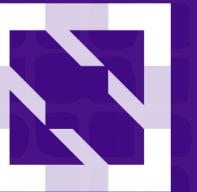




KubeCon

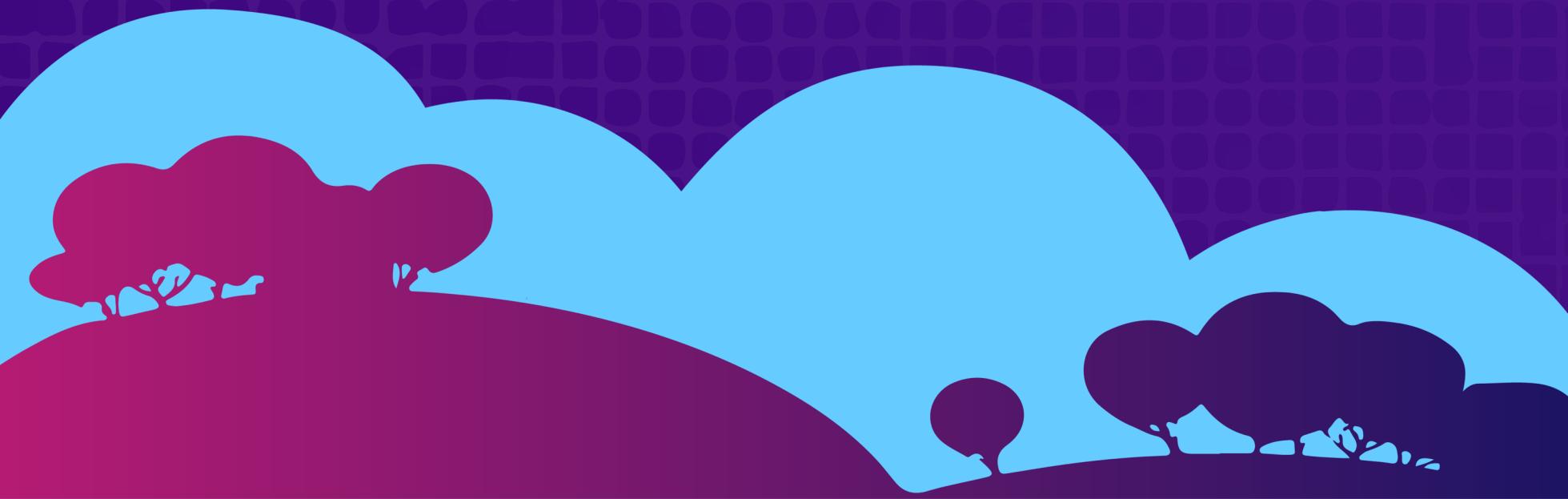


CloudNativeCon



OPEN SOURCE SUMMIT

China 2019





KubeCon



CloudNativeCon



OPEN SOURCE SUMMIT

China 2019

Building Serverless with K8S, Kata Containers and Bare Metal Cloud In Alibaba

Yifei Zhang Senior Enigneer in Alibaba Cloud

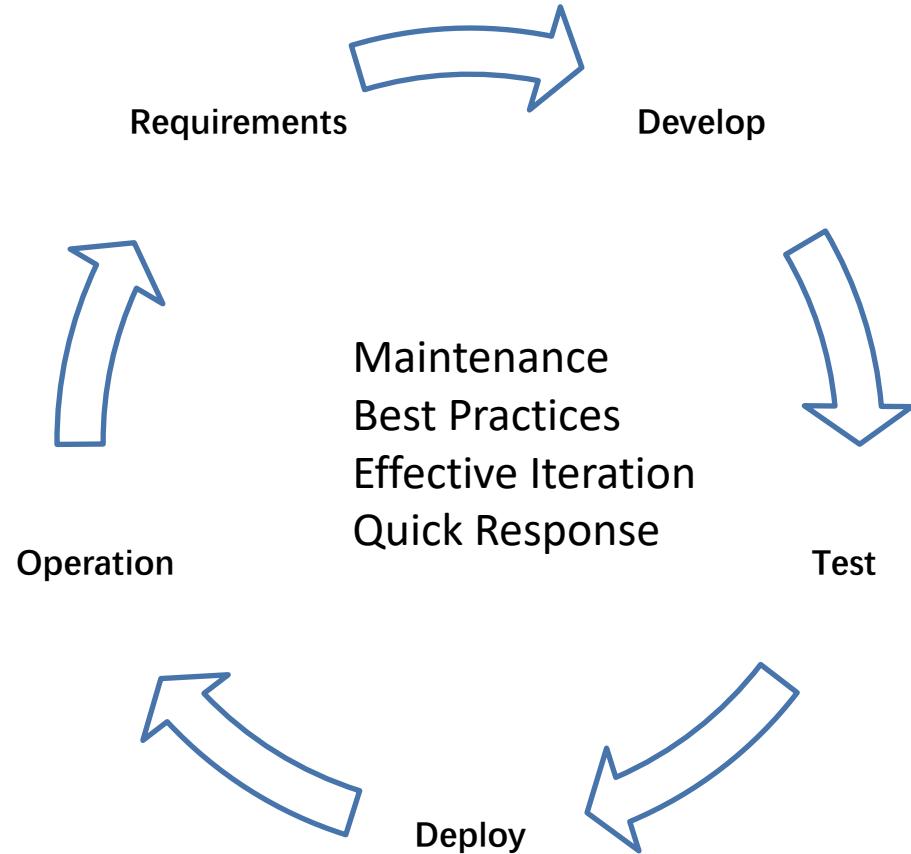
Huamin Tang Engineer II in Alibaba Cloud



