DPDK
DATA PLANE DEVELOPMENT KIT

DPDK as microservices in ZTE Paas

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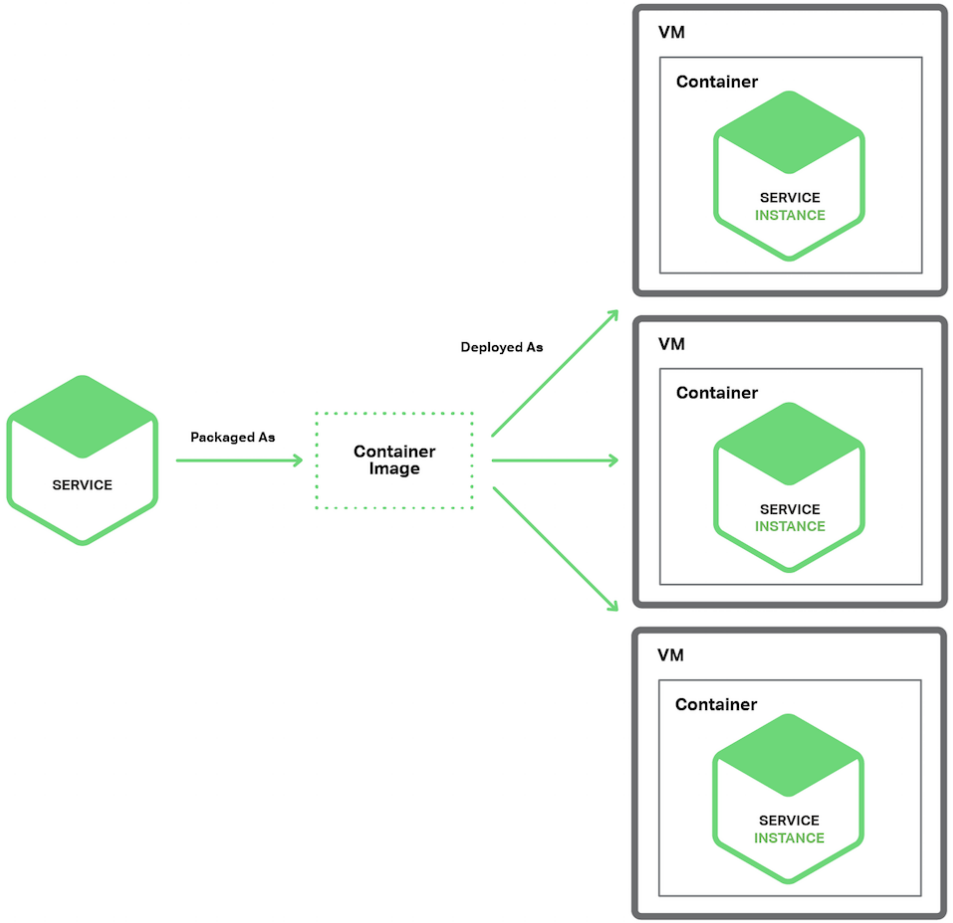
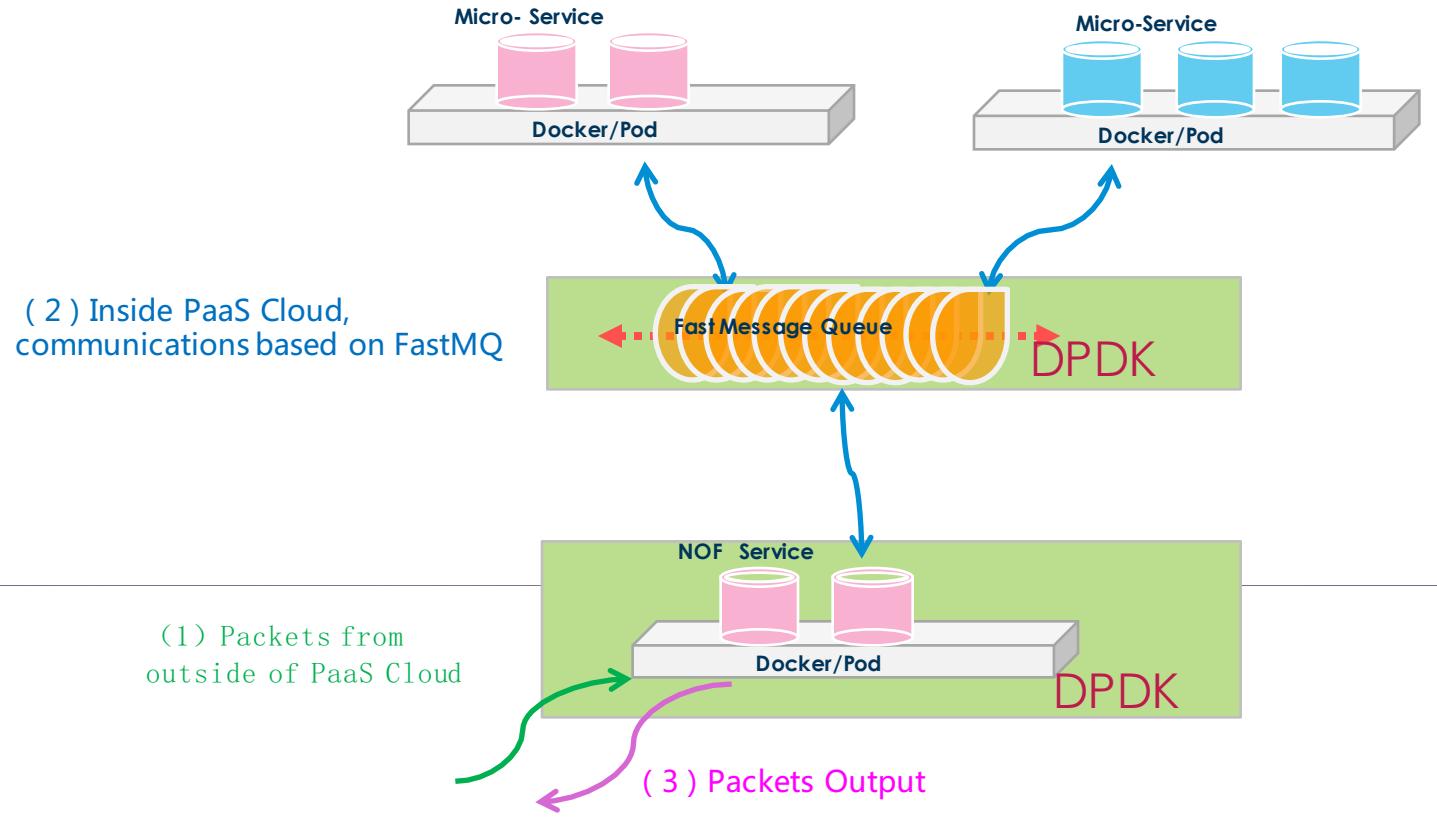
Overview:ZTE Paas

