Week 3 Discussion

Name

School or Institution Name (University at Place or Town, State)

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Computers and information technology infrastructures are playing the role of utilities in business such as electricity. Each and every organization is relying on computing power to solve complex business and real-world problems. With the complexity of calculations involved in problems, the need for computing resources is increasing at an exponential rate (Pooranian, Shojafar, Abawajy, & Abraham, 2015). Although a modern computer is far more powerful than its earlier siblings, there is always a limit to increasing the computing power of a single computer. The solution to the problem is the use of grid computing or networked computing.

 In grid computing, a number of computers are joined to form a pool of resources. Each computing client can access the resources as per the requirement of the task underway. The modern form of grid computing also exists in the form of cloud computing. Large scale organizations are not only using the pooled computing resources, but they are also leasing the computing resources to small and medium-sized businesses such as software as a service and desktop as a service (Khan, Nazir, Khan, Shamshirband, & Chronopoulos, 2017). Although the grid of computers provides enormous processing power and storage capabilities, there are tradeoffs as well.

 Resources are shared in networked computers so, it is difficult to maintain the privacy of data stored on a machine. Another challenge is to maintain the participating nodes from occupying the entire pool of resources. It is considered to be a challenge because there are no standards made for grid computing (Alkhanak, Lee, Rezaei, & Parizi, 2016). Many organizations are using proprietary software to harness the power of grid computing. The security of grid computing relies on encrypting the data. To crack the encryption code, a large amount of computing power is required that can be achieved by grid computing. In this way, grid computing can be against its own existence. However, many projects are using the enormous computing power of the methods to explore the universe such as the SETI project.

Link of the project: <http://setiathome.ssl.berkeley.edu/>

**References**

Alkhanak, E. N., Lee, S. P., Rezaei, R., & Parizi, R. M. (2016). Cost optimization approaches for scientific workflow scheduling in cloud and grid computing: A review, classifications, and open issues. *Journal of Systems and Software*, *113*, 1–26.

Khan, S., Nazir, B., Khan, I. A., Shamshirband, S., & Chronopoulos, A. T. (2017). Load balancing in grid computing: Taxonomy, trends and opportunities. *Journal of Network and Computer Applications*, *88*, 99–111.

Pooranian, Z., Shojafar, M., Abawajy, J. H., & Abraham, A. (2015). An efficient meta-heuristic algorithm for grid computing. *Journal of Combinatorial Optimization*, *30*(3), 413–434.