



INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI
SHORT ABSTRACT OF THESIS

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SHORT ABSTRACT

The work in this thesis addresses the problems of cost-aware resource management in federated data centers. We design a resource management framework for federated cloud data centers along with some efficient techniques for dynamic resource allocation to minimize the operating cost of the cloud provider, along with considering the requirements of various applications. We propose a hierarchical framework for resource management in a federated cloud, catering to the requirements of each provider in the federation. This framework is used in handling all the other problems in our work. We address the problem of cost-aware resource allocation for hosting data-intensive applications in a federated cloud. We also address the problem of cost and delay aware dynamic resource management for hosting modern vehicular applications in a federated cloud. Finally, we address the problem of cost-aware VM migration in federated clouds to maximize the profit of the cloud provider. All the proposed algorithms are evaluated based on the data from practical cloud deployments and under different scenarios. Results show that exploiting federation brings great benefits for the cloud provider and the end-users alike.