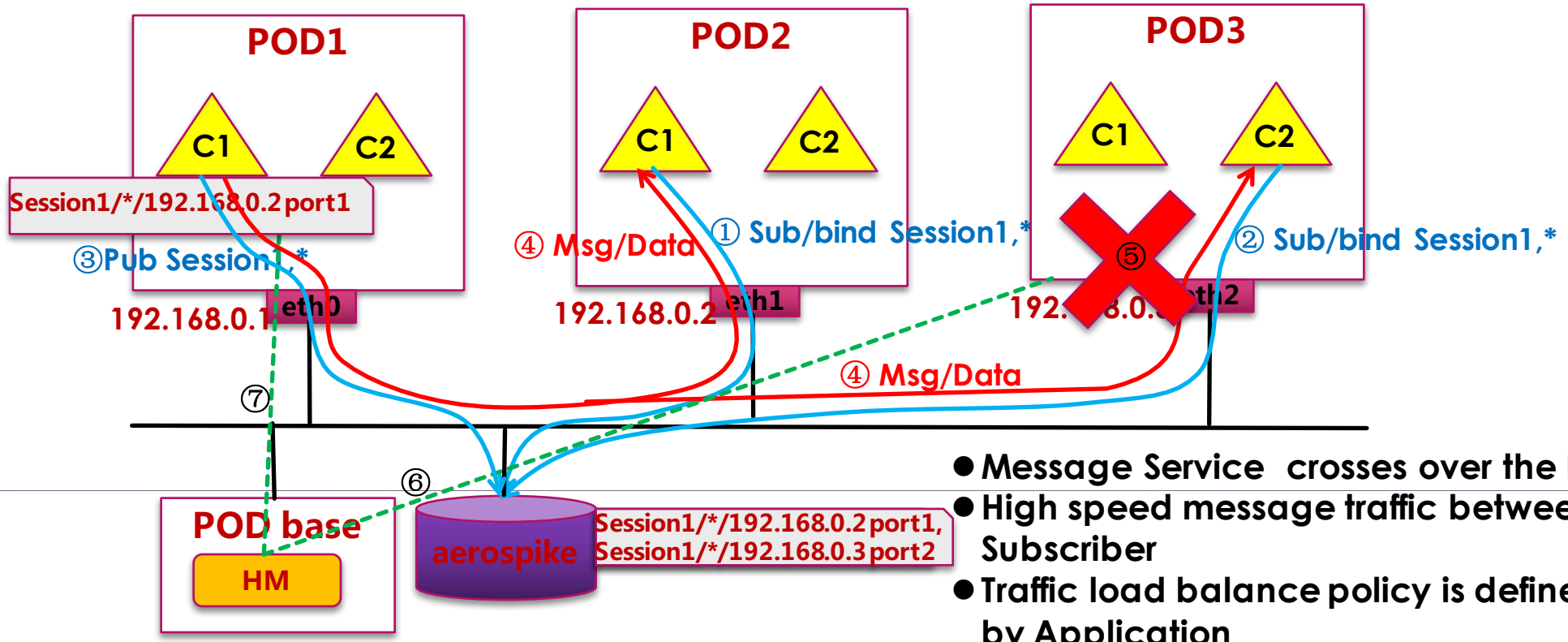


- run in docker, deployed in vm or ironic
- implement service discovery mechanism
- support ICT applications
- multi-tenant,multi-networking-plane

