THESIS STATUS REPORT

WEEK 52 (2020) – 01 (2021)

DONE

I accomplished to automate the single steps of the Docker image deployment to Kubernetes and the automatic deployment of the load testing tool locust. It is now possible to load test a given microservice, with an API route that has no or one integer argument as an input. I also managed to get data from the Prometheus API and save it as a panda data frame and a CSV file. From locust, I get metrics about the response time of the microservice during the synthetic load. The current metrics that I collect from Prometheus are CPU usage, CPU share, memory usage and memory share. I created an overview of the sandbox functionality (see figure 1).

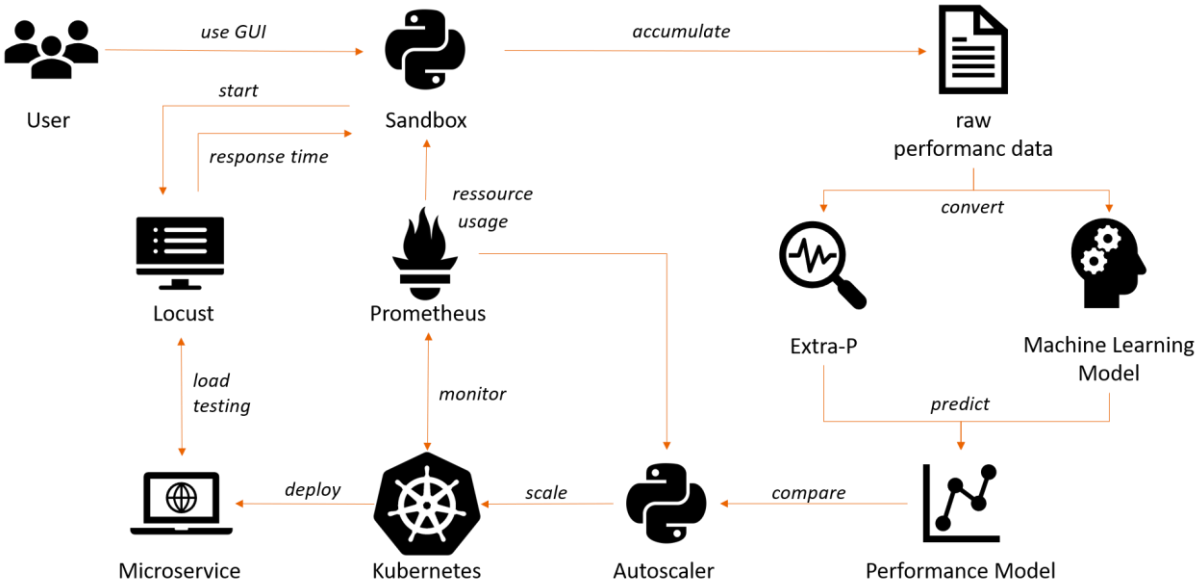

Figure 1: sandbox functionality overview

I found out that I need a different program than locust to collect network metrics of every pod while real-world usage because locust only does that while load testing. Therefore researched and I am still researching and testing different tools such as *linkerd*, *istio* and *consul*.

UPDATE FROM SYNC MEETING (07.01.2021)

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NEXT STEPS

1. Connect the single steps of the synthetic load testing
2. Format the Data for machine learning and extra-p usage
3. Develop and implement the machine learning model
4. Implement extra-p