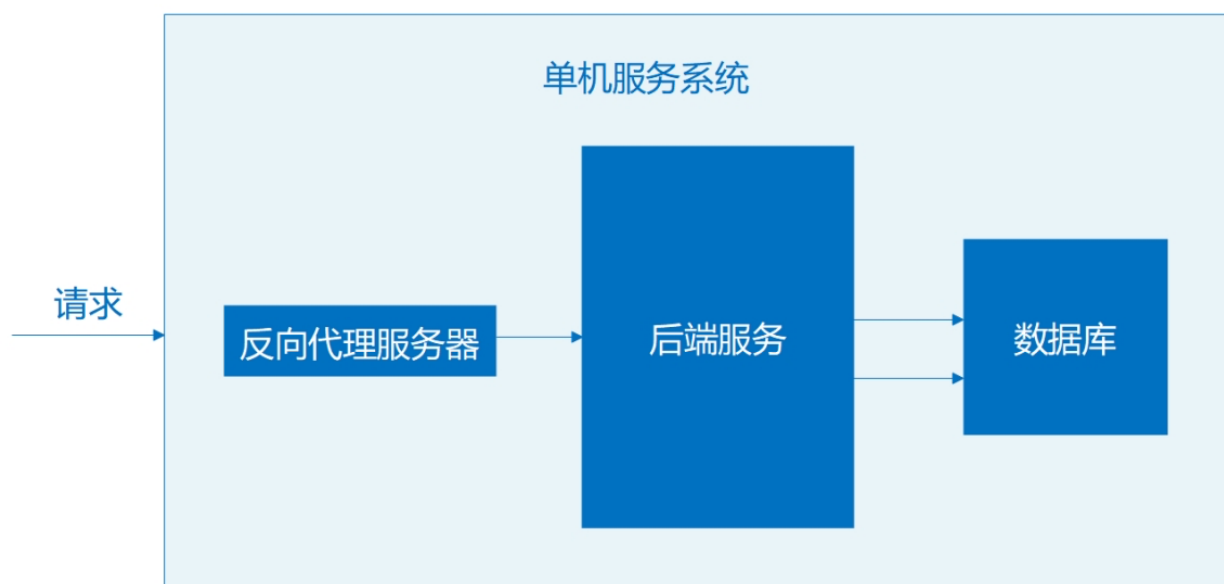


Web服务启动指令



在这里将会说明单机服务系统的部署流程。单机服务系统可以达到最低的时间延迟。

服务完整运行需要在Linux环境，运行终端，进入code文件夹目录中。

如果不需要启动反向代理服务器Alizarin，可以使用安装有Rust、Java环境的其他系统运行Web服务

启动数据库服务

1. 进入WondKV目录下。
2. 确认Rust环境已安装。

```
1 | $ cargo --version
```

3. 编译数据库可执行文件。

```
1 | $ cargo build --release
```

4. 以默认配置直接运行数据库。

```
1 | $ ./target/release/WondKV
```

WondKV运行时监听的默认端口是8080。由于代码中事先准备了数据文件，所以此时的数据库读取数据文件已经有了一定的航班信息数据。

启动后端服务

1. 进入FlightRecommendation目录下。
2. 确认Java环境已经安装。

```
1 | $ java --version
```

3. 清理之前的文件。

```
1 | $ mvn clean
```

4. 打包jar包。

```
1 | $ mvn package
```

5. 然后进入项目的target目录下。

```
1 | $ cd target
```

6. 最后运行jar包。

```
1 | $ java -jar jar包名称
```

后端服务的默认配置是监听8333端口，并尝试访问本机监听在8080端口的WondKV数据库。

启动反向代理服务器服务

1. 进入alizarin目录下。
2. 编译反向代理服务器可执行文件。

```
1 | $ make server
```

3. 运行反向代理服务器。

```
1 | ./server
```

反向代理服务器的默认配置同样也可以满足本机使用需求，监听8000端口，并将消息转发至后端服务的8333端口。

运行测试

使用curl命令访问服务进行测试。

```
1 $ curl -d "times=20220708&departures=LRH&arrival=LRX&passengerNum=2"
"http://127.0.0.1:8000/recommend/second"
```