Packet Flow to/from PaaS

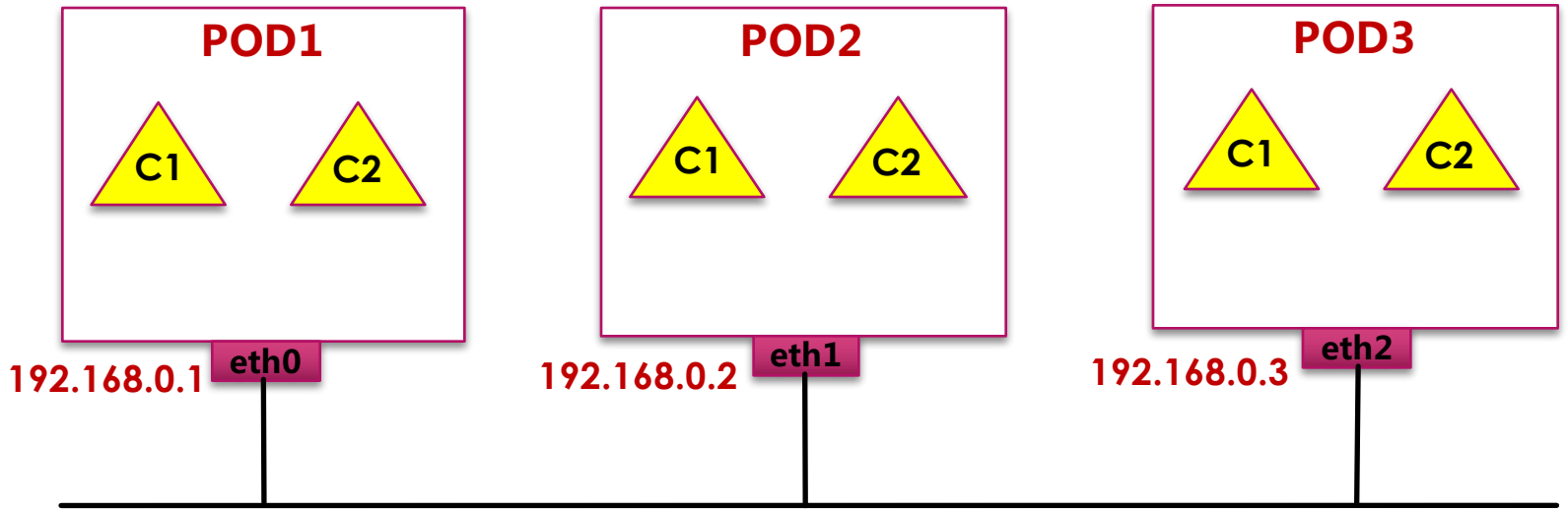


Message Service--Publish/Subscribe



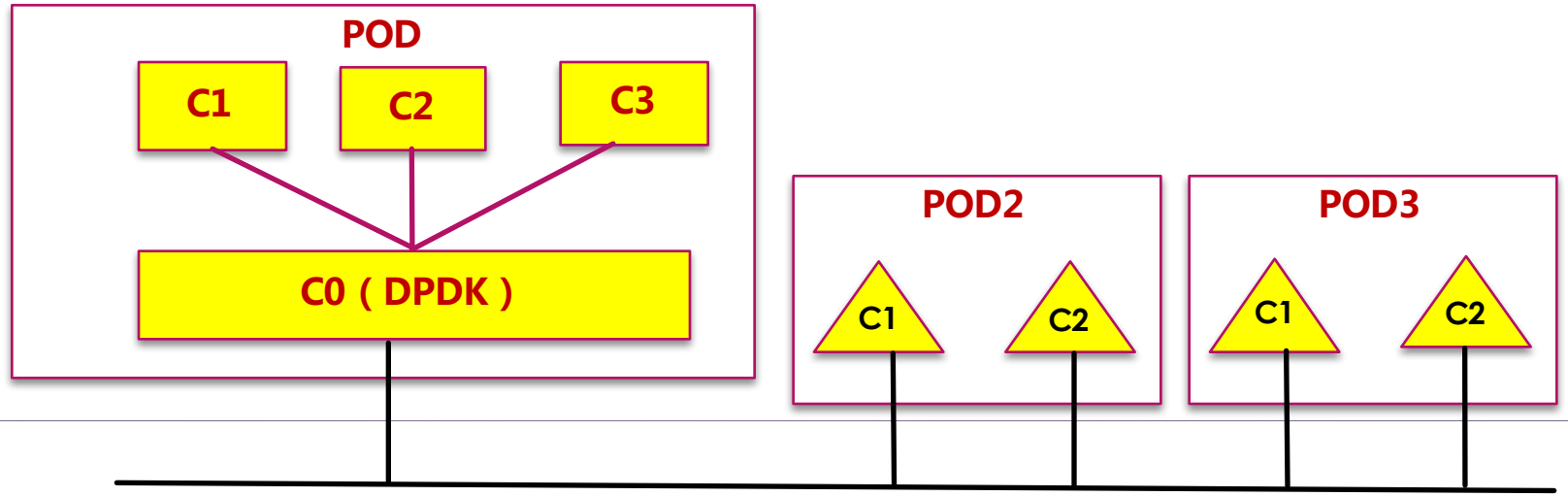
- Message Service crosses over the K8S clusters
- High speed message traffic between Publisher and Subscriber
- Traffic load balance policy is defined on Publisher by Application
- Service will support the conversation HA

