SORINT Lab

Migrating VMs from VMware to Red Hat OpenShift Virtualization

VMware VSphere

RH OpenShift Virutalization

Migration Toolkit for Virtualization (MTV)

A Glance

A leading graphical card manufacturer is seeking to migrate several legacy applications, currently running on VMware virtual machines (VMs), to a modern containerized environment on Red Hat OpenShift. The project's objective is to reduce costs associated to VMware licenses and other infrastructure-related aspects, while moving towards a modern, cloud-native technology stack and permitting DevOps practices. Improve scalability, ensure high availability, have a flexible hybrid and multi-cloud environments, but even more importantly, lower dependence on a single vendor!

Brief - Business & Technical Context

VMware environment is stable and running multiple critical applications

OpenShift platform (on-premise or cloud-hosted) is available or planned for deployment

Applications running on VMware are suitable for containerization Java, .NET Core, Node.js, amoung others

Upcoming VMware license renewal activities

This Cloud and modernization initiative is request from the CIO and CTO

Pressure to reduce operational costs and improve delivery speed

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1 Assessment & Planning

- Identify candidate VMs for migration (based on app complexity, OS, dependencies)
- Perform dependency mapping, create migration plans, network mappings and storage mappings
- Determine migration strategy (cold/warm) via Migration Toolkit for Virtualization - MTV

2 Environment Preparation

- Provision or validate OpenShift cluster on-prem
- Set up image registries, storage, CI/CD pipelines

3 Testing & Validation

- Deploy VMs in staging namespace on OpenShift
- Perform functional, performance, and integration tests

4 Data Migration

- Migrate application databases (when required) using tools like CAM (Cluster Application migration) or external DB migration tools

5 Cutover & Go-Live

- Final sync of app/data
- Switch off VMware VM and start it in OpenShift
- Decommission VMware VMs (or repurpose)

Postcondition

- VMs are running on OpenShift Virtualization
- CI/CD pipelines are in place
- Monitoring, logging, and autoscaling are configured
- VMware VMs are no longer required for the migrated apps

The Win

Client was able to reduce the high reliance on expensive virtualization software, improved resource utilization and scaling via Kubernetes, enhanced security through the advancements gained, introduced precise monitoring and governance capabilities. Different teams are now able to move workloads easily across hybrid/multi-cloud.
All while accelerating development and deployment cycles.