

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 Postman

For testing API's of the application we use postman. The author Hyams and Pilko (2022) explains in detail how to use postman for api testing. To use Postman for sending HTTP requests and checking the response follow the steps:

- Open the Postman app, In the "Enter request URL" field, enter the URL of the API you want to test.
- Select the HTTP method (GET, POST, PUT, etc.) that you want to use for the request.
- If necessary, enter any headers or parameters for the request in the appropriate fields.
- Click the "Send" button to send the request to the API.
- The API response will be displayed in the "Response" section of Postman. You can check the status code, response headers, and response body to see if the API is working as expected.

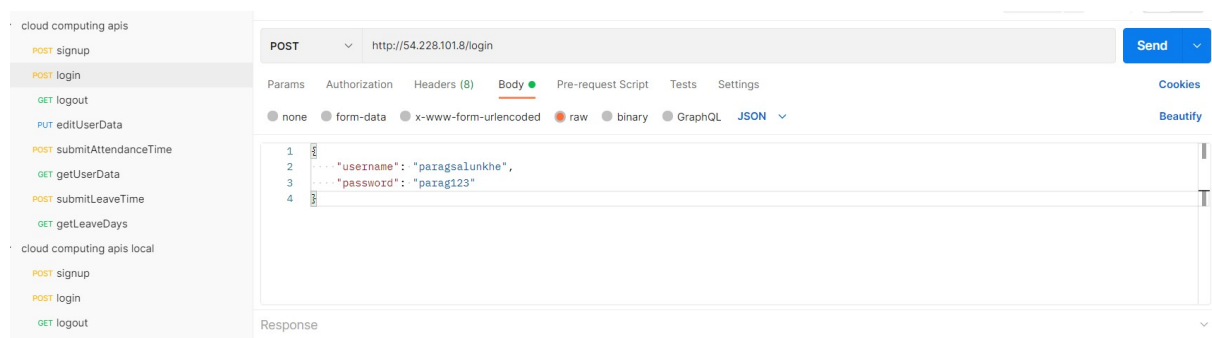


Figure 1: Example of Postman interface

In the figure 1 we see an example of how Postman works.

2 Locust

Locust should be installed. Author Pradeep and Sharma (2019) explains about locust and how to run tests using locust we need python file script which define all the actions to perform.

- To install Locust use the command 1, to run test using locust file use 2nd command where locust file is the name of the locust file :

```
pip install locustio
locust -f 'locustfile.py'
```

- After running 2nd command, a web interface will be launched in your default web browser. This interface allows you to specify the number of users and the rate at which they will generate requests, and start, stop, and monitor the test.
- To start the test, enter the desired number of users and the rate at which they will generate requests, and click the "Start swarming" button.
- The test will begin, and you can monitor its progress using the web interface. This will display information such as the number of users, the request rate, and the response times for each request.
- When the test is complete, you can stop it by clicking the "Stop" button in the web interface. This will generate a report showing the results of the test, including any errors or failures that occurred.

In the figure 2 we see the interface where developer can insert number of users and spawn rate and include the url of the application.

3 Docker

We are pushing images from Docker to EKS cluster. Before that we have to deploy images to docker. To deploy images from your local machine to Docker Hub, you will first need to have Docker installed on your machine. Then, you will need to have a Docker Hub account, Once you have these things set up, you can push your local Docker images to Docker Hub using the following steps:

- Log in to Docker Hub on your local machine using the docker login command. You will need to provide your Docker Hub username and password.
- Tag the local Docker image that you want to push to Docker Hub. You can do this using the docker tag command. The general syntax for this command is docker tag 'source-image' 'target-image', where source-image is the name of the local image that you want to push, and target-image is the name that you want to give the image on Docker Hub.
- Push the local image to Docker Hub using the docker push command. The general syntax for this command is docker push 'image-name', where 'image-name' is the name of the image that you want to push to Docker Hub.

In our case, 5 images which are salary management, data management, apigateway, attendance and usermanagement

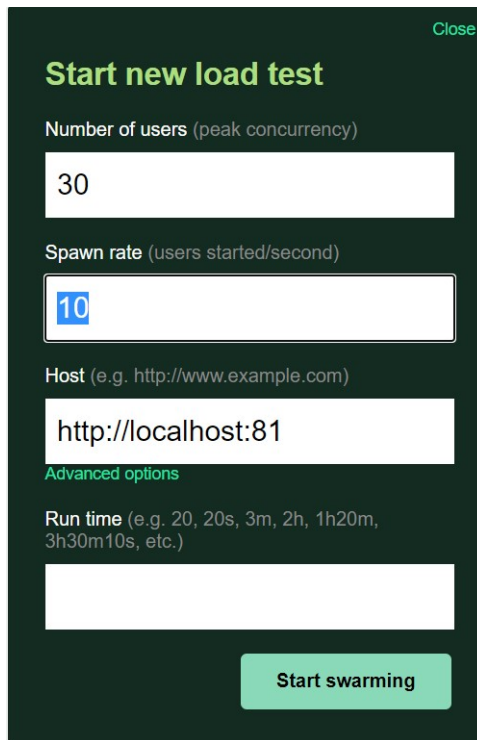


Figure 2: Example of Locust interface

parag2608 / salarymanagement Contains: Image Last pushed: 10 days ago	Not Scanned	☆ 0	↓ 6	Public
parag2608 / datamanagement Contains: Image Last pushed: 10 days ago	Not Scanned	☆ 0	↓ 2	Public
parag2608 / usermanagement Contains: Image Last pushed: 10 days ago	Not Scanned	☆ 0	↓ 2	Public
parag2608 / attendance Contains: Image Last pushed: 10 days ago	Not Scanned	☆ 0	↓ 2	Public
parag2608 / apigateway Contains: Image Last pushed: 10 days ago	Not Scanned	☆ 0	↓ 3	Public

Figure 3: Images in DockerHub

```
# Log in to Docker Hub
docker login

# Tag the local image
docker tag my-image my-repository/my-image

# Push the image to Docker Hub
docker push my-repository/my-image
```

From the figure 3 we can see the images are pushed to Docker Hub. These images will be pushed to EKS cluster and each service will have its own pod which will be scaled automatically depending on the traffic.

4 Configuring ec2 instance

For deploying Nodejs application in ec2

- Connect to your EC2 instance using SSH.
- Update the package manager on your EC2 instance by running the following command:

```
sudo yum update
```

- Install Node.js and npm by running the following command:

```
sudo yum install -y nodejs
```

- To verify that Node.js and npm have been installed correctly, run the following commands:

```
To check the version of npm: npm -v
```

```
To check the version of Node.js: node -v
```

These commands should print the version numbers of npm and Node.js, respectively. If you see any errors or messages indicating that the commands are not found, then the installation was not successful and you may need to troubleshoot the issue.

References

- Hyams, R. and Pilko, T. (2022). “you could use the api!”: A crash course in working with the alma apis using postman, *Code4Lib Journal* (54).
- Pradeep, S. and Sharma, Y. K. (2019). A pragmatic evaluation of stress and performance testing technologies for web based applications, *2019 Amity International Conference on Artificial Intelligence (AICAI)*, IEEE, pp. 399–403.