Model without DPDK



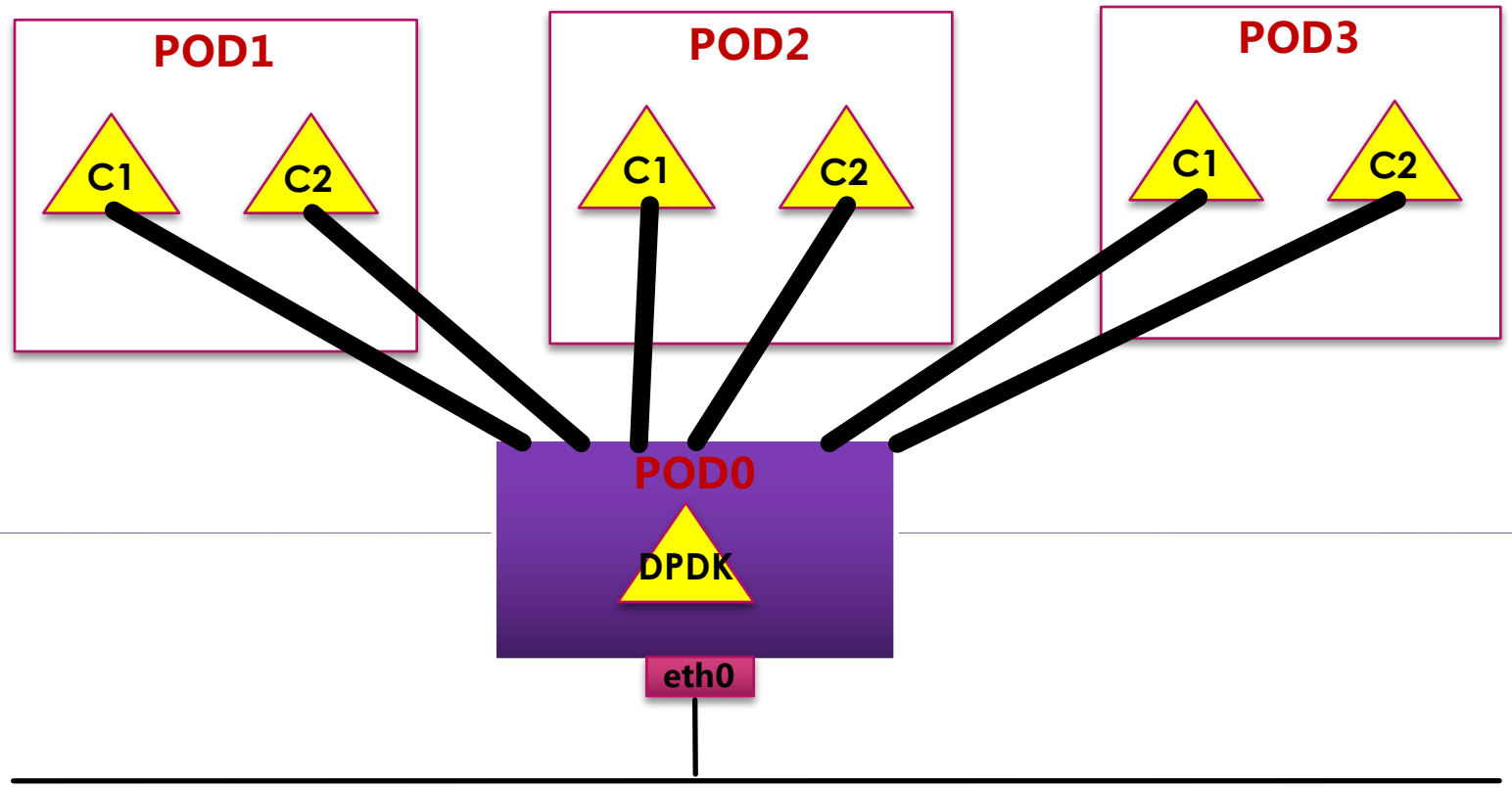
Model with DPDK(1)

