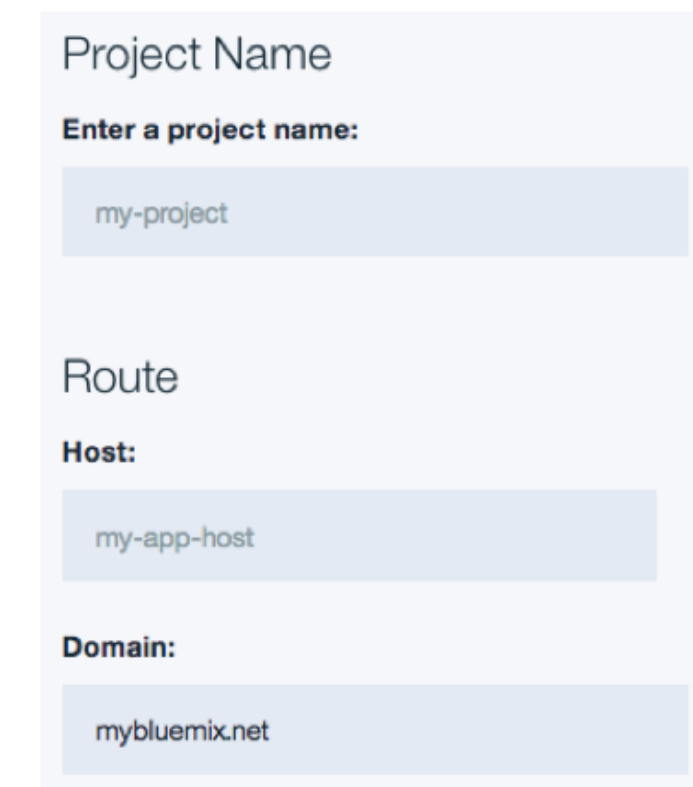
Select pattern

Choose a pattern that best fits your application.



