Two-weekly Report

Group number: **Group 6**
Project: **3**
Student: **Minh Trang Nguyen**
Matricalation Number: **1306981**
Email: **minh.nguyen5@stud.fra-uas.de**

If the last few weeks I have focused on finding out what types of migrations we have, the last 2 weeks I have focused on different types of migrating VMs. After reviewing several papers, I realised that there are 2 primary types of live VM migrations, they are pre-copy and post-copy migrations.

Beside figure out how is the process of these two types, I have read papers, that analyse these two types and compare them with each other. There are two types with sufficient downtime to be considered live migration, and both have advantages and disadvantages depending on how they're done. Some consideration points that should be evaluated to decide which migration type to chose are:

- Workload characteristics: The choice between pre-copy and post-copy migration can be influenced by the type of workload running in the VM and the rate of memory changes.
- Network conditions: Available bandwidth and latency can affect the efficiency of both migration approaches.
- Migration goals: The specific objectives of the migration, such as minimising downtime or minimising overtime migration time, will also play a role in choosing the appropriate approach.

Since the very first target of our group is trying to migrate an office service, I assume that an office service is a memory intensive application because it may contain important information that should be available when the user needs it to work. If the data could not be retrieved correctly after the migration, it will be a problem. I have found a paper that suggests a solution to overcome the limitations of using one of the two types of VM migration mentioned above. The solutions they propose are: **Least Recently Used Reordering** and **XOR-Based Zero Run-Length Encoding** [1].

The tasks for the following weeks should be to work out how to implement this in a specific use case.

As the members of our group are working individually to build the theoretical base, there are no real barriers. An obstacle (for me personally) might be the search for quality and suitable papers for the work.

References

[1] B. H. Aidan Shribman, "Pre-copy and post-copy vm live migration for memory intensive applications", 2013.