运行指南

运行服务

开始前，请确认安装了docker。

进入/docker目录，目录结构如下：

```
.
├── docker-compose.yml
├── docker_backend
├── docker_emqx
├── docker_frontend
└── docker_mysql
```

运行dock-compose up

第一次运行时，服务会按照次序启动，但由于emqx和mysql服务启动需要比较长的时间，可能会导致后端因为无法连接emqx服务器而失败。报如下的错：

```
iot-backend   | Connected successfully
iot-backend   | Performing system checks...
iot-backend   |
iot-backend   | System check identified no issues (0 silenced).
iot-backend   |
iot-backend   | Traceback (most recent call last):
iot-backend   |   File "/usr/local/lib/python3.10/site-packages/django/db/backends/base/base.py", line 219, in ensure_connection
iot-backend   |     self.connect()
iot-backend   |   File "/usr/local/lib/python3.10/site-packages/django/utils/asyncio.py", line 33, in inner
iot-backend   |     return func(*args, **kwargs)
iot-backend   |   File "/usr/local/lib/python3.10/site-packages/django/db/backends/base/base.py", line 200, in connect
iot-backend   |     self.connection = self.get_new_connection(conn_params)
iot-backend   |   File "/usr/local/lib/python3.10/site-packages/django/utils/asyncio.py", line 33, in inner
iot-backend   |     return func(*args, **kwargs)
iot-backend   |   File "/usr/local/lib/python3.10/site-packages/django/db/backends/mysql/base.py", line 234, in get_new_connection
iot-backend   |     connection = Database.connect(**conn_params)
iot-backend   |   File "/usr/local/lib/python3.10/site-packages/MySQLdb/__init__.py", line 121, in Connect
iot-backend   |     return Connection(*args, **kwargs)
iot-backend   |   File "/usr/local/lib/python3.10/site-packages/MySQLdb/connections.py", line 193, in __init__
iot-backend   |     super().__init__(*args, **kwargs2)
iot-backend   | MySQLdb.OperationalError: (2002, "Can't connect to MySQL server on 'iot-mysql' (115)")
iot-backend   |
iot-backend   | The above exception was the direct cause of the following exception:
iot-backend   |
iot-backend   |
iot-backend   | Traceback (most recent call last):
iot-backend   |   File "/usr/src/app/manage.py", line 21, in <module>
iot-backend   |     main()
iot-backend   |   File "/usr/src/app/manage.py", line 17, in main
iot-backend   |     execute_from_command_line(sys.argv)
iot-backend   |   File "/usr/local/lib/python3.10/site-packages/django/core/management/__init__.py", line 419, in execute_from_command_l
ine
iot-backend   |     utility.execute()
iot-backend   |   File "/usr/local/lib/python3.10/site-packages/django/core/management/__init__.py", line 413, in execute
iot-backend   |     self.fetch_command(subcommand).run_from_argv(self.argv)
iot-backend   |   File "/usr/local/lib/python3.10/site-packages/django/core/management/base.py", line 354, in run_from_argv
iot-backend   |     self.execute(*args, **cmd_options)
iot-backend   |   File "/usr/local/lib/python3.10/site-packages/django/core/management/commands/runserver.py", line 61, in execute
```

此时请查看后端的容器id，使用docker start启动容器。

```
liliyang@red-queen Iot-manager % docker ps -a
CONTAINER ID   IMAGE            COMMAND                   CREATED          STATUS                          PORTS
                                                                                                                 NAMES
551dd94786ef   iotfrontend:1.0    "/docker-entrypoint.…"   21 seconds ago   Up 19 seconds                   0.0.0.0:8080->80/tcp
                                                                                                               iot-frontend
4c5a441f5c46   iotmysql:8.0       "docker-entrypoint.s…"   21 seconds ago   Up 19 seconds                   3306/tcp, 33060/tcp
                                                                                                               iot-mysql
92648912db3e   iotbackend:1.0     "python manage.py ru…"   19 minutes ago   Exited (1) 14 seconds ago
                                                                                                               iot-backend
1cecd1530924   iotemqx:1.0        "/usr/bin/docker-ent…"   19 minutes ago   Up 19 seconds                   4370/tcp, 0.0.0.0:1883->1883/tcp,
 0.0.0.0:8083-8084->8083-8084/tcp, 5369/tcp, 0.0.0.0:8883->8883/tcp, 0.0.0.0:18083->18083/tcp, 11883/tcp   iot-emqx
e2029f9f79a0   oslab:2023         "/bin/bash"               3 months ago     Exited (130) 3 weeks ago
                                                                                                                 cranky_germain
liliyang@red-queen Iot-manager % docker start 92
92
```

然后访问localhost:8080即可访问服务。登陆测试账号来进行测试：账号 3210105647@zju.edu.cn 密码: zyz030918

模拟物联网设备

物联网设备的模拟使用mqttx，mqttx的安装包在/software中准备好了。

在测试账号中准备好的设备如下，模拟某个设备时，请设置clientID为对应的设备id，订阅主题response/iot/[id]。

```
[
    {
        "id": "aaa138876",
        "name": "小米智能摄像机"
    },
    {
        "id": "aaa138877",
        "name": "米家吸顶灯"
    },
    {
        "id": "aaa138878",
        "name": "电视大师"
    },
    {
        "id": "aaa138879",
        "name": "温湿度计"
    },
    {
        "id": "aaa138880",
        "name": "HomePod",
    },
    {
        "id": "aaa138881",
        "name": "路由器"
    },
    {
        "id": "aaa138882",
        "name": "新风空调"
    },
    {
        "id": "aaa138883",
```

```
        "name": "中央空调"
    }
]
```

物联网设备发送信息时，如果发送告警信息，请按照此格式发送：

```
  "type": "warning",
  "device_id": "对应的设备id",
  "text":"消息内容"
}
```

物联网设备发送信息时，如果发送普通信息，请按照此格式发送：

```

  "type": "normal",
  "device_id": "对应的设备id",
  "text":"消息内容"
}
```

物联网设备发送信息时，如果发送位置信息，请按照此格式发送：

```
{
  "type": "location",
  "device_id":"对应的id",
  "latitude": 30.16796008920801,
  "longitude": 120.14870495239258
}
```