

Optimization Techniques in Cloud System

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Abstract:

One of the important concept of cloud computing is virtualization that plays a vital role to maximize resource usage among large number of users. To efficiently utilize the resources in a virtualized environment; they need to be over committed. Over commitment is the process of allocating more resources to a virtual machine that is physically present on the host. It is based on the principle that the majority of the Virtual Machines will use only a small percentage of the resources allocated to them at a given time. With the virtualization it becomes possible to use all different resources in shared manner and at same time by different time. There are lots of techniques now days are available to make the cloud system to be work more efficiently. An important problem in this context, deals with finding an optimal virtual machine (VM) placement, minimizing costs while at the same time ensuring good system performance.

Literature:

- [1] P. M. Mell and T. Grance, "Sp 800-145. the nist definition of cloud computing," Gaithersburg, MD, United States, Tech. Rep., 2011.
- [2] R. Boutaba, Q. Zhang, and M. F. Zhani, "Virtual machine migration in cloud computing environments: Benefits, challenges, and approaches," Communication Infrastructures for Cloud Computing, pp. 383–408, 2013.
- [3] F. Xu, F. Liu, H. Jin, and A. V. Vasilakos, "Managing performance overhead of virtual machines in cloud computing: A survey, state of the art, and future directions," Proceedings of the IEEE, vol. 102, no. 1, pp. 11–31, 2014.
- [4] L. Gu, D. Zeng, S. Guo, and B. Ye, "Joint optimization of vm placement and request distribution for electricity cost cut in geo-distributed data centers," in Computing, Networking and Communications (ICNC), 2015 International Conference on. IEEE, 2015, pp. 717–721. [5] K. Church, A. G. Greenberg, and J. R. Hamil.