

Research on an universal Openstack upgrade solution

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IhepCloud is a multi-user virtualization platform which based on Openstack icehouse and deployed at Nov. 2014. The platform provides multiple types virtual machine, such as test VM, UI and WN, is a part of local computing system. There are 21 physical machines and 120 users on this platform and about 300 virtual machines running on it.

Upgrading IhepCloud from Icehouse to Kilo is difficult, because there is big change from Icehouse to Kilo. Kilo requests SL7 and has difference database structure. Thus we must reinstall OS and adjust auxiliary components such NETDB we developed. The upgrading must ensure the integrity and consistency of user information, quota, security group, operation strategy, network topology and their virtual machines. Finally, the upgrading should consider improvement of the new platform and make it better. The traditional approach is to rebuild the platform based on new Openstack version and users re-launched new VMs and migrates data. Original virtual machines environment will be lost.

We discuss a universal solution which can upgrade multi-user Openstack platform. This is a migration solution from old version platform to new one. Platform information such security group, operation strategy, network configuration and user quota and so on will re-configure on new platform. Some operations, such as virtual machine user changes, need to directly modify the database. Virtual machines from old platform will be migrated to new platform with a short downtime. The solution avoids complex upgrading steps based on old platform and is helpful to re-deploy a new platform with more advanced technologies and even new network topology. This solution is suitable for large-span Openstack version migration. In this paper, we will present the detail how to migrate from Icehouse to Kilo on IhepCloud.

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