Select starter

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



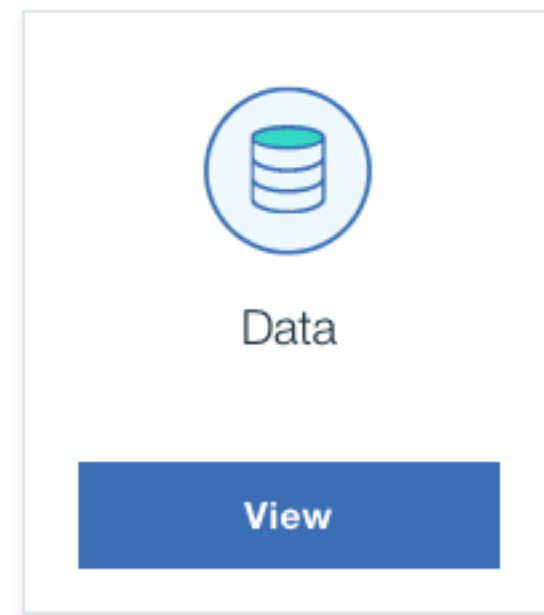
Create project

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



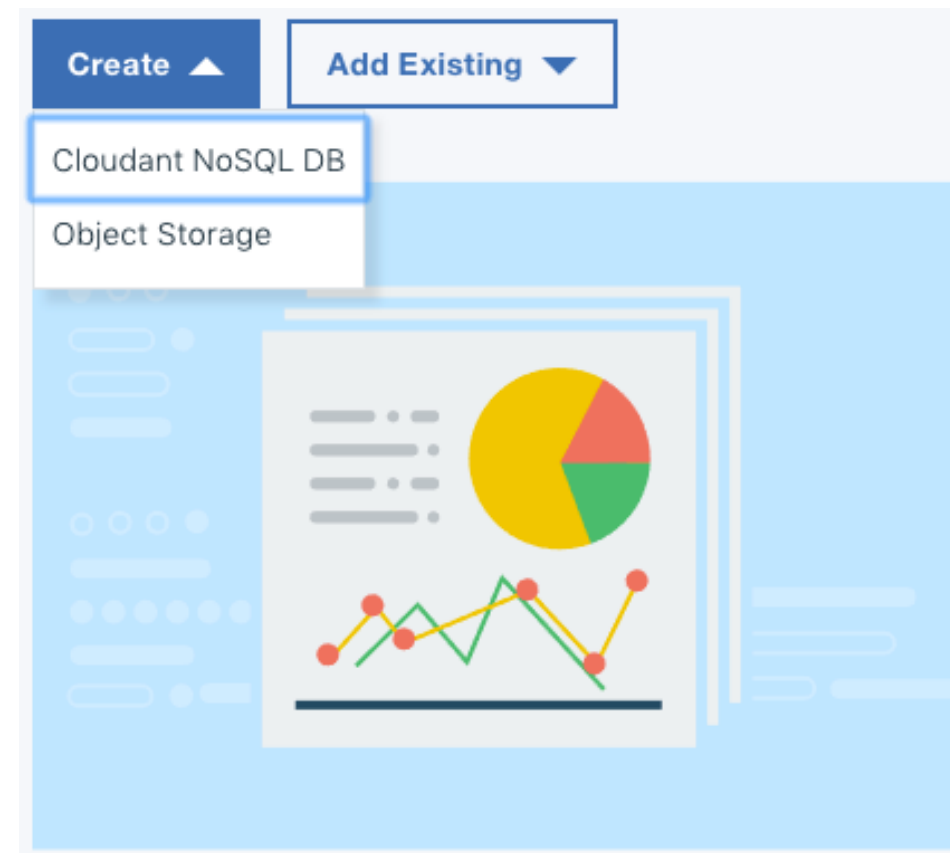
Bluemix developer console

Services.



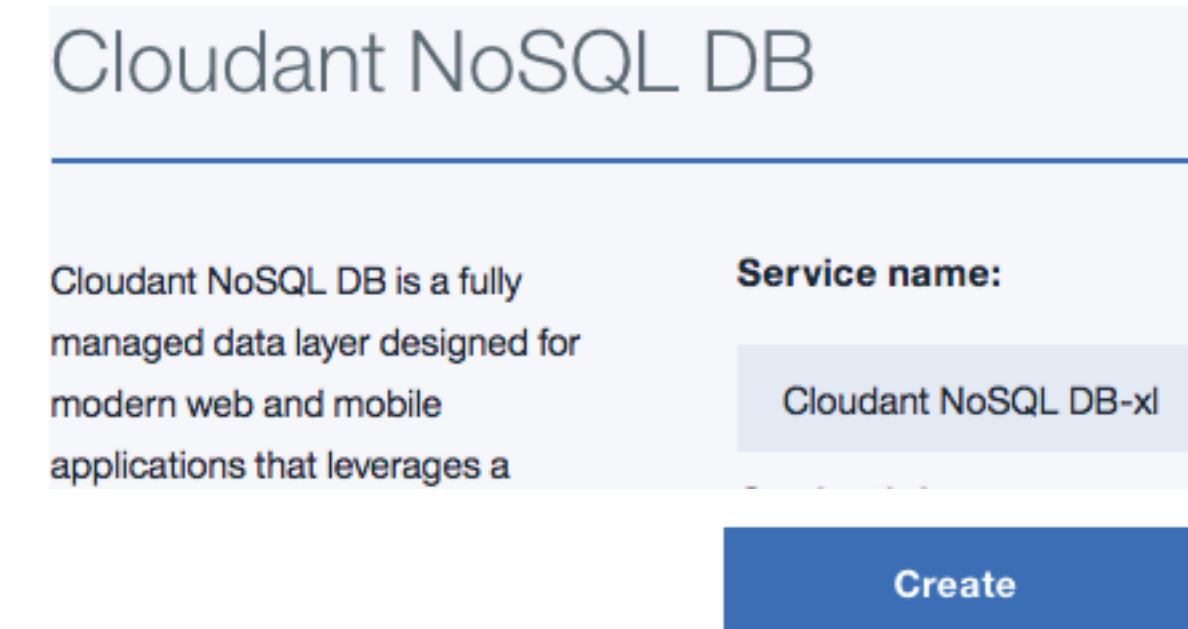
Add capabilities

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.



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
```

Install CLI plug-in

Download and install the plug-in. Requires Docker.

