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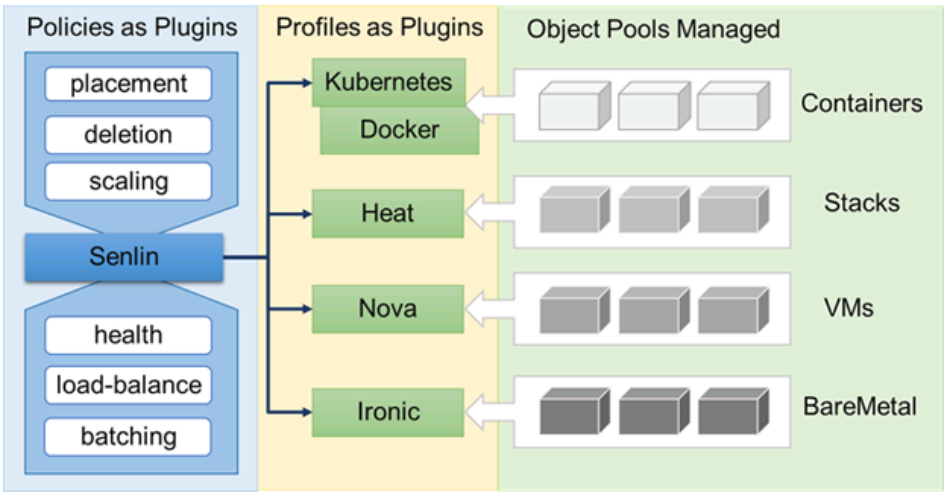
Senlin: Managing Resource Pools in the Cloud

Background

One of the main challenges facing industry and academia today is how to manage resource pools flexibly in the cloud, which is also a fundamental service for more advanced features like elasticity, resiliency, and manageability.

The current abstractions provided by most cloud platforms are mainly focused on a specific layer of the stack, such as bare metals or virtual machines at the cloud infrastructure layer or middleware at the cloud platform layer. In some cases, resource management becomes a problem left for application developers to resolve.



Senlin Open Architecture

Resources

Project website
Senlin Wiki

Code Repositories

Server
Client
Dashboard

Senlin is designed to be a flexible clustering service for managing cloud resource pools. These clusters can be used to orchestrate any type of objects exposed by some clouds. It is designed to work on different cloud services and to enforce diverse policies for cluster management.

The service is extensible in many aspects, such as the clouds to which it can talk, the services with which it can interact, the policies it can enforce and the channels from which it can receive signals.

The Senlin project was initiated in December 2014 by Dr. Qiming Teng, a research scientist at IBM Research – China. Since its inception in the open source community, the Senlin project has gained traction and contributions from many companies and institutions such as NEC, VMware, Intel, Huawei, EMC, 99cloud, Tongji University etc.

During the Liberty cycle (the first 6 months) of the project, IBM Research – China contributed over 95% of the total 150K lines of code, and Senlin's total commits ranked in the top 5% of all projects hosted on the OpenStack community. Senlin is now an official OpenStack project.