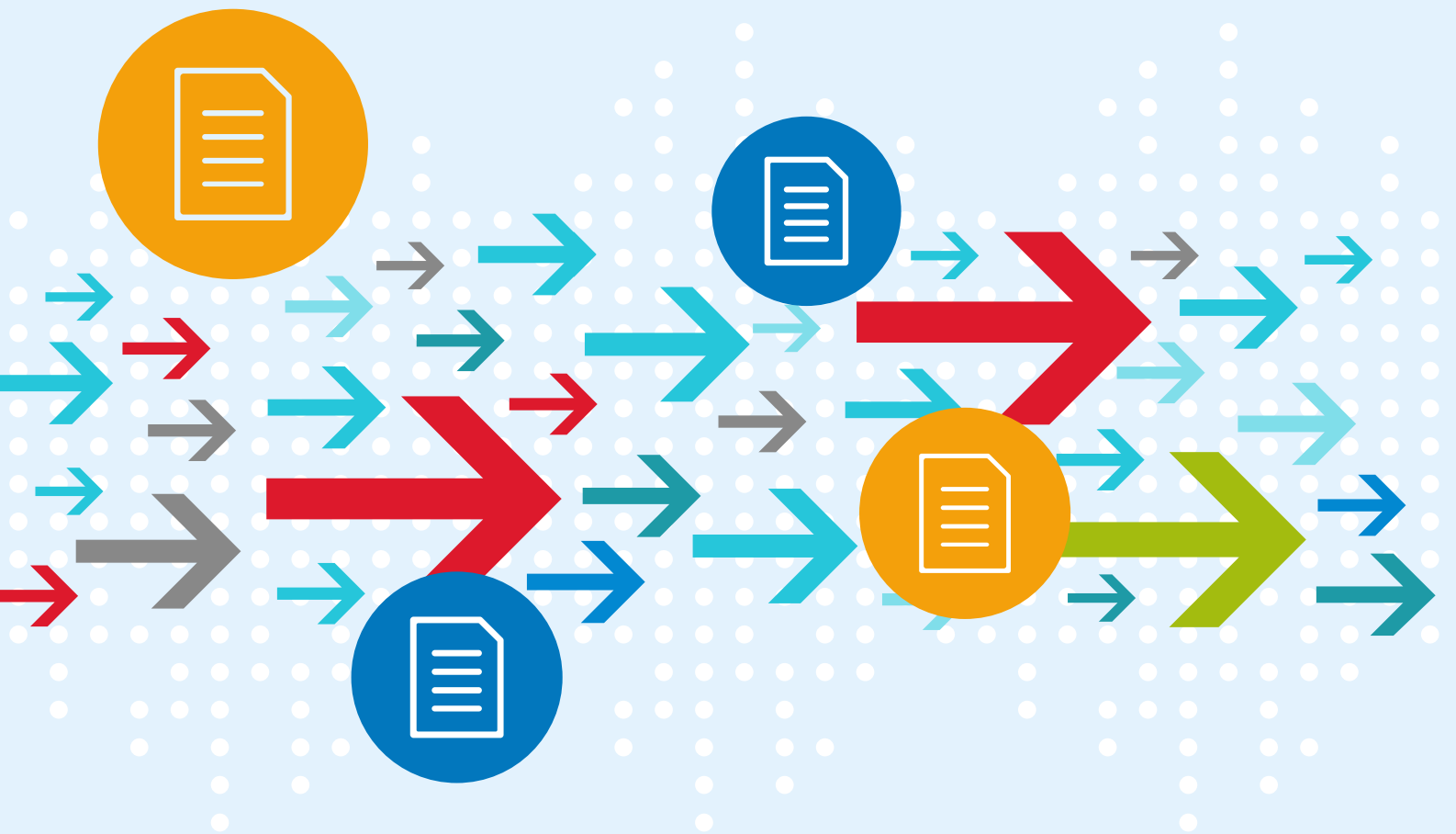




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# Cloud Migration: Migrating workloads to OpenStack Cloud