```
? 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 starter

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

```
? 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]>
```

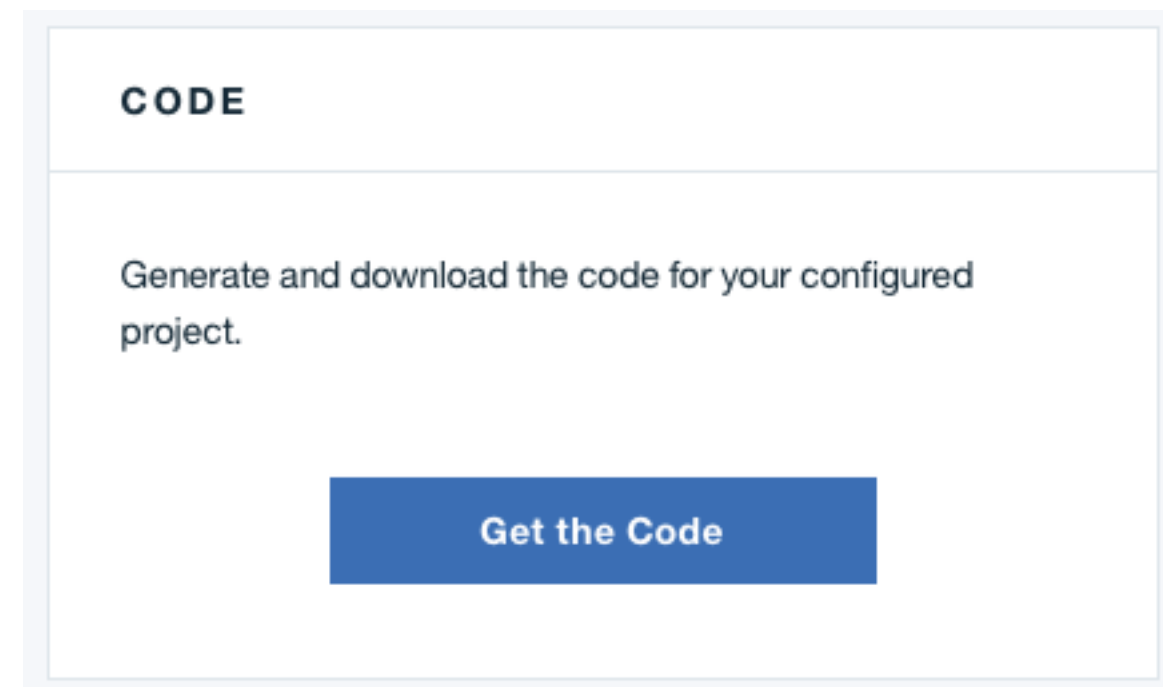
Create project

Create and configure new service instances for the project.



Local Development

Code.