Outline

- Serverless Overview
- Serverless Platform Construction
- Kata Containers
- Q&A

Serverless Overview – Status Quo





Reduce the Cost
of Operation and
Maintenance

Reduce the Cost
of Development

Serverless Overview – Definition



KubeCon



CloudNativeCon



OPEN SOURCE SUMMIT

China 2019

Wikipedia :

- Serverless computing is a cloud-computing execution model in which the cloud provider runs the server, and dynamically manages the allocation of machine resources. Pricing is based on the actual amount of resources consumed by an application, rather than on pre-purchased units of capacity.

- Serverless computing can simplify the process of deploying code into production. Scaling, capacity planning and maintenance operations may be hidden from the developer or operator. Serverless code can be used in conjunction with code deployed in traditional styles, such as microservices. Alternatively, applications can be written to be purely serverless and use no provisioned servers at all.



Serverless Overview – Roles



KubeCon



CloudNativeCon



OPEN SOURCE SUMMIT

China 2019

User

- No need to care about the server
- Pay by usage
- Auto scaling
- etc.

Platform

- Provide resource pool services
- Provide on-demand metering and billing services
- Provide auto-scaling services
- Provide secure data surface services
- etc.

Applicability

- Event-driven tasks
- Timed tasks
- Delay-insensitive tasks

Inapplicability

- Start delay-sensitive tasks
- Processing delay-sensitive tasks

Serverless Platform Construction– Chanllenges



KubeCon

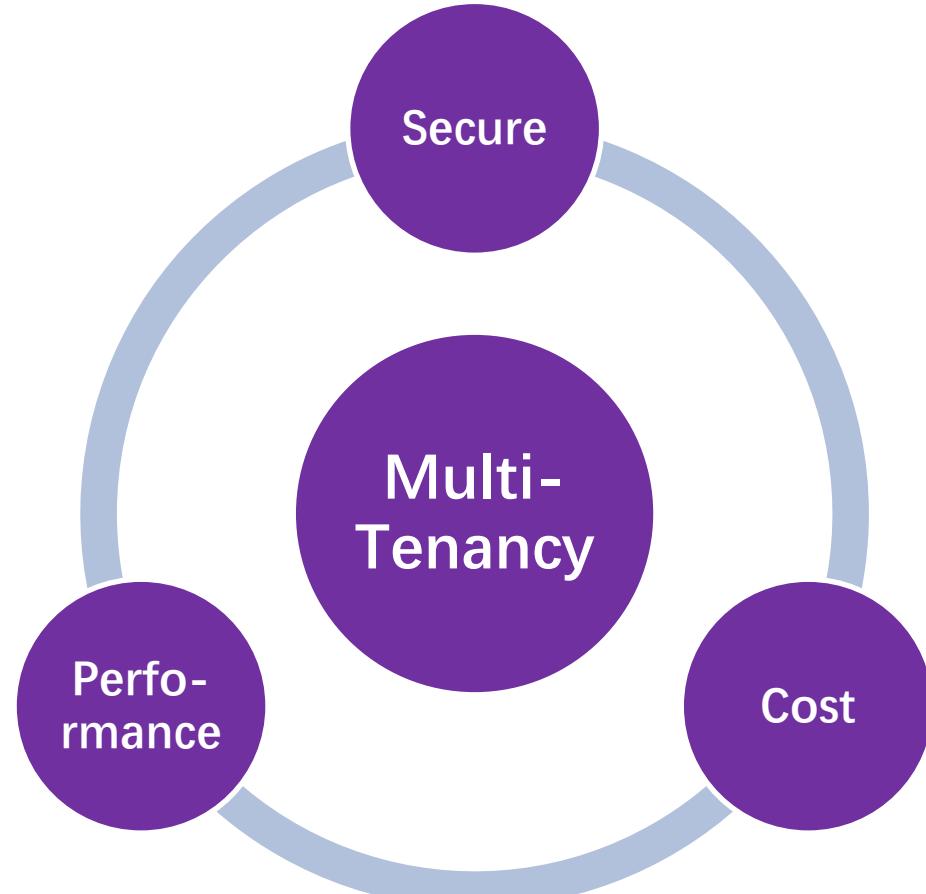


CloudNativeCon



OPEN SOURCE SUMMIT

China 2019



Serverless Platform Construction—Challenges



KubeCon

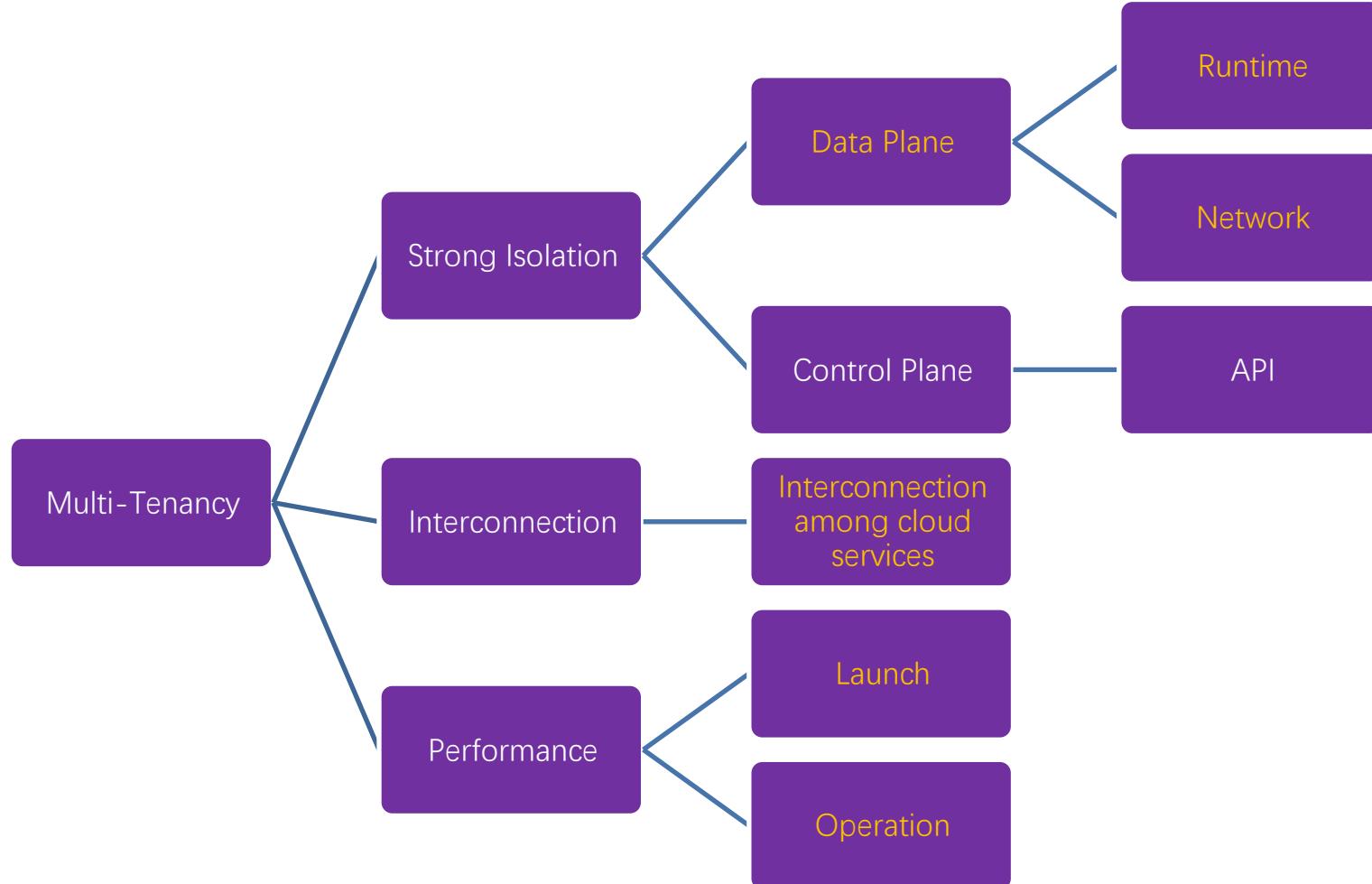


CloudNativeCon



OPEN SOURCE SUMMIT

China 2019



Prombles

- a Operational Performance
- b Strong isolation of network access
Interconnection
- c Strong isolation at runtime
Millisecond level creation