应该会返回如下结果：

```
{("path": [{"carrier": ["CZ"], "cabin": ["Y", "Y"], "price": "8452", "agencies": [{"PEK002"}, {"sequenceNum": "00000764", "startTime": "202207080005", "endTime": "202207080145", "departure": "LRH", "arrival": "LTX", "flightNo": "1459"}], "totalStartTime": "202207080005", "totalEndTime": "202207080145", "price": "8452"}, {"path": [{"carrier": ["MU"], "cabin": ["Y", "Y"], "price": "9016", "agencies": [{"TA0002"}, {"sequenceNum": "00000071", "startTime": "202207080845", "endTime": "202207081055", "departure": "LRH", "arrival": "LTX", "flightNo": "2061"}], "totalStartTime": "202207080845", "totalEndTime": "202207081055", "price": "9016"}, {"path": [{"carrier": ["CZ"], "cabin": ["Y", "Y"], "price": "9656", "agencies": [{"CAN002"}, {"sequenceNum": "00001077", "startTime": "202207080905", "endTime": "202207081330", "departure": "LRH", "arrival": "LTX", "flightNo": "3386"}], "totalStartTime": "202207080905", "totalEndTime": "202207081330", "price": "9656"}, {"path": [{"carrier": ["JR"], "cabin": ["Y", "Y"], "price": "10030", "agencies": [{"SHA002"}, {"sequenceNum": "00001076", "startTime": "202207081720", "endTime": "202207081810", "departure": "LRH", "arrival": "LTX", "flightNo": "2033"}], "totalStartTime": "202207081720", "totalEndTime": "202207081810", "price": "10030"}, {"path": [{"carrier": ["MU"], "cabin": ["Y", "Y"], "price": "11148", "agencies": [{"CAN001"}, {"sequenceNum": "00000763", "startTime": "202207081600", "endTime": "202207082040", "departure": "LRH", "arrival": "LTX", "flightNo": "4853"}], "totalStartTime": "202207081600", "totalEndTime": "202207082040", "price": "11148"}, {"path": [{"carrier": ["JR"], "cabin": ["Y", "Y"], "price": "11890", "agencies": [{"TA0001"}, {"sequenceNum": "00000072", "startTime": "202207081135", "endTime": "202207081315", "departure": "LRH", "arrival": "LTX", "flightNo": "4744"}], "totalStartTime": "202207081135", "totalEndTime": "202207081315", "price": "11890"}, {"path": [{"carrier": ["ZH"], "cabin": ["Y", "Y"], "price": "8366", "agencies": [{"PEK002"}, {"sequenceNum": "00000600", "startTime": "202207082130", "endTime": "202207090140", "departure": "LRH", "arrival": "NAY", "flightNo": "4871"}], "carrier": ["KN"], "cabin": ["Y", "Y"], "price": "10146", "agencies": [{"CAN001"}, {"sequenceNum": "00000981", "startTime": "202207082030", "endTime": "202207082350", "departure": "NAY", "arrival": "LTX", "flightNo": "3555"}], "totalStartTime": "202207082130", "totalEndTime": "202207082350", "price": "18512"}, {"path": [{"carrier": ["MU"], "cabin": ["Y", "Y"], "price": "8850", "agencies": [{"CAN001"}, {"sequenceNum": "00000289", "startTime": "202207082300", "endTime": "202207090015", "departure": "LRH", "arrival": "VYN", "flightNo": "4645"}], "carrier": ["G5"], "cabin": ["Y", "Y"], "price": "10244", "agencies": [{"CAN001"}, {"sequenceNum": "00000937", "startTime": "202207080650", "endTime": "202207081120", "departure": "VYN", "arrival": "EYM", "flightNo": "1141"}], "carrier": ["MF"], "cabin": ["Y", "Y"], "price": "8992", "agencies": [{"PEK002"}, {"sequenceNum": "00000797", "startTime": "202207081935", "endTime": "202207090045", "departure": "EYM", "arrival": "LTX", "flightNo": "1960"}], "totalStartTime": "202207080650", "totalEndTime": "202207090045", "price": "28086"}, {"path": [{"carrier": ["ZH"], "cabin": ["Y", "Y"], "price": "9878", "agencies": [{"TA0002"}, {"sequenceNum": "00001433", "startTime": "202207082105", "endTime": "202207090035", "departure": "LRH", "arrival": "VYN", "flightNo": "2105"}], "carrier": ["G5"], "cabin": ["Y", "Y"], "price": "10244", "agencies": [{"CAN001"}, {"sequenceNum": "00000937", "startTime": "202207080650", "endTime": "202207081120", "departure": "VYN", "arrival": "EYM", "flightNo": "1141"}], "carrier": ["MF"], "cabin": ["Y", "Y"], "price": "8992", "agencies": [{"PEK002"}, {"sequenceNum": "00000797", "startTime": "202207081935", "endTime": "202207090045", "departure": "EYM", "arrival": "LTX", "flightNo": "1960"}], "totalStartTime": "202207081105", "totalEndTime": "202207090045", "price": "29114"}, {"path": [{"carrier": ["MU"], "cabin": ["Y", "Y"], "price": "8850", "agencies": [{"CAN001"}, {"sequenceNum": "00000289", "startTime": "202207082300", "endTime": "202207090015", "departure": "LRH", "arrival": "VYN", "flightNo": "4645"}], "carrier": ["MU"], "cabin": ["Y", "Y"], "price": "8110", "agencies": [{"TA0002"}, {"sequenceNum": "00001734", "startTime": "202207081645", "endTime": "202207082105", "departure": "LRH", "arrival": "HXV"}]
```

说明

默认的代码参数设置使得我们可以直接在一台机器上运行Web服务，如果需要更复杂以及自定义的运行配置，可以参考设计说明文档每一部分的使用说明。