POLITECNICO DI TORINO

Corso di Laurea in Ingegneria Informatica

Master Degree Thesis

Development, Test and Application of a framework for cloud serverless services

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Abstract

todo

brief description of the thesis

Acknowledgements

todo

Contents

Chapter 1

Introduction

1.1 Serverless

todo: what is it? description of the framework and description of a plain serverless project

1.1.1 Advantages

todo

1.1.2 Disadvantages

todo

1.2 The idea behind Restlessness

todo

Idea behind it. General description. Which problems it aims to solve, advantages (user experience, scalability, coding efficiency) with respect to a plain serverless codebase, disadvantages. Why it is Open Source

1.3 Related Works

todo?? Are there other similar framework? What are the differences? Why use restlessness instead?

1.4 Tools

Development tools/main software used with brief description: git/github, circle-ci, serverless framework, aws, jetbrain's products, slack, npm, typescript etc

Chapter 2

Restlessness

Detailed description of the project's structure with description of main components/packages (maybe a class diagram could show easily the structure)

micro-services structure of the project created by the framework handling of environment files

2.1 Project created by the framework

todo
description of a project created usingthe framework

2.2 Core

todo

2.3 Cli

todo

2.4 Backend

todo

2.5 Frontend

todo

2.6 Testing

todo

handling of tests for the framework itself and for the project created by the framework

Chapter 3

Restlessness Extensions

the framework has been designed with extensibility in mind

some auth and dao extensions are already provided

3.1 Authentication

auth-jwt and auth-cognito packages

3.2 Database Access Object

dao-mongo package (plus plugin to create a database proxy)

3.2.1 Database Proxy

todo

show data about number of connections until crash in normal situation and when using the proxy

Chapter 4

Development

4.1 Github

Useful tools provided by GitHub (projects to handle tasks) Roadmap, development process/flow (issues, pull requests...)

4.2 Continuous Integration

circle-ci

Chapter 5

Application

Application to real projects with emerged problems

5.1 FGA covid school api

brief description of the project
Problems arised by using restlessness (mainly the need for a database proxy and a solution for cold start, i.e. warmup plugin)

5.2 Gbsweb Claranominis api

brief description of the project
Problems arised by using restlessness (mainly necessary migration to micro-services structure)

Chapter 6

Deployment

6.1 Aws

todo

detailed description of what resources are created when deploying

Chapter 7

Conclusions

todo??