Solutions

- a Elastic Bare Metal Instance
- b VPC Network
- c Secure Containers

Serverless Platform Construction– Solutions



KubeCon

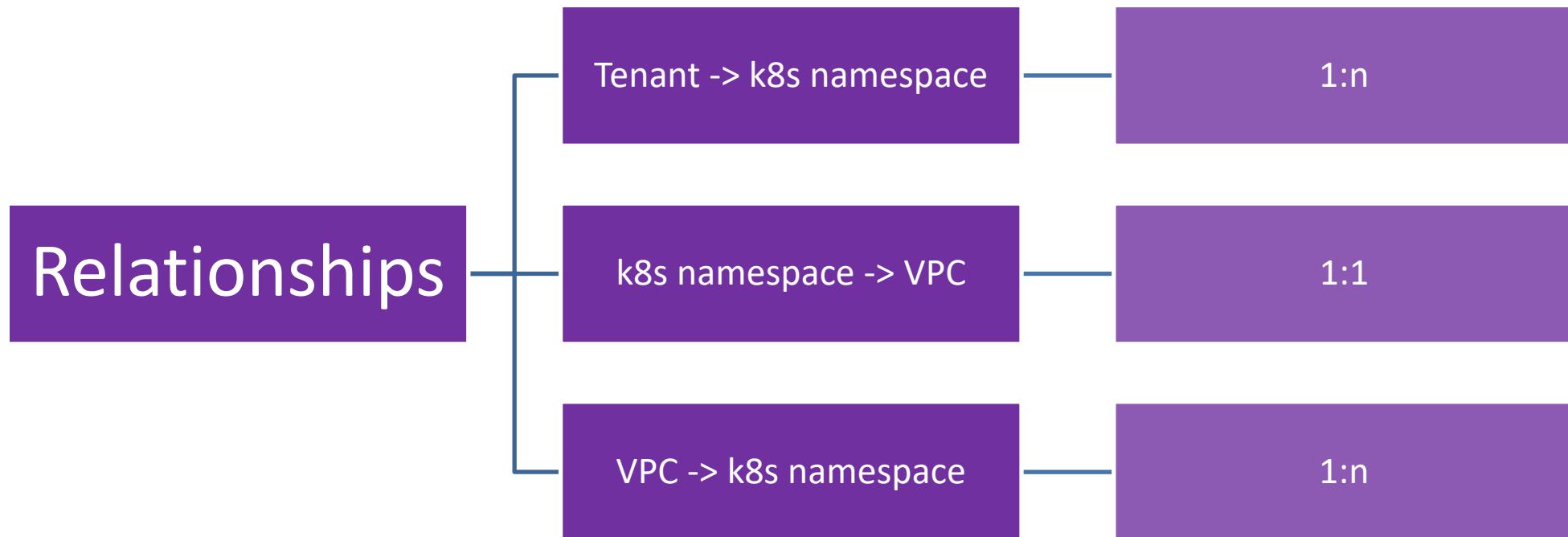


CloudNativeCon

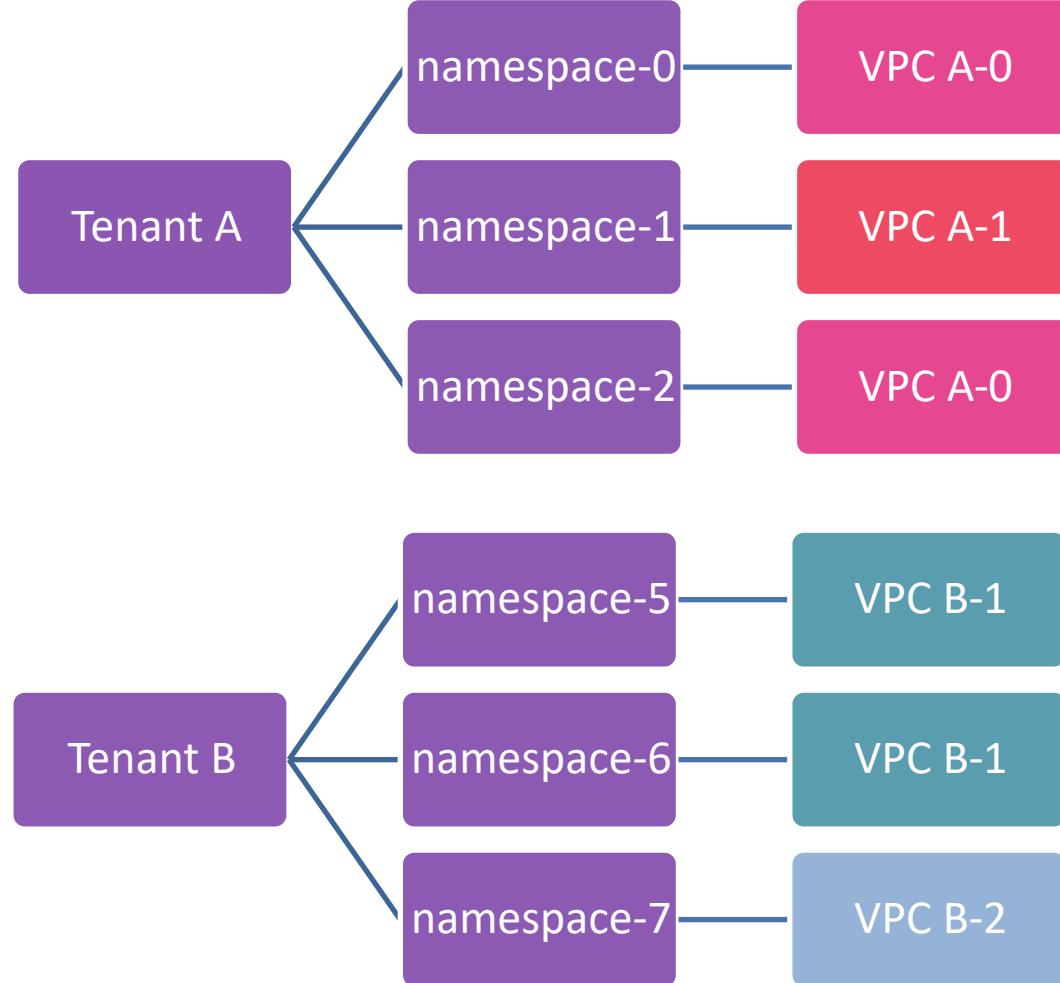


OPEN SOURCE SUMMIT

