

New Kids On The Blog

CPSC-476 Blog Microservice

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The Setup

1) Virtual Environment Setup

Python 3 is packaged with a virtual environment. Should be good so that we all have the same dependencies.

From the project directory, run the following commands:

a) On *nix environment:

Using [Tuffix \(https://github.com/kevinwortman/tuffix\)](https://github.com/kevinwortman/tuffix)? You'll also need this: `sudo apt-get install python3-venv`

```
python3 -m venv venv
```

b) On Windows:

```
py -3 -m venv venv
```

2) Start the virtual environment:

```
. venv/bin/activate
```

3) Then install dependencies with:

```
pip3 install -r requirements.txt
```

As a developer, to update dependency file:

```
pip3 freeze > requirements.txt
```

4) Additionally, you'll have to install foreman:

```
sudo apt install ruby-foreman
```

5) Nginx needs to be installed for load balancing support:

```
sudo apt install nginx nginx-extras
```

6) Create a cache folder for Nginx to store auth cache files:

```
sudo mkdir -p /var/cache/nginx
```

7) Delete default port 80 file

```
sudo rm /etc/nginx/sites-enabled/default
```

8) Copy blog file from project to your Nginx sites-available directory. Create a symlink to the sites-enabled and restart Nginx service:

```
sudo cp blog /etc/nginx/sites-available<br />
sudo ln -s /etc/nginx/sites-available/blog /etc/nginx/sites-enabled/blog<br />
sudo service nginx restart
```

9) Finally, the database must be initialized. From the top-level directory run the following command:

```
foreman run init-db
```

To Run

All microservices can be started in a formation using the following command

```
foreman start -m users=3,articles=3,tags=3,comments=3,rss=3
```

Networking

Service	Port
Articles	:500n
Tags	:510n
Comments	:520n
Users	:530n
RSS	:540n

n indicates the individual instance of the microservice running in a formation. For three instances of the Users service, the instances should be running on ports 5300-5302.

API Documentation

API documentation is available on our [Postman page](https://documenter.getpostman.com/view/262836/S11PpFTY)
(<https://documenter.getpostman.com/view/262836/S11PpFTY>)

To Test

1) Initialize the database with test data

```
foreman run init-data
```

2) Run the tests

```
py.test
```

This will execute all tests in the tests directory in alphabetical order and has been tested to work with the default testing database.

Siege

Number of transactions is higher with cache implementation, allowing for more connections to come through since the server does less work returning data.

To Run

```
siege --concurrent=25 --time=1m --header="Authorization: testuser"  
localhost/rss/feed
```

Without Cache

Transactions: 1003 hits
Availability: 100.00 %
Elapsed time: 59.61 secs
Data transferred: 3.56 MB
Response time: 1.47 secs
Transaction rate: 16.83 trans/sec
Throughput: 0.06 MB/sec
Concurrency: 24.68
Successful transactions: 1003
Failed transactions: 0
Longest transaction: 2.13
Shortest transaction: 1.04

With Cache

Transactions: 1404 hits
Availability: 100.00 %
Elapsed time: 59.29 secs
Data transferred: 5.71 MB
Response time: 1.04 secs
Transaction rate: 23.68 trans/sec
Throughput: 0.10 MB/sec
Concurrency: 24.69
Successful transactions: 1404
Failed transactions: 0
Longest transaction: 3.53
Shortest transaction: 0.17