Group Number: 6

Project: Service quality awareness for migration of workloads

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What have I accomplished since the last Daily Standup?

I tried to increase my understanding of different migration techniques like hot & cold migration, pre-copy and post-copy migrations, and hybrid migration in containers and virtual machines by reading through some research papers. Factors like page dirty rate, network bandwidth, migration downtime, total migration time, high availability application, and high-performance applications affect the quality of service during migration. I tried to create a Virtual Machine in a free cloud, to get an understanding of the existing metrics which are being monitored in the cloud. I also found some related work done in the domain of predicting metrics for performing live migration. There are existing regression models that predict various performance metrics during a migration. Also, there exist models which can identify the optimal migration algorithm to be chosen based on performance metrics.

What will I accomplish until the next Daily Standup?

I will also look into the various studies which are being conducted in the field of predicting whether a migration of VM or Container take place or not. I will look further into the related work that has been done in this domain and will conceptualize a framework that would include some metrics and some basic model that would classify if a service should be migrated or not. To do so, I will set up a small application like the one that is used in developing e-commerce websites, which is a high-availability system. By the decided metrics and the current workload on the VM, we will then try to predict if migration should take place or not with the help of a regression model.

Do I anticipate any obstacles and can the team help me with them?

As such there seem to be no obstacles, but I can foresee that there may be some challenges while developing a conceptual framework and getting it to working too. Right now, we are in the ideation phase and research phase. However, we have chosen a few performance metrics that are more relevant to this domain already. My next step is to browse through other predictive models, maybe selecting the optimum model for our use case might be a challenge, which I will discuss with my teammates to make a consolidated decision.