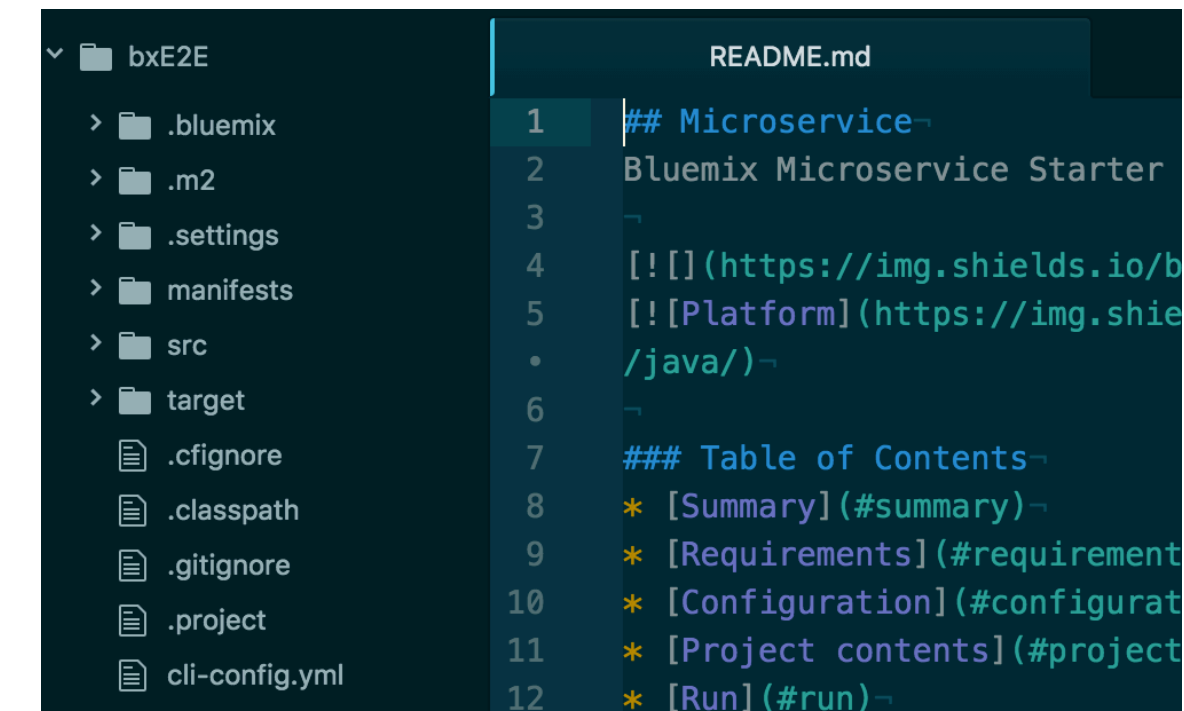
Download the code

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

```
-----  
[INFO] BUILD SUCCESS  
[INFO] -----  
[INFO] Total time: 01:46 min  
[INFO] Finished at: 2017-03-27T16:42:51+00:00  
[INFO] Final Memory: 13M/23M  
[INFO] -----  
  
Build time: 1m50.130127066s  
Done.  
Stopping the 'bx-dev-bxE2E-tools' container...  
OK
```

Build locally

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



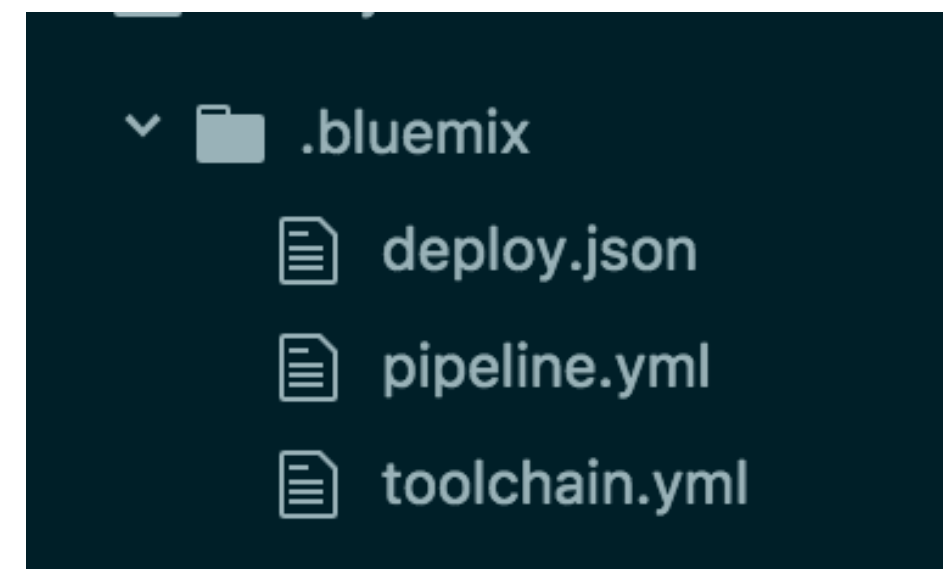
Develop

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



Generated code

Toolchain configuration.



