FUJITSU Software ServerView
Cloud Load Control V1
Introduction

November 2015
Fujitsu Limited
Product Overview
Challenges and Solution Approaches

Challenges for Enterprise IT

- Constantly growing workload, but reduction in **costs** and **risks** required
- **Flexibility** required to adapt to changes in the business environment
- Encourage **innovation** by enabling low-cost experimentation

Solution approaches

Decouple application from infrastructure
- Focus on where the strategic value is – **the application**
  - Enable application portability
  - Support reliable deployments

Decompose applications
- Decompose for **agility** and **scalability**.
  - Enable easy change and reuse
  - Encourage experimentation: try out alternative implementations of a service

Ensure high grade of automation
- Learn from pioneers to manage complexity by automation.
  - Unlock automation approaches in Cloud Service Data Centers provides for enterprises
How Containers Can Help

- Hermetically sealed, lightweight environment for running applications
  - Move container easily between environments
  - Run multiple isolated containers on a single host
  - Encourages decomposition of application and to run only one process per container[^1]

[^1]: [https://docs.docker.com/engine/articles/dockerfile_best-practices/](https://docs.docker.com/engine/articles/dockerfile_best-practices/)
Containers in Enterprise Environments

- In enterprise environments
  - Lifecycle of large amount of containerized applications needs to be managed
  - High standards regarding availability and operability
  - Efficient use of resources is desired

- Container frameworks, like Docker, offer less support for
  - Ensuring availability: recovery from failures; scaling at peak times
  - Interconnection between containers in multi-node environments
  - Deployment and update of containers in multi-node environments
ServerView Cloud Load Control (CLC)

Enterprise-grade container management which accelerates development and simplifies operations.

- **Distribute** containers over a set of nodes (cluster) and provide automated operations
- Enable **self-service** management of clusters
- **Seamless** integration with OpenStack
Key Features and Benefits
Container Orchestration

- Dispatches containers to **cluster nodes**
  - Improves workload density and better scalability
  - Provides means of container interconnection
- Provides a **high degree** of automation
  - Deployment, scaling, failover, load-balancing, …

**Operations**

**Development**

- Simple, reliable application deployment
- **Framework** to describe distributed, containerized application
- Needs to care less about the infrastructure and focus on the application
Cluster Management

- Streamlined setup of cluster for container orchestration

- **Significantly** reduces time to provision a cluster:
  - Manual provisioning: 1 day\(^1\)
  - With CLC: less than 5 minutes\(^2\)

- **Automated** and tested processes
  - Repeatable and reliable
  - Reduce risk for problems on cluster setup and operation

---

\(^1\) Based on internal evaluations  \(^2\) Depends on performance of underlying system
Integrates **seamlessly** via add-on menu into OpenStack Horizon

Enable OpenStack tenants to “one-click” cluster provisioning

UX Focus: Management of clusters as easy as management of virtual servers
Benefits

- Improve the resource utilization
- Automate systems operations
- Streamline the setup and configuration process

Reduce operational costs

- Encourage move towards an application-centric paradigm and the usage of modern system architectures
- Simplify deployment and making it consistent across environments

Drive agility and time-to-value
Product Information

- System Configuration
- Technical Data and Base Technology
System Configuration

OpenStack Environment

OpenStack System

- Horizon
- CLC GUI Plugin

Uses

Heat

Worker Nodes

Orchestration Agent
Service Proxy

Worker Node 1

Provision and setup nodes

Orchestration Agent

Pod

Container

Worker Node N

Distributed Storage

Master Node

- Auth
- Scheduling Actuator
- Scheduler

APIs
- REST APIs
- Replication Controller

HTTP Traffic

CLI

Cluster Operator

Developer

12
Technical Data and Base Technology

- OpenStack platform
  - Red Hat Enterprise Linux OpenStack Platform 7

- Based technology
  - CLC is based on Kubernetes and enhances it for enterprise usage and operation on OpenStack
  - Kubernetes was initiated by Google and incorporates the experiences of over ten years of running containerized workload at scale
  - Kubernetes is the basis for Google cloud offering “Container Engine”
  - Fujitsu is actively engaged in the Kubernetes community and contributes to the project
shaping tomorrow with you