

ABSTRACT

Relating to the availability of services (high availability), activities such as restarting an engine for hardware maintenance thereby stopping the service application is a matter that is prohibited in this day and age. Live migration reduce the problem by allowing administrators to migrate virtual machine with few interruptions [16]. Obviously, factors like the migration link bandwidth and the dirty page rate have a strong impact on the migration time and downtime. In particular, the migration process can be impaired when the page write rate is considerably higher than network transfer bandwidth as, under these conditions, it is possible that the iterative pre-copy stage never finishes, and the live migration never succeeds. [14].

To overcome these problems, there are some solutions that can be done, including by increasing the capacity of the network bandwidth, and set the maximum value of the specified downtime. But when the downtime set to a high value, the system will experience a long downtime corresponding specified downtime value. This case will have a negative impact on the process of migration and the availability of services. This research will be modified live migration with adaptive downtime algorithms in order to do the live migration under conditions of high dirty pages, with minimum downtime value.

The results of this test is when in default condition live migration can not run when the level of dirty pages is greater than the network bandwidth. When the server do a video streaming with 19 Mb file size and 4:12 minutes duration, live migration can only be done with extended downtime for 2 seconds with the obtained result of downtime approaching the extended set value. After modification algorithm, live migration can be performed even video streaming is ongoing, with the results of downtime is 1.67 seconds at 512 MB RAM and at 2048 MB RAM.

Keywords: Virtual Machine, Live migration, Adaptive Downtime, Downtime, Migration time.