- one DPDK container per Pod

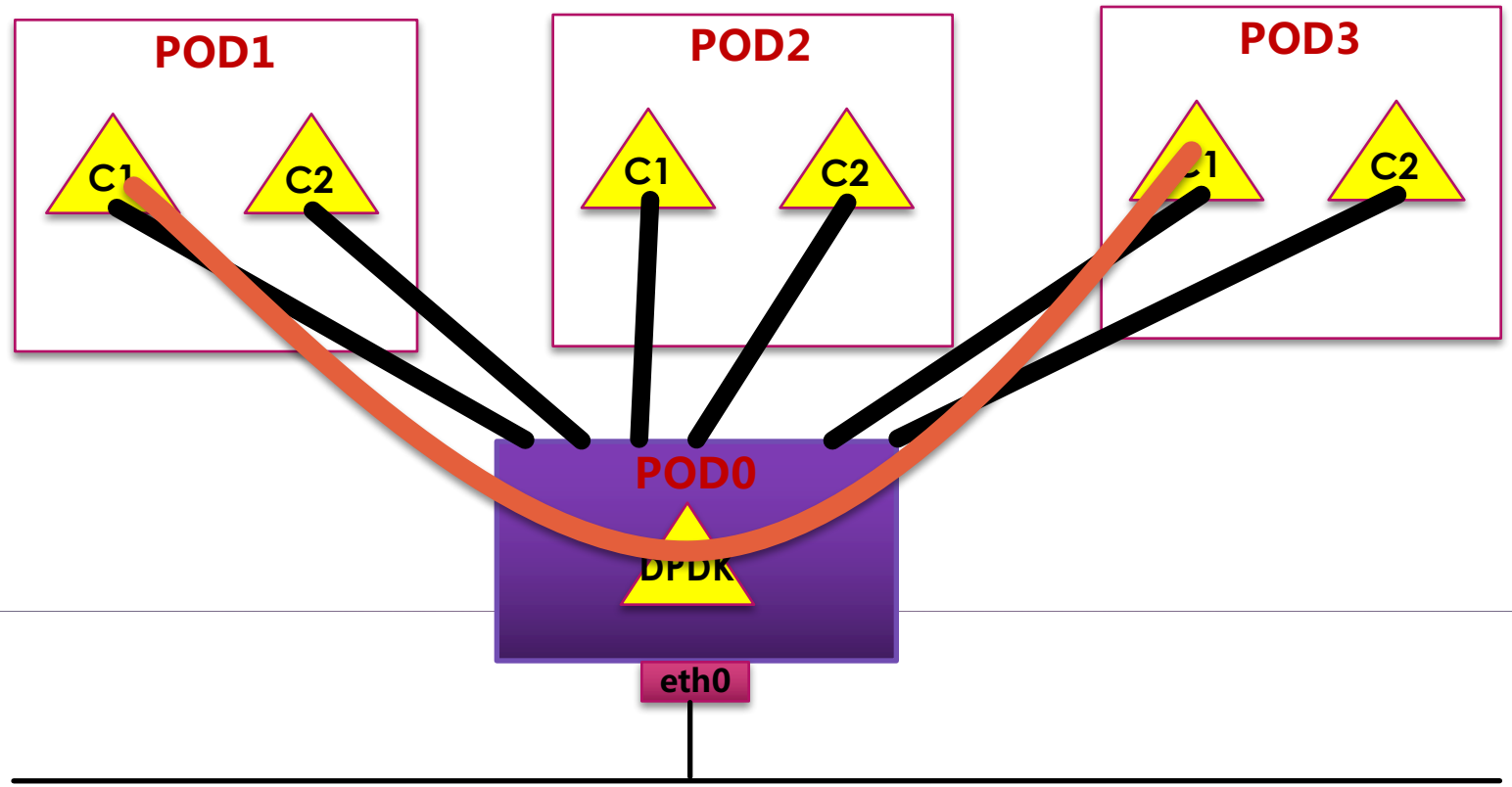


Model with DPDK(2)