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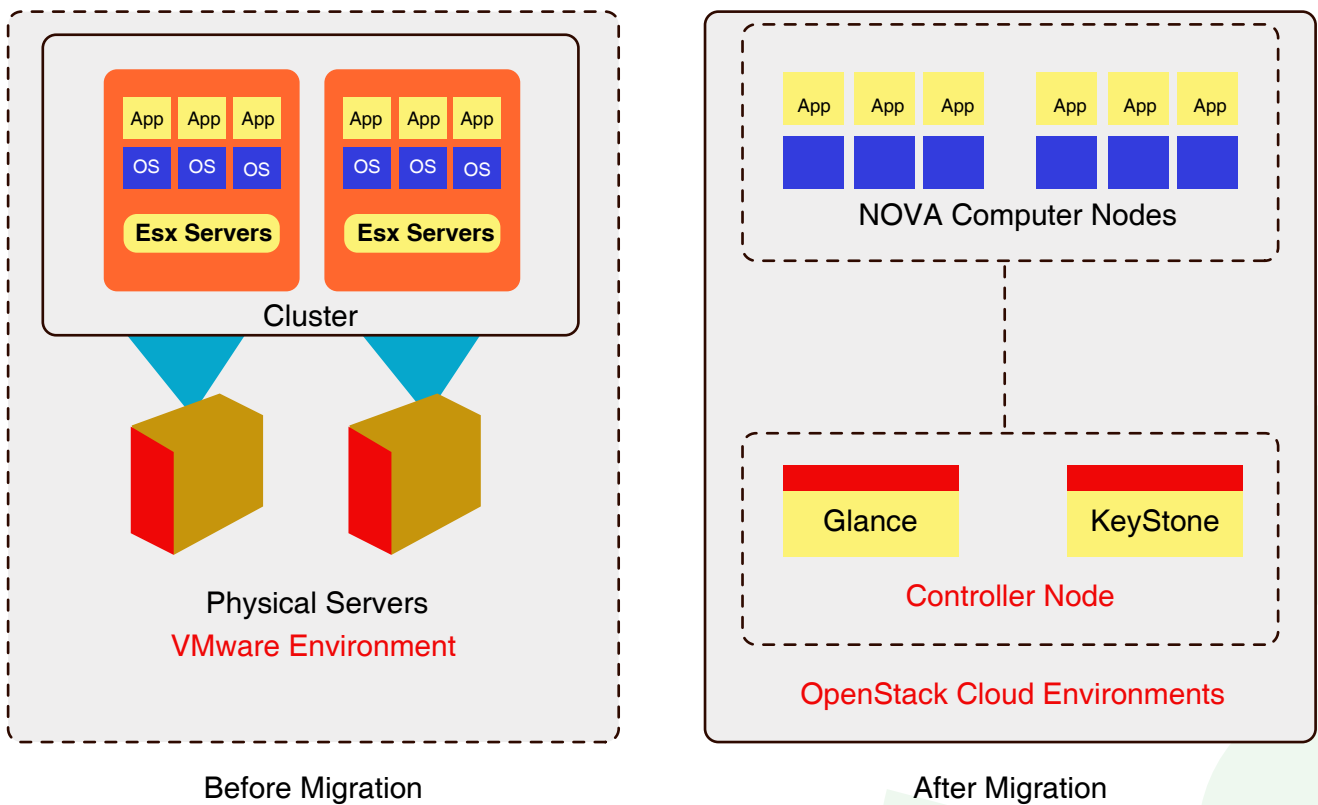
# Executive Summary

For majority of companies, be it small, medium-sized businesses or large, migrating data center workloads to the cloud is rapidly becoming a key priority. However, organizations are continually facing obstacles in terms of complexity of the manual migration processes. In addition, customer infrastructure consists of physical servers with different operating systems and distinct virtualization platforms.

In this white paper, we will look at how we can migrate workloads from one environment to OpenStack environment seamlessly without cloud sprawl by undertaking what are popularly known as phase driven and automation approaches. We are considering VMware as the source environment from where workloads will be migrated to OpenStack environment

# Migration Scenario

In this scenario we will be migrating workloads from VMware environment to OpenStack Environment.



