National College of Ireland

Configuration Manual

MSc Research Project
Cloud Computing

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Project Submission Sheet
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Configuration Manual

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1 Node.js and NPM

Node.js is a runtime for JavaScript to run it outside a web browser. On installation, you get npm, which is the Node Package Manager, used for installing libraries and tools—also your CLI tool.

1.1 For Windows

- Node js: **https://nodejs.org/en/download/package-manager**

1.2 For Linux

- **update repository: sudo apt-get update**
- **Node js: sudo apt-get install -y nodejs**
- **Npm: sudo apt-get install -y npm**

2 Install Dockon

After installing Npm and Node js user will install the CLI tool in any directory.

• 3 Run and Use Dockon

To check the CLI tool, User need to go in his CMD. // The path of the directory should be that of the file or project user wish to make a docker file.
After this user need to run the command.

- **dockon –dir .**

This will ask the user to input some values which are.
App name,Working Directory,Port,Version
Once the user enters the value, A Dockerfile will be create in the file.
If the user wants to automate with a specific input. The user can do that by passing the key of the field and a value.

- **dockon –dir . –auto -p 8000**

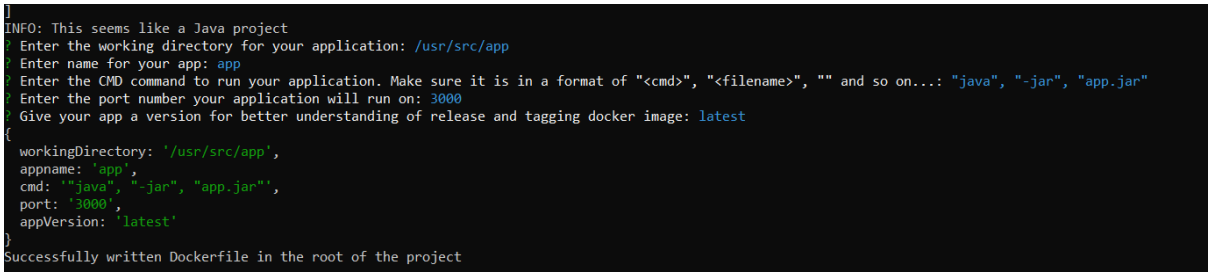

Figure 1: Docker with User Inputs

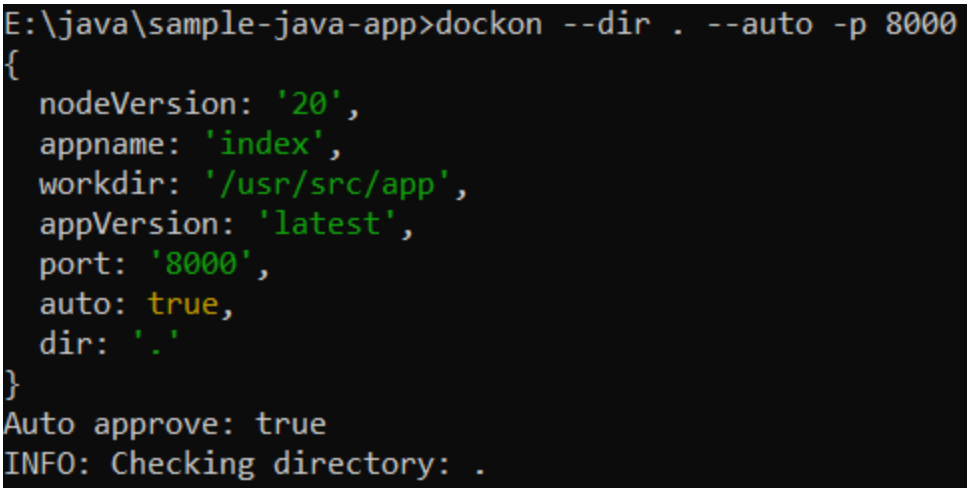

Figure 2: Dockerfile with Auto Inputs

4 Install Docker

- For Windows: **https://docs.docker.com/desktop/install/windows-install/**
- For Linux: **sudo apt install -y docker.io**

5 Check and Build the Docker Image

5.1 Verify the Dockerfile

- **cat Dockerfile**

5.2 Build the Docker Image

- **docker build -t my-docker-image .** (-t refers to tagging the image with image name)

5.3 Run the Docker Container

- **docker run -d -p "port you want to run":"port inside the container" –name my-docker-container my-docker-image**

5.4 Verify the Docker Image

- **docker ps**

Figure 3: Docker Image Running

6 CI/CD Automation

All the steps above works if you want to run the CLI tool locally on your machine. However, this CLI tool can also be used to automate the project using CI/CD.

6.1 Set up Project Repository

- **git init**

Add your project files to the repository

- **git add .**

Commit the changes

- **git commit -m "Initial Commit"**

Add a remote repository

- **git remote add origin https://github.com/your-username/your-repo.git**

Push the Changes to the git repository

- **git push -u origin main**

6.2 Create a CI/CD Pipeline workflow

CI/CD pipeline workflow is necessary for automation.

6.2.1 Github workflows

Create a github workflows in your directory.

- **mkdir -p .github/workflow**

Create the CI/CD pipeline file name ci-cd-pipeline.yml

6.3 Adding Dockon required files

To use the automation feature of dockon some files are required to be added in the ci-cd-pipeline.yml.

To run node js

- - name: Set up Node.js 20.x
  uses: actions/setup-node@v2
  with:
  node-version: "20"

To run Npm and Dockon tool

- - name: Install dockon
  run: npm install -g dockon

To generate a Dockerfile and Auto fill the user input fields

- - name: Generate Dockerfile with dockon
  run: dockon –dir . –auto

6.4 Github Build and Deploy

After pushing the changes to the main directory you will see in git actions something like this.

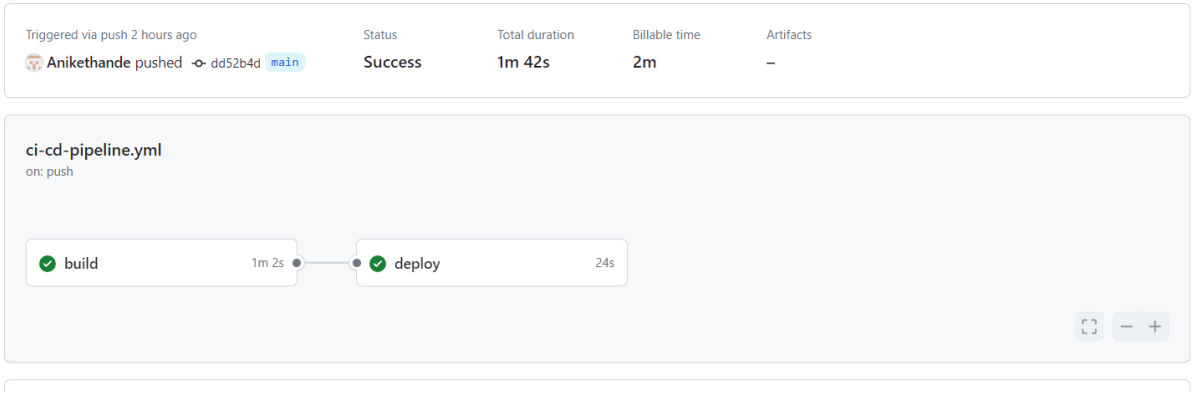

Figure 4: Build and Deploy