A Virtual Cluster Manager using a Hierarchical Management Model for Cloud Infrastructure

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With cloud computing technology, specifically infrastructure as a service (IaaS), it is possible to conveniently deploy a virtual machine on the cloud. There are also a lot of cloud toolkits available to help administrators setup IaaS cloud. However, to deploy a set of virtual machines and configure them to work together as a virtual cluster is still a complicated and tedious task. Most cloud toolkits offer not comprehensive virtual cluster management solution but individual virtual machine management. To address this problem, the author proposes virtual cluster manager, a unified utility for virtual cluster management. This project describes a design and implementation of virtual cluster manager built on top of existing cloud toolkit, OpenNebula, as well as the case study of this utility through the comparison with virtual cluster deployment with traditional methods.