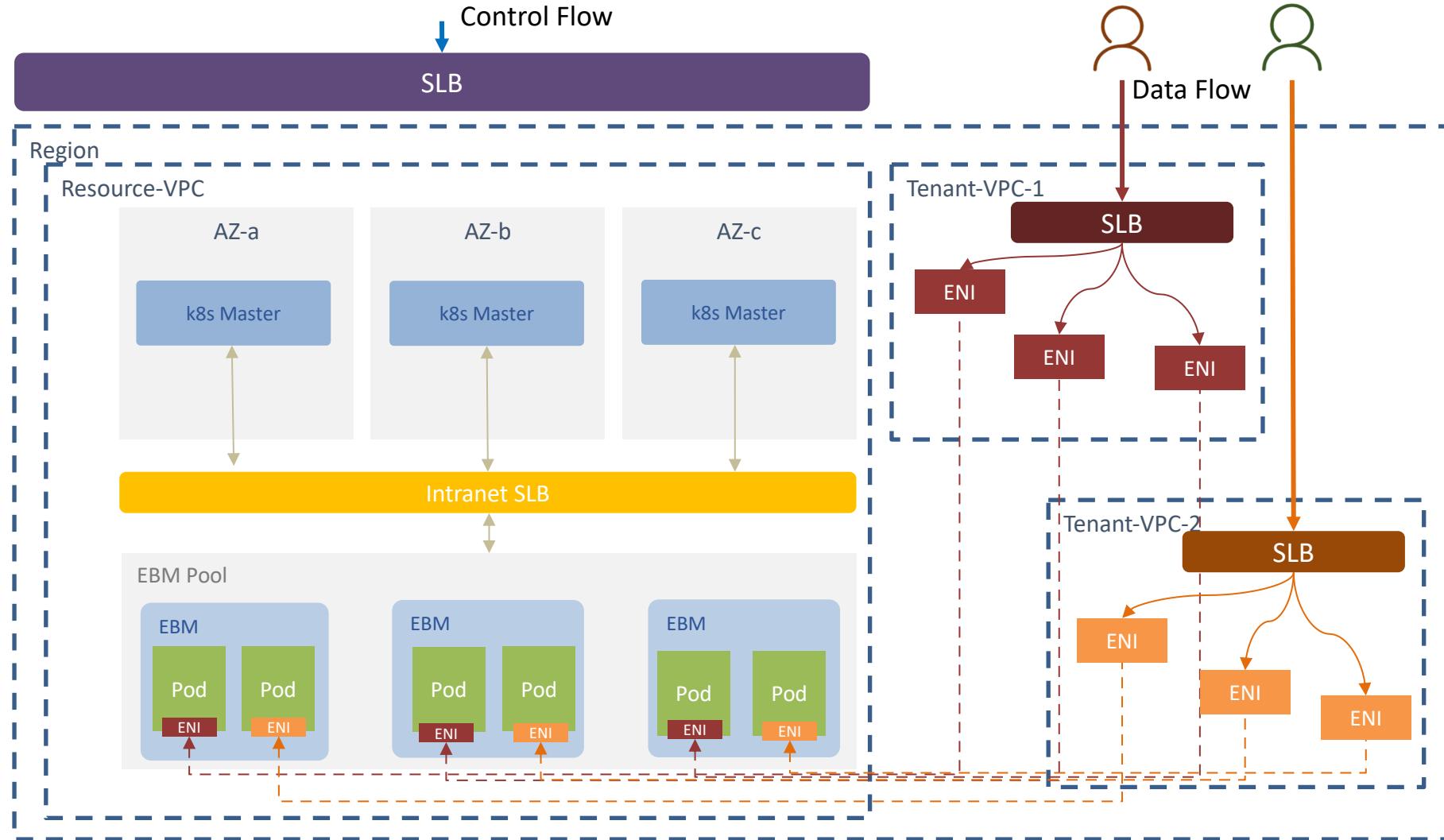
China 2019



Serverless Platform Construction– Solutions



Serverless Platform Construction– Architecture



Kata Containers – Strong Isolation



KubeCon

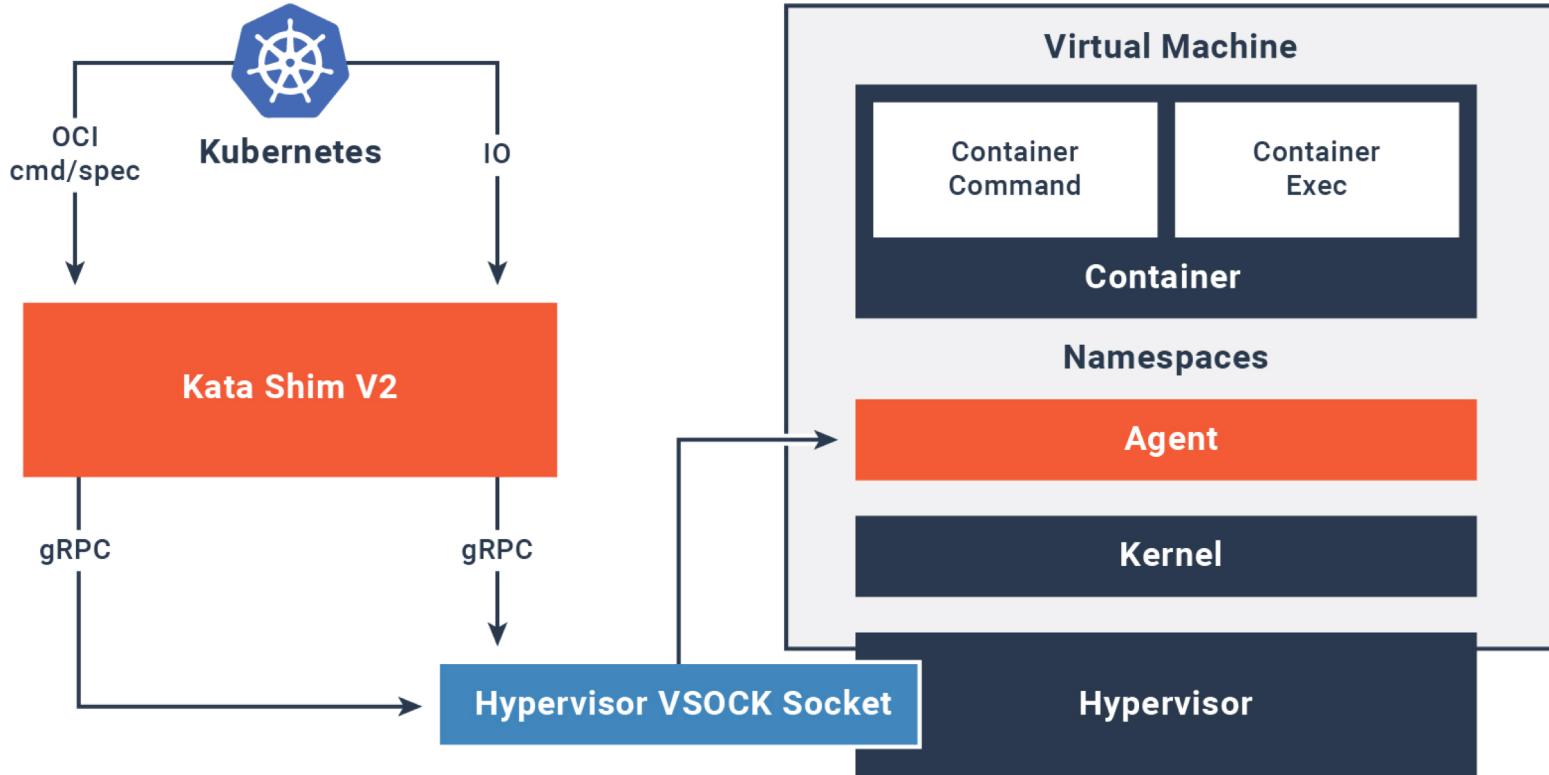
CloudNativeCon