Toolchain configuration

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

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

pipeline.yml

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

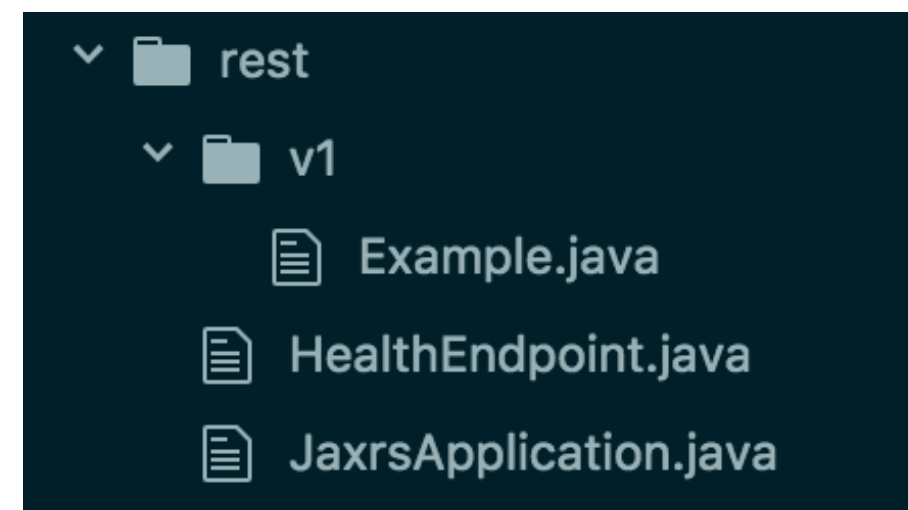
```
toolchain:
  name: bxmsjava
  # Github repos
  repo:
    service_id: githubpublic
    parameters:
      repo_url: "{{repository}}"
      type: link
      has_issues: true
```

toolchain.yml

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

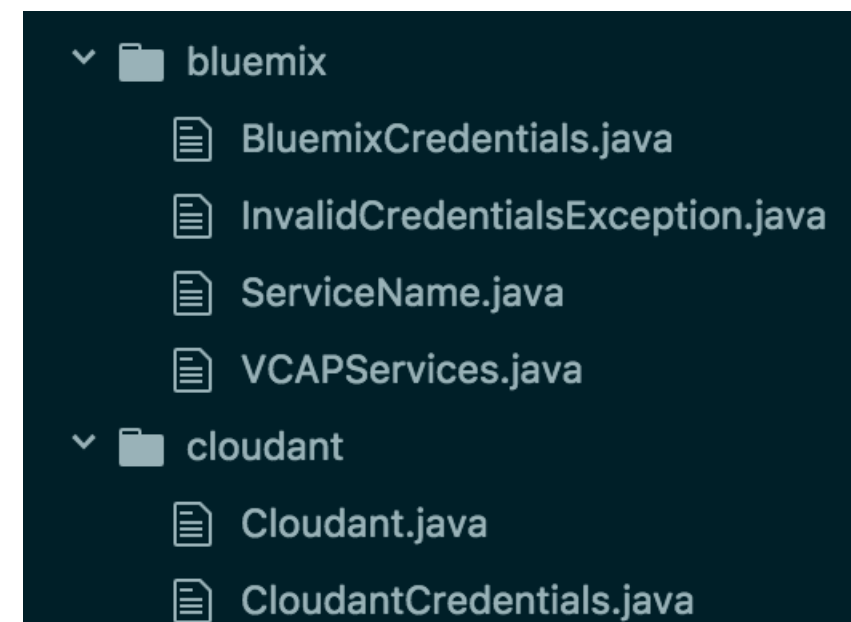
Generated code

Application, Bluemix and server code.