# Use case

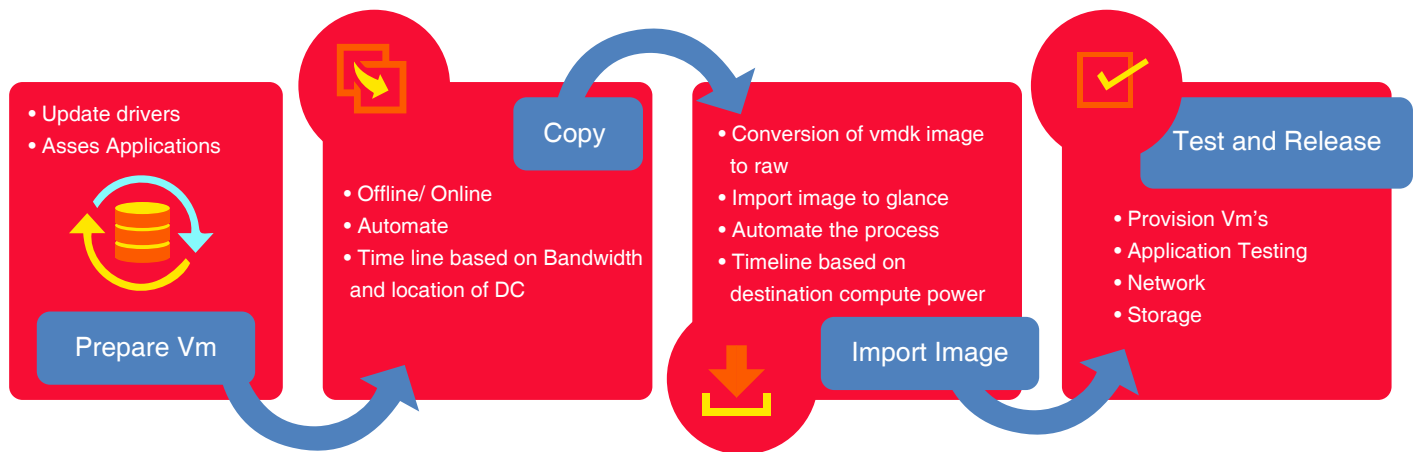
Company A is the world leader in networking which transforms how people connect, communicate and collaborate. They have an internal web application which is hosted on a VMware environment that they intend to migrate to OpenStack Cloud.

# Motivation for Migration

Company A would like to migrate its web application and workloads from VMware environment to OpenStack Cloud mainly for three reasons:

- Better Orchestration and Automation
- To reduce cost and enable 'No lock-in' via Open cloud Platform
- To improve support for native and compatible API

# Migration Plan, Strategy, & Execution Steps



## Cloud Assessment

During the assessment, we will discover and identify simple, low-complexity and complex workloads. Simple and low-complexity workloads will be considered since they have no interdependence to run across cloud platforms. This type of workload can be automated and run in batches and has the competency to migrate workloads at a single time. We will also discover the web applications which need minimal or no- configurations after migration.

## Pre Migration

During the Pre-Migration phase, the identified workloads at the time of cloud assessment will be installed with drivers. Identification of a Windows OS that helps booting the workloads in the OpenStack environment is done.

On the other hand, if workloads are Linux- based, then it can be taken for granted that no driver's installation is required. After installing necessary drivers, workloads will be halted in source environment and respective VMDK file would be copied to destination OpenStack environment through batch process.

## Migration

During the migration phase, necessary environment variables are set in OpenStack. VMDK file will be imported to Glance services through batch process. Below is a sample command that will be used in batch script.

```
root@hc-controller01:~# source keystonerc
root@hc-controller01:~# glance image-create --name win2008-vmware --is-public=True --container-format=bare --disk-format=vmdk --property vmware-disktype="preallocated"<Windows2008-flat.vmdk
```

## Post Migration

During the post migration phase, instances will be launched through batch process using the newly imported images and testing (Functional, load, performance etc.) will be performed to ensure that the systems were performing at expected levels, and exit criteria for each component were met

## Conclusion

The strategy, consideration and methodology discussed in the white paper provide step- by -step approach to enterprises, looking to migrate their VMware workloads to OpenStack private Cloud. By following phase- driven and automation approaches, we will be better able to seamlessly migrate existing workloads from VMware to OpenStack environment and eventually reduce operating expenses, cloud sprawl and achieve substantial savings.

## About the Author



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Ritesh Alur works as Solution Architect for Cloud Technology practice in Happiest Minds Technologies. Ritesh has 8 plus years of IT Experience. He has worked on various public, private cloud solutions and focused on designing highly available, scalable and reliable cloud solutions.

## About Happiest Minds Technologies

Happiest Minds has a sharp focus on enabling Digital Transformation for customers by delivering a Smart, Secure and Connected experience through disruptive technologies: **mobility, big data analytics, security, cloud computing, social computing, M2M/IoT, unified communications, etc.** Enterprises are embracing these technologies to implement Omni-channel strategies, manage structured & unstructured data and make real time decisions based on actionable insights, while ensuring security for data and infrastructure. Happiest Minds also offers high degree of skills, IPs and domain expertise across a set of focused areas that include IT Services, Product Engineering Services, Infrastructure Management, Security, Testing and Consulting.

Headquartered in Bangalore, India, Happiest Minds has operations in the US, UK, Singapore and Australia. It secured a \$52.5 million Series-A funding led by Canaan Partners, Intel Capital and Ashok Soota.

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