- All pods share a DPDK container

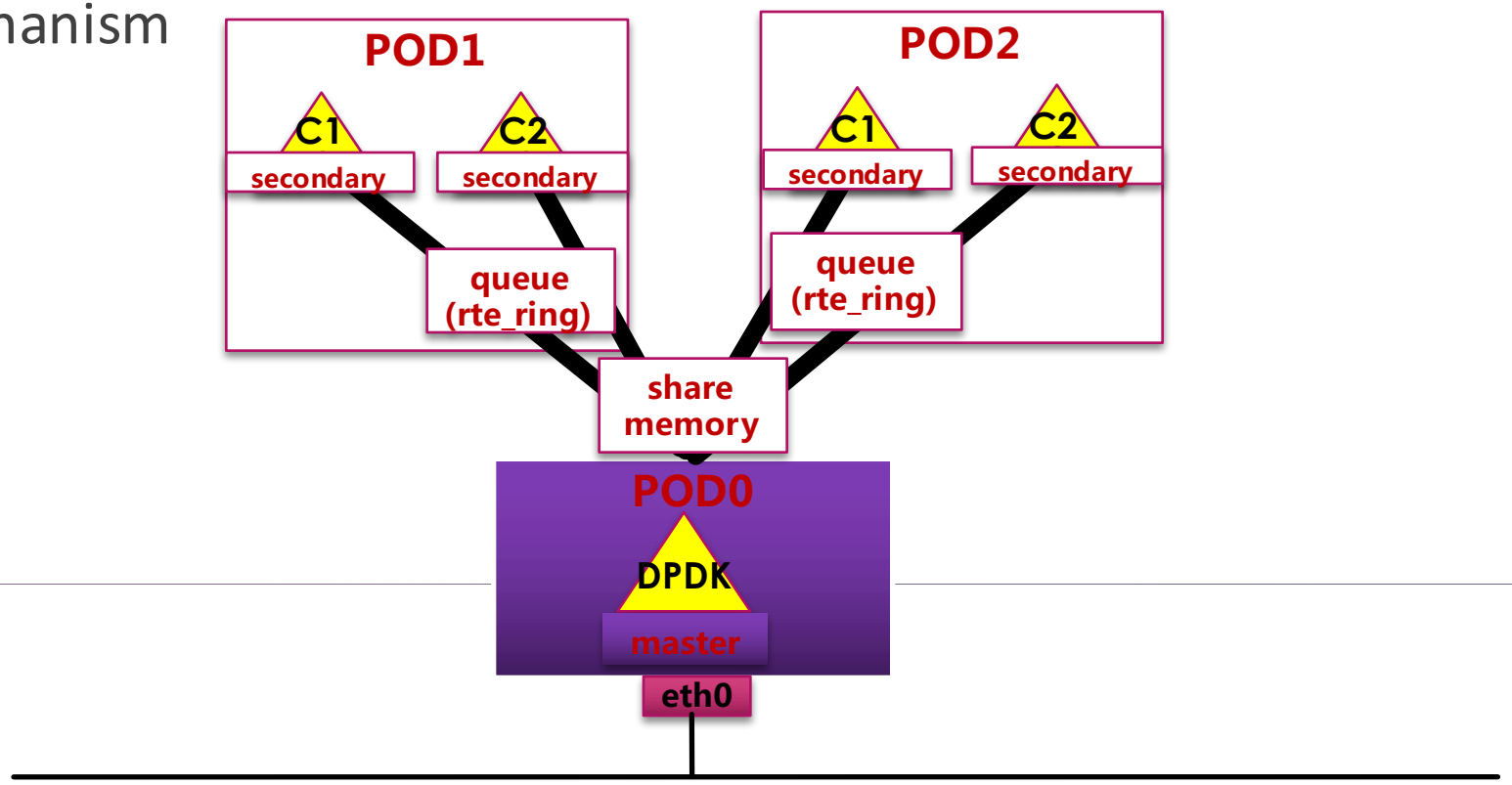


Communications between containers(1)