OPEN SOURCE SUMMIT

China 2019



Kata Shim V2



Kata Containers – Technical Architecture



KubeCon

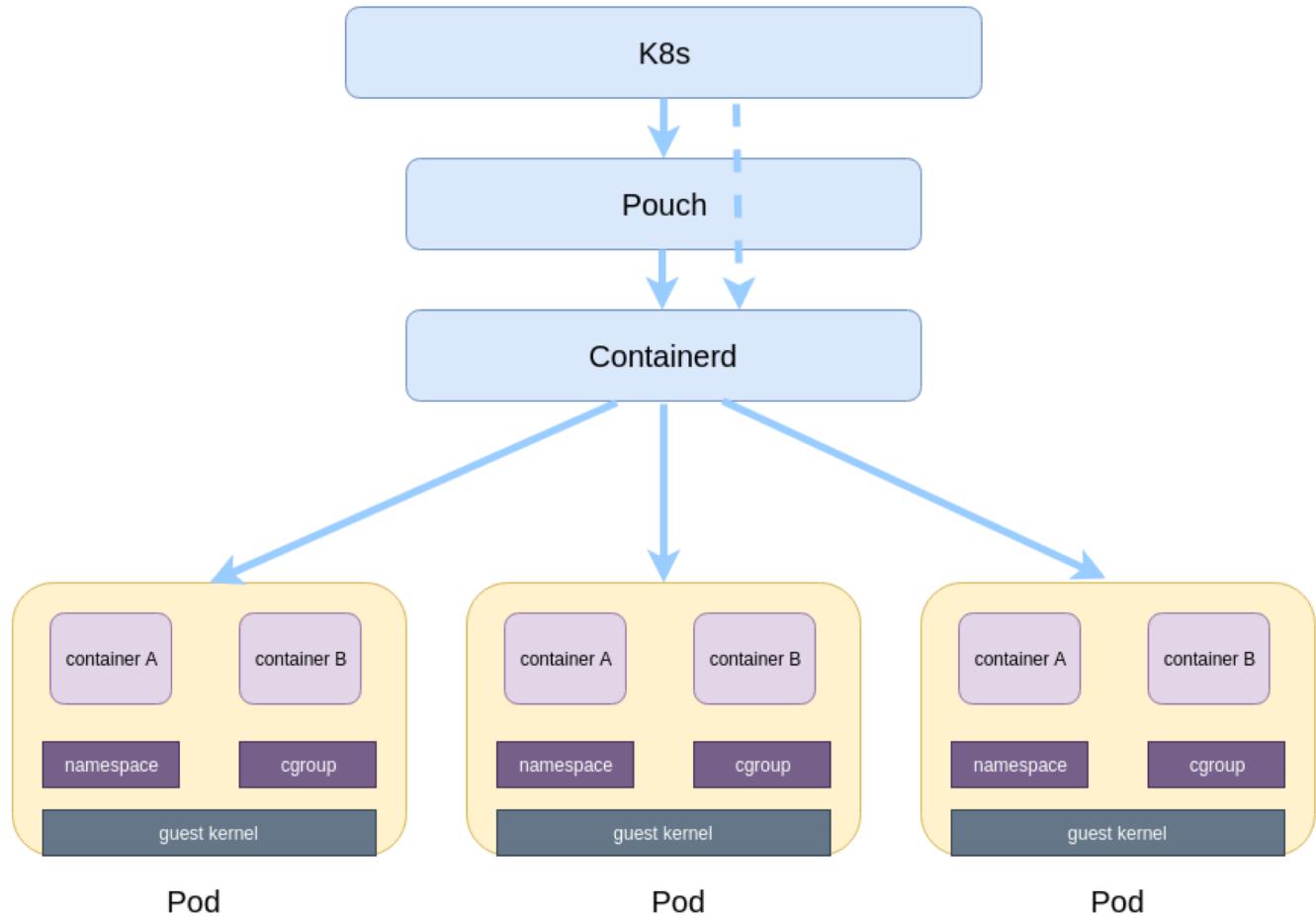


CloudNativeCon

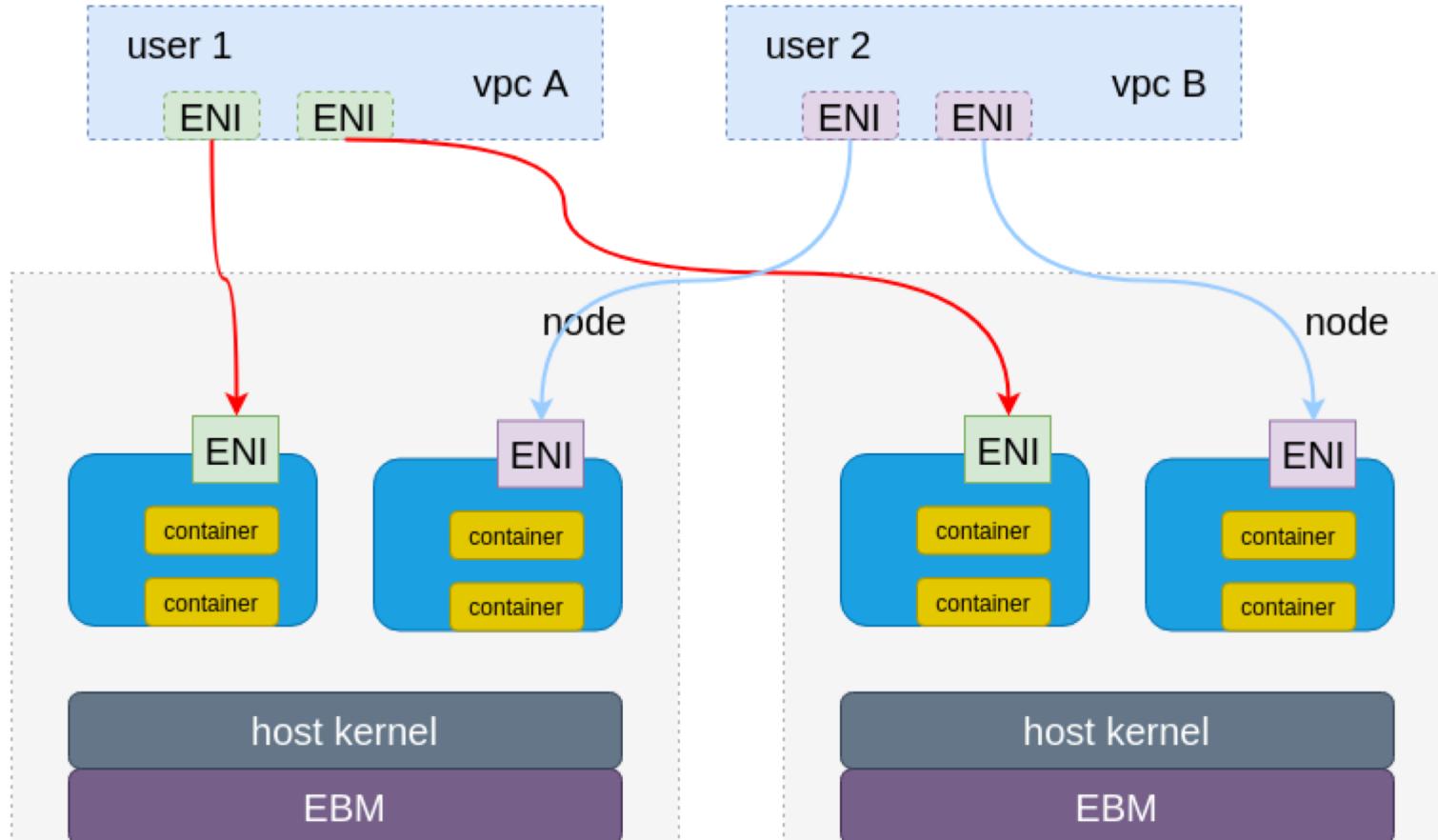


OPEN SOURCE SUMMIT

China 2019