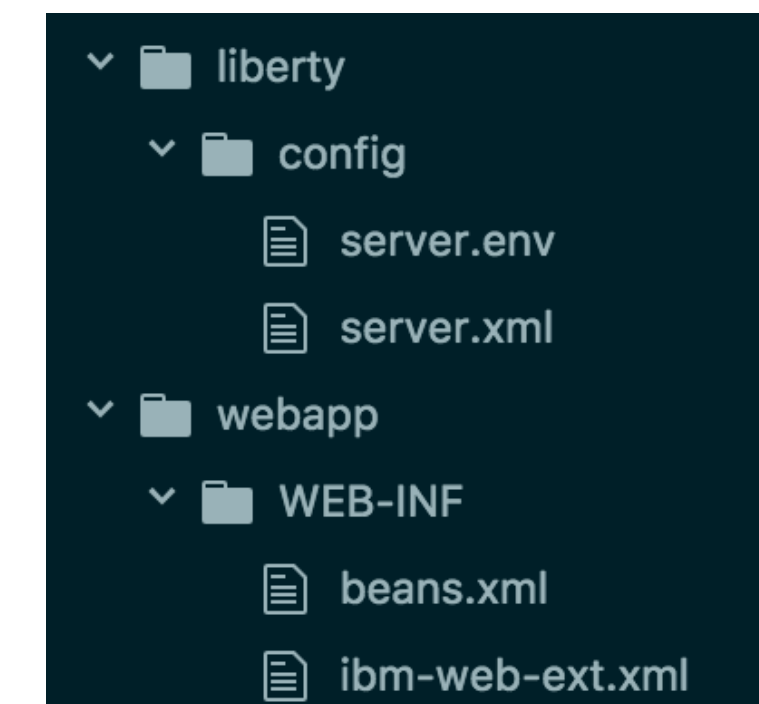
Application code

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.

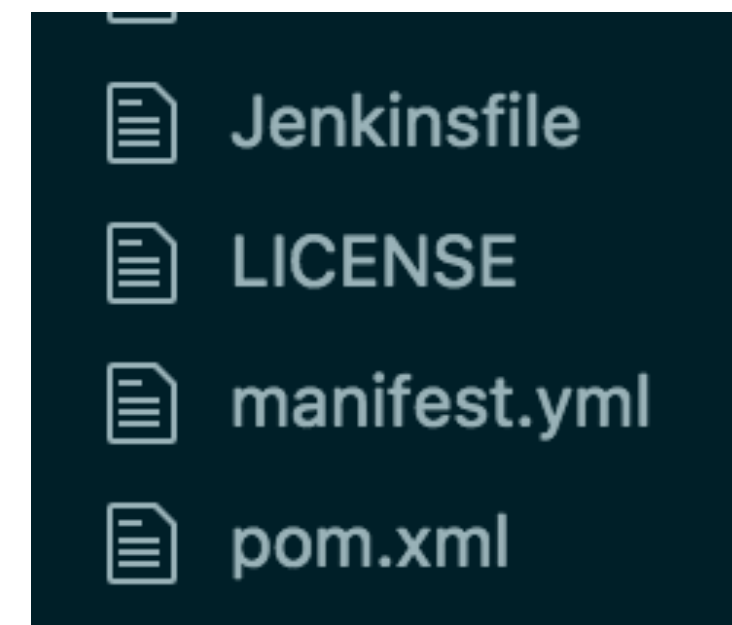


Server configuration

The appropriate server configuration files are also generated.

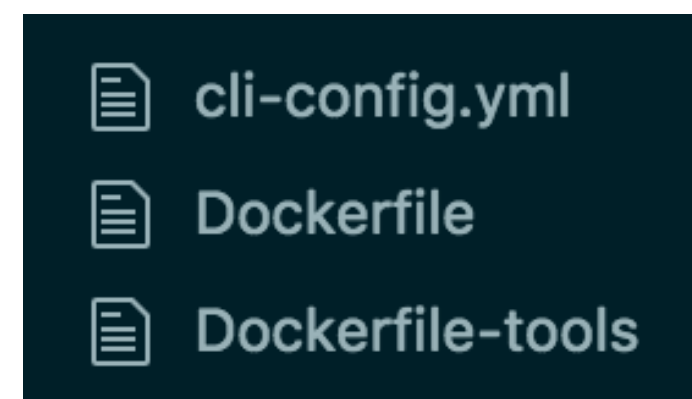
Generated code

Local development .



