

The HPAC technique works in the following ways:

- 1) The Main controller waits for a request from the client side. Once it gets a request it reads the load that the client is demanding from the system and stores it in a temporary variable.
- 2) Once the input is taken, it looks for the existing load value with respect to that node in the pheromone table and looks for the least value in the table which is large enough to be allocated to the client and virtually allocates that memory to the client.
- 3) In the next step, the main controller sets the threshold value for the nodes so that their load be balanced.
- 4) After setting the threshold, it looks for the node with the load value crossing the threshold value and immediately signals the load balancer that the values on the pheromone have been changed. It also sends the node no. of the node whose value has crossed the threshold value.
- 5) The final step involves the functionality of the load balancer which operates on the Ant Colony Load Balancing algorithm as discussed earlier

Following flowchart gives a better understanding of the model:

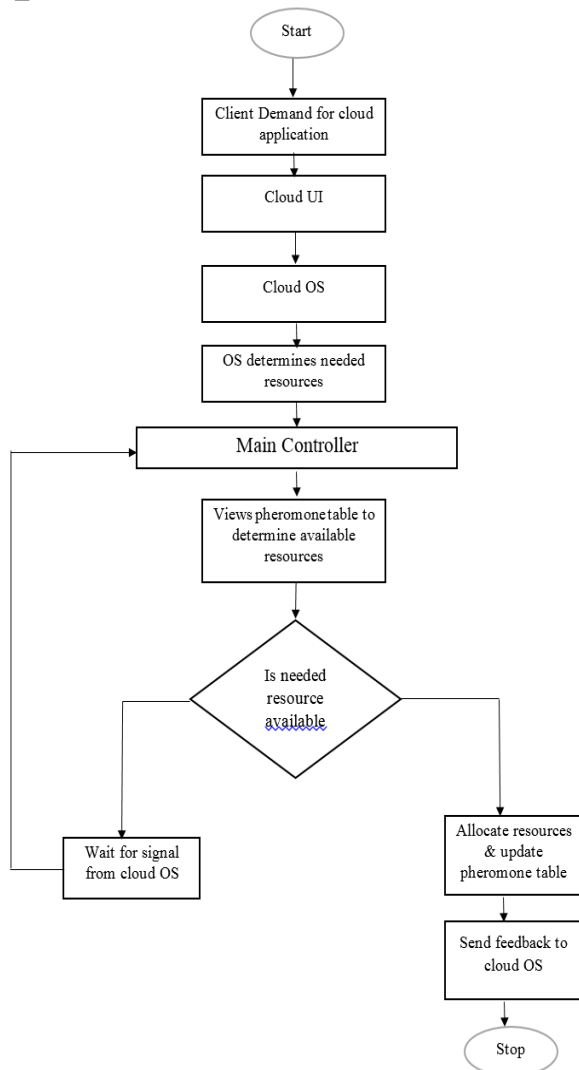


Figure 5: Flowchart of HPAC

5. Conclusion

Load balancing is one of the main challenges in cloud computing. The load balancing techniques distribute the load across the given number of nodes thereby making the computational tasks faster and more efficient. And we may conclude that we can use a particular algorithm according to our requirement/need. This is a modified approach of ant colony optimization that has been applied from the perspective of cloud or grid network systems with the main aim of load balancing of nodes. Therefore, our proposed algorithm for load balancing in cloud computing plays a very important role in future. There is a huge scope of improvement in this area. We have discussed on ACO algorithm that can be applied to clouds for improving the efficiency, resource utilization and different other issues.

To sum up, we can conclude that the High Pace Ant Colony (HPAC) technique will prove to be an efficient algorithm and will improve the performance of the cloud computing environment by balancing the load in an effective way and thereby standing out in the improvement of the various parameters that determine the performance of the cloud computing environment like: resource utilization, throughput, performance increase, fault tolerance, scalability, etc.

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