Kata Containers – Network Isolation



Shenlong ENI provides network isolation

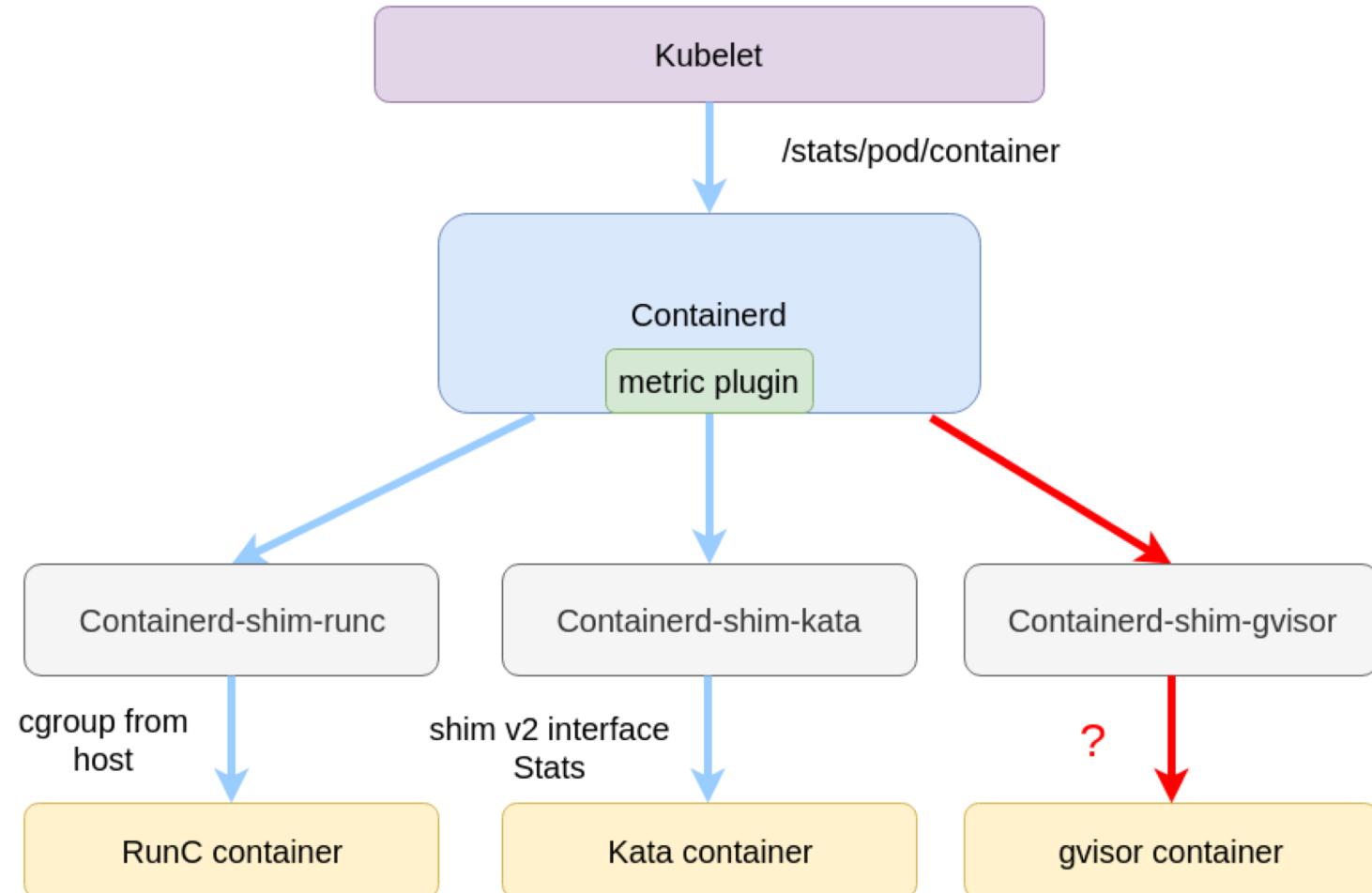
Problem of 9pf

1. Poor IO performance
2. Cause qemu hang

Two way to optimize IO

1. qcow2, good kernel compatibility
2. devicemapper, only stable on 4.19 kernel

Kata Container – Monitoring



Alibaba Cloud Serverless App Engine

Product Intro



EDAS Serverless用户群
446人



扫一扫群二维码，立刻加入该群。

Coming Soon : ACK Secure Containers

End



KubeCon



CloudNativeCon



OPEN SOURCE SUMMIT

China 2019

Thanks