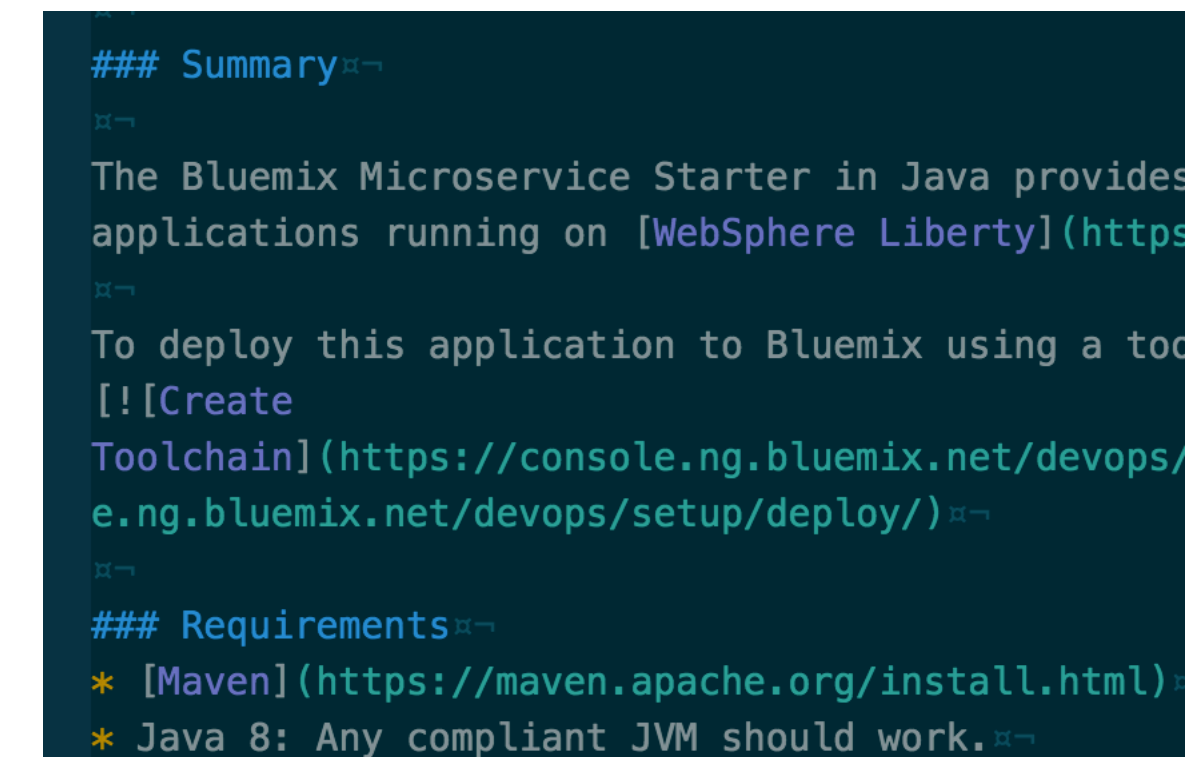
Build files

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
```

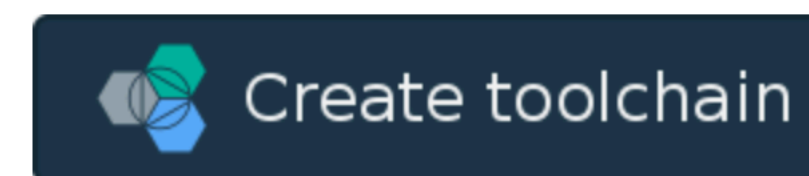
Deploy from the CLI

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

README.md




Microservice sample

This microservice is configured to connect to



Deploy from Github

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

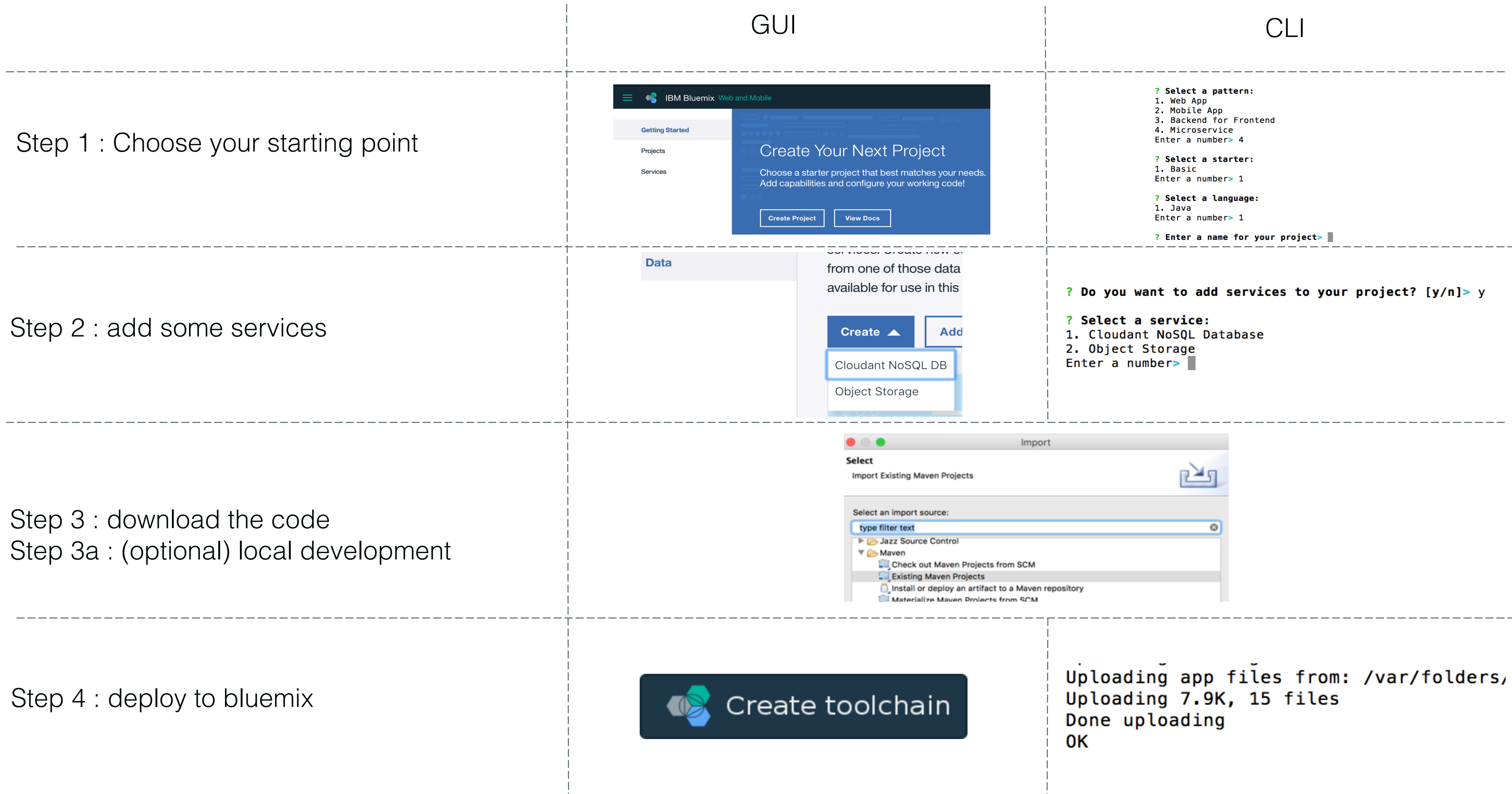
RUNNING	STATE	ACTIONS
1	● Running	  

Running in Bluemix

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

Bluemix developer summary

GUI or CLI, same journey



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:

<input type="checkbox"/> REST <input type="checkbox"/> i	<input type="checkbox"/> Web Sockets <input type="checkbox"/> i	<input type="checkbox"/> Persistence <input type="checkbox"/> i
<input type="checkbox"/> Servlet <input type="checkbox"/> i	<input type="checkbox"/> Spring Boot <input type="checkbox"/> i	<input type="checkbox"/> Watson SDK <input type="checkbox"/> i
<input checked="" type="checkbox"/>  MicroProfile <input checked="" type="checkbox"/> i	<input type="checkbox"/> Microservice Builder (Beta) <input type="checkbox"/> i	<input checked="" type="checkbox"/> Swagger <input checked="" type="checkbox"/> i <input type="checkbox"/> ⚙️

Generate server code from a Swagger document

Liberty App Accelerator

Build Liberty focused applications.

- Optional configuration – build type and deploy to Bluemix.
- Create directly on GitHub or download code locally.

STEP 2 / 2

Configure your project and either create in GitHub or download as a ZIP file.

Name the project:

Optional configuration ^

Group id:

Artifact id:

Build type:

Maven Gradle

Bluemix default deployment

Please note: The Maven projects created by the Liberty app accelerator have dependencies on projects with the following licenses: [AL 2.0](#) and [ILAN](#).

Create On GitHub

or

Download

Help us to help you!

We will be adding new technologies and capabilities to this page over time. Get in touch To give us feedback or tell us which technology types you would like to see please raise an issue on our [GitHub page](#).

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 ... ?

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