AN APPROACH FOR LOAD BALANCING IN CLOUD USING HYBRID OPTIMIZATION ALGORITHM

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CHAPTER 7 : CONCLUSION AND FUTURE WORK

7.1 Conclusion

The introduced load adjusting calculation utilizing hybrid algorithm based on Elephant Herding Optimizer and Grey Wolf optimizer in a distributed computing framework utilizing two pitch factors, named Task Pitch Factor and Virtual machine Pitch Factor. For starting burden adjusting, the tasks doled out to the over-burden VM are allocated to under-stacked virtual machines. Here, the proposed load adjusting calculation adjusts limit and loads for the reallocation. In view of Task Pitch Factor and Virtual machine Pitch Factor, the undertakings are reallocated from virtual machines utilizing the proposed hybrid algorithm. The proposed hybrid algorithm is created by coordinating Elephant Herding Optimizer and Grey Wolf Optimizer calculation utilizing another wellness work detailed by load of virtual machine, relocation cost,virtual machine's load, virtual machine's limit, and makespan. The proposed Hybrid algorithm is broke down dependent on load and makespan. The presentation of proposed algorithm is contrasted and the current procedures, as C-22, F-23,Elephant Herding Optimizer[21], Grey Wolf Optimizer[20] in which the proposed Hybrid algorithm accomplishes least burden and least makespan with values 0.0221 and 814264ns, individually.

7.2 Future Work

The main focus of this research is to design and implement a load balancing technique that would rather improve the efficiency of the distributed computing system. Here, load balancing is performed to remove the tasks from over-loaded VMs and allocate them to under loaded VMs without affecting the system performance. Based on this concept, our research dealt with the Elephant Herd Grey Wolf Optimizer (EHGWO) procedure for stabilize the load in the cloud based on the cost and load factors. The extension of the research is on the merging of the self-adaptive principle in the EHGWO algorithm with the inclusion of the

energy and resource utilization factors for efficient load balancing in the cloud. Accordingly, a self-adaptive Elephant Herd optimization-based Grey Wolf Optimizer (self-adaptive EHGWO) will be newly developed algorithm to perform the load balancing. Initially, the energy, resource utilization, capacity and loads of the virtual machine will be found based on the number of tasks already executed, then, the balance factor of the cloud system will be checked. When the load is not found balanced, the volume with load will be checked to make the choice whether load balancing can be done or not. In the other case, find the tasks to be removed by checking two constraints, like load of the physical machines, load of virtual machines, cost of migrating task, and resource utilization. Then, the removed tasks will be added in other VMs by optimally finding the VMs for the task execution. The optimal finding of VMs for executing of the removed task will be found out using the proposed self-adaptive EHGWO, which will be designed by combining the self-adaptive characteristics in the hybridization of Elephant Herding Optimization and Grey Wolf Optimizer. The implementation of the proposed approach will be done in JAVA with Cloudsim tool. The efficiency of the proposed technique for load balancing will be evaluated with different cloud set up for makespan, load, resource utilization rate, and energy, and the results attained will be contrast with the current works.