Introducing Jaguar

- Project for Kubernetes Network
  - Launched (Jul. 23, 2018)
  - First Release (Oct. 10, 2018)
  - [https://gitlab.com/sdnlab/jaguar](https://gitlab.com/sdnlab/jaguar)

- Project of Education
  - PBL (Project Based Learning)
  - OpenDaylight & kubernetes courses
Personal ability
Knowledge reserve
Code style
Requirement analysis
Test design
Engineering realization
Release management

Teamwork
Conceptual abstraction
Effective presentation
Project review
Team collaborative Tools
Project Show
Practice Cloud

Education Service Chain

TOP: Training Orchestration Platform

CMP: Cloud Management Platform

Practice Cloud

Infrastructure
Design Principle

**Simplicity**
- Simple Design, Convention over configuration

**Flexibility**
- Modular(OSGi), Event Driven

**Interface-Oriented**
- Model Driven
- Parnas' Principles - separation of interface and implementation
Simplicity

- Kent Beck’s Four Rules of Simple Design
  - Passes its tests
  - Minimizes duplication
  - Maximizes clarity
  - Has fewer elements

- Convention Over Configuration - Jaguar’s Convention
  - default bridge name – br0
  - default pod’s CIDR – 172.100.0.0/16
  - default IPAM policy
Jaguar’s Module

- watcher
- IPAM
- network
- CNIPlugin
Jaguar’s Interface

- K8S model
- IPAM model
Jaguar Network Design

 Node 1

 POD1
 192.168.2.2/24
 eth0

 POD2
 192.168.1.2/24
 eth0

 Route
 10.0.0.2/24
 eth0

 ovs-br
 VXLAN

 Node 2

 POD1
 192.168.3.2/24
 eth0

 POD2
 192.168.4.2/24
 eth0

 Route
 10.0.0.3/24
 eth0

 ovs-br
 VXLAN
Introduction to First Release - Sky

• Features – Kubernetes’s fundamental requirements
  – all containers can communicate with all other containers without NAT
  – all nodes can communicate with all containers (and vice-versa) without NAT
  – the IP that a container sees itself as is the same IP that others see it as

• Code quantity
  – UT, IT, ST

• Demo
  – Eat your own dog food.
Future Plan

• Next Release
  – Support Kubernetes Service

• Next Next Release
  – Support Network Policies
Getting involved

• Get the Code, Build the Code, Run the Code
• Became a Jaguar Member
• Join the Public Mailing List
• For more details
  https://gitlab.com/sdnlab/jaguar/wikis/home