

CHAPTER 7

CONCLUSIONS AND FUTURE WORK

7.1 CONCLUSIONS

The proposed globally decentralized and distributed Resource Management System, namely Grid Association has the agents which maintain and access the shared association directory of resource information. It is an effective model to make an association between different jobs and resources autonomously depending upon the speed and cost factors which have triggered a stringent competition in the grid environment.

The model satisfies the requirements of users and providers by offering amicable QoS and balancing the supply and demand pattern currently existing in the grid system. The output of the model shows an overall and considerable improvement over the traditional and Resource Management System. It is observed that overall resource utilization of most of the resources with association get increased as compared to independent resources without Association.

The present Economic Pricing scheme has been introduced in order to cope up with market competition prevailing in the grid environment. The job resource allocation is performed on reasonable pricing scheme on the basis of Best Bid pricing scheme or Demand based pricing scheme in order to achieve economy for both the users and resource providers. The cost of

resources will get decreased almost linearly through number of resources in use do not decline at the same rate due to selection of jobs during peak off time zone as they are cheaper along with Grid Association which has been proposed previously to enhance the average utilization of resources. The result of this model shows that economy can be gained in the view of both the users and resource providers.

The heuristic rule model is proposed to establish an optimal association between the users and providers in order to achieve less compilation time and hence reduction in cost. The algorithms HLS, HSA and HTS are effectively used to optimize the association process of jobs and resources with fitness function. The results of optimistic heuristic rule model show that there is a reduction in makespan of the proposed system over existing system and other LS, SA and TS schemes.

In order to achieve a combined effect of the aforementioned all three model, a comprehensive system IJRM scheduling scheme is proposed for an effective implementation of Job Resource utilization in the grid environment. The Two related metrics of successful execution rate of jobs, failure rate and deadline missing rate are calculated under four different load conditions. The scheme achieves successful job execution rate of 94% to 96% and another metric fairness deviation of 0.15% to 0.05%. All the three metrics of the proposed IJRM scheduling scheme show better result than FCFS, SJF, EDF and FR. The proposed IJRM is better in terms of failure rate, deadline, compilation time and fairness deviation as shown in their results.

7.2 FUTURE WORK

Though the job resource utilization has been achieved efficiently with reasonable pricing scheme in the proposed system, the system has to be still commercialized by using user interface software to efficiently popularize among the various resource users and resource providers in the grid environment. Therefore this work can be further extended to make it fully commercialized by framing a user interface framework for transacting among the different users and resources all over the globe.

This work can be extended to achieve a reduction in the time of the migration phase and hence an increased efficiency by ranking the available resources in the decentralized grid environment. This work can be further extended to provide a complete automation in using Artificial Intelligent techniques.