

CHAPTER 6

Conclusion and Future Work

6.1 Conclusion

Trust plays an essential role in providing reliable services to cloud customers and offering services to trustworthy customers in a cloud computing environment. Trust only decides the reputation for the services that are used among the cloud users. In this thesis, the PT model is proposed for the purpose of computing the trust value of a cloud resource on the basis of various QoS parameters, namely availability, reliability, turnaround efficiency, throughput and global feedback. The simulation result of the Performance based Trust model with the existing models proves that the PT model outperforms other models. The research contribution of the second work is used for the estimation of the trust value of the resources using the fuzzy system. The proposed model (FT model) uses the fuzzy based trust evaluator engine which contains triangular membership function and the center of gravity method for defuzzification to get the crisp output and the cloud broker uses the modified fuzzy TOPSIS method to find the trust value of a resource. The final trust value is computed from the mean of the trust values from fuzzy based trust evaluator and broker's trust evaluator. The experiment result shows that FT model performance is better than the QoS and FIFO models. Task scheduling has been considered as the most acute problem in cloud computing. In the third work, a novel TFOA is implemented for scheduling the tasks on the most trustworthy resources. Analytical Hierarchy Process (AHP) is used for identifying the priority among the tasks. The proposed TFOA outperforms the existing algorithms such as RR, PSO. This research work has used the cloudsim simulator for implementation of developed concepts. The performance analysis is done on makespan, turnaround time and resource utilization with existing algorithms and it is shown that our TFOA gives better outputs in terms of reducing the makespan, turnaround time and maximizing the resource utilization.

6.2 Future Work

This research work may be extended to the enhancement of the model proposed in computing the trust value of a cloud resource using QoS metrics that include interoperability, portability, honesty and compliance. It would be more exciting to observe how the trust model is implemented in a real cloud environment.

In future, Fuzzy based Trust model can be extended with the use of some other service measurement index attributes like usability and agility. An enhanced algorithm should be identified to reduce the number of inference rules that can be generated when the input size is high. A mathematical model could be developed for trust evaluation mechanisms in a cloud environment. Cost optimization criteria can be considered for task scheduling and the proposed TFOA algorithm can be extended for job scheduling in Social Cloud and Social Internet of Things.