OpenStack Cloud Migration: Cloud Migration from VMware to OpenStack

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Executive Summary

Many companies who are planning to move their workloads to OpenStack Cloud consider to migrate virtual workloads to cloud as the first step then as the second step, physical workloads will be moved to cloud. Because most of cloud instances are running on hypervisor like KVM, Xen and VMware, they are thinking that On-premise virtual workloads will be relatively easier to be moved to cloud than physical workloads. This may be true but it will not be easy unless there is automatic migration approach.

Many enterprises are already running VMware virtual machines in their companies and also experienced Physical-to-Virtual (P2V) migration technology when they moved legacy physical servers to VMware. P2V is a fantastic migration tool which makes much easier to migrate physical servers to virtual machines. However, if you try to move VMware to OpenStack cloud by P2V tool, you will fail because P2V migration doesn’t support P2C (Physical-to-Cloud) even if the hypervisor of OpenStack Cloud is VMware.

Should we migrate VMware virtual workloads to OpenStack by manual processes? Answer is No. It will be better to stay in On-Premises environment if you have to migrate manually.

In this whitepaper, we will introduce how to migrate VMware virtual workloads to OpenStack Cloud Instance by automatic migration approach.

What is V2C Cloud Migration?

V2C is the cloud migration technology which migrates virtual workloads to cloud without reinstalling applications on cloud instance by automatic migration approach.

Automatic V2C migration should be able to migrate from virtual workloads to cloud instances by “copy and paste” process.

As cloud computing technologies are rapidly growing and mature, many enterprises consider to move their virtual workloads to cloud as the first step because most of cloud instances are running on hypervisors.
Unfortunately, you cannot use traditional P2V migration tool when you move VMware to OpenStack Cloud.

Why cannot P2V migration tool migrate VMware to OpenStack Cloud? As I already explained in “White Paper: Migrating workloads to OpenStack Private Cloud”, OpenStack Cloud Instance is not just VM but it is Cloud Instance which is managed and controlled by both hypervisor and OpenStack Platform. Due to this, in order to migrate VMware to OpenStack, migration tool should support hypervisor and OpenStack Platform at the same time. We call it as Virtual-to-Cloud (V2C) migration tool.

Considerations for V2C Cloud Migration

What should be considered for cloud migration? There are a few considerations for successful VMware to OpenStack Cloud Migration.

The number one is simple and easy to migrate: Cloud migration should terminate manual migration obstacles. If we have to reinstall applications on cloud instance manually, we should spend lots of migration cost and time. Due to this, many benefits expected from cloud can be lost. VMware to OpenStack Cloud Migration should be simple and easy. By a few clicks, it should be able to be done.

The number two is encryption: Cloud migration is generally processed via WAN. A sensitive company’s data should be protected during cloud migration by encryption.

The number three is direct migration: A sensitive company’s data must be protected. During migration, it should be encrypted as well as be replicated to cloud instance directly without via any internet storage or repository.

Automatic V2C Migration from VMware to OpenStack (ZConverter Cloud Migration)

ZConverter Cloud Migration provides simple and easiest V2C Cloud Migration technology. By a few clicks, you can move VMware to OpenStack Cloud whether Cloud hypervisor is KVM, Xen or VMware. Cloud migration processes are simple: Imaging – Replication – Migration. Below is the migration processes by ZConverter.

- **Step 1** Logon ZConverter Cloud Migration web site (www.zconverter.com)
**Step 2**  Download an agent on source VM

**Step 3**  Create a cloud instance

**Step 4**  Download an agent to cloud instance
• Step 5  Image source VM by a click
• Step 6  Replicate the image to cloud instance
• Step 7  Convert image to cloud Instances

• Step 8  Run a cloud instance

Conclusion

OpenStack is one of the most active and popular open source cloud platforms which is strongly supported by more than 150 global IT companies like HP, IBM, Redhat. In spite OpenStack is open source software, it is one of the fastest growing cloud platforms in the world. Many enterprises are deploying and experiencing openstack based private, public and hybrid cloud.

If large enterprises deployed their own private clouds, next step will be that they migrate from on-premises to private cloud. VMware may be the first workloads to be moved to OpenStack Cloud then physical servers will be the 2nd workloads to be migrated to cloud. Untl now, most of migrations to OpenStack were manually moved because there was no automatic migration tool like V2C conversion. But ZConverter can eliminate this type of headaches and obstacles to migrate from VMware to OpenStack.

This paper has provided an overview of automatic VMware to OpenStack Cloud migration technology. We call it as Virtual-to-Cloud (V2C) cloud migration. ZConverter provides V2C as well as P2C automatic OpenStack migration. Without headaches, ZConverter Cloud Migration helps enterprises who deployed OpenStack Cloud to move their workloads to OpenStack Cloud by a few clicks.

About Us

ISA Technologies, Inc. is one of the world leaders of cloud migration and system image backup software companies. We have been serving enterprises and channel partners for over 10 years.

Enterprises of various industries are experiencing the benefits of ZConverter Cloud Migration and
ZConveter Server Backup software solutions.

We have been serving migration and system backup & recovery software since 2004. We are now providing Physical-to-Cloud (P2C) and Virtual-to-Cloud (V2C) cloud migration for OpenStack and CloudStack. Sooner or Later, Microsoft Azure will be included in our cloud migration compatible list. Next one will be IBM SoftLayer as well as Amazon AWS.

We are headquartered in Seoul, South Korea.