Key Technology

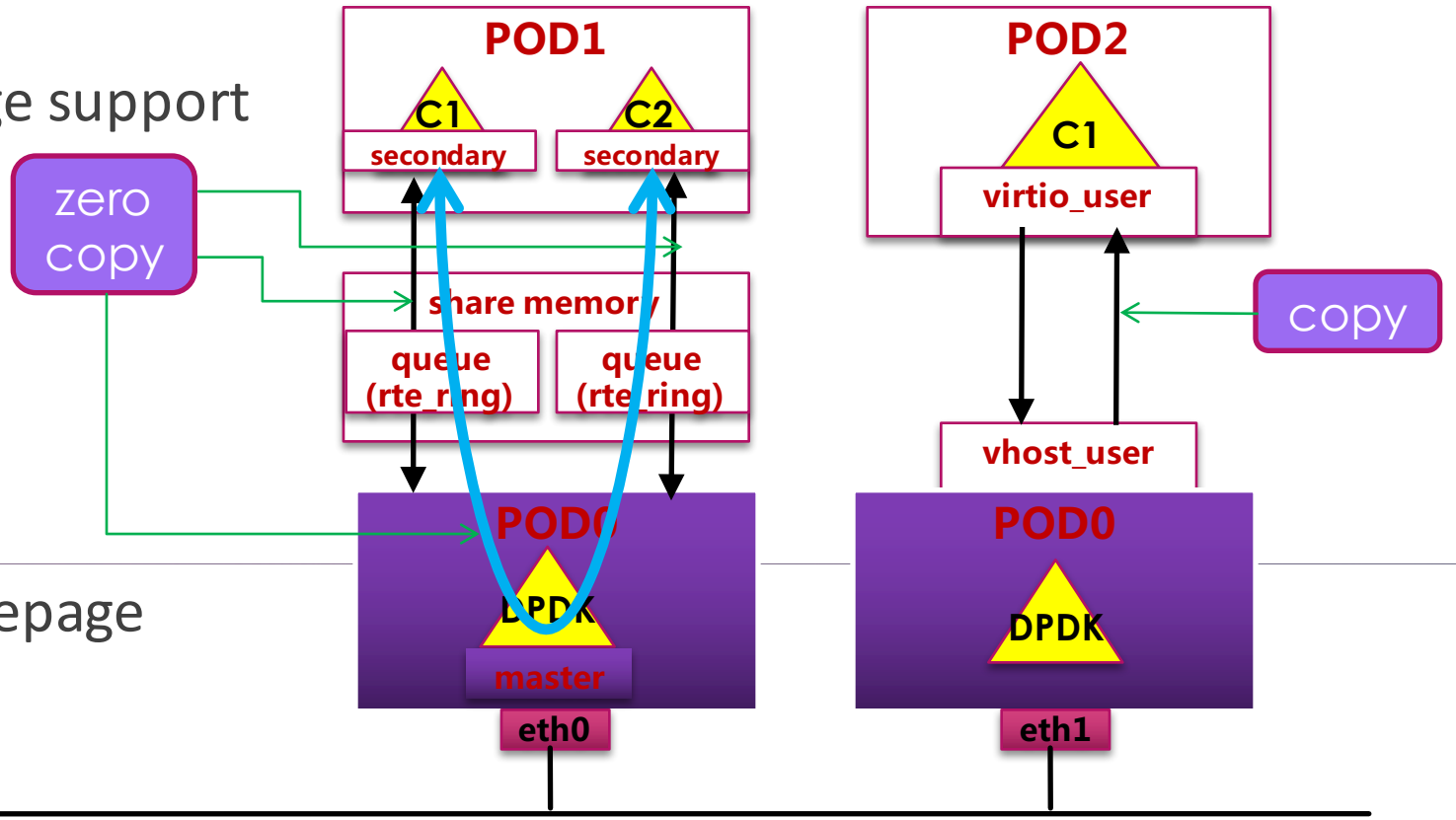
- master/secondary mechanism
- sharing memory
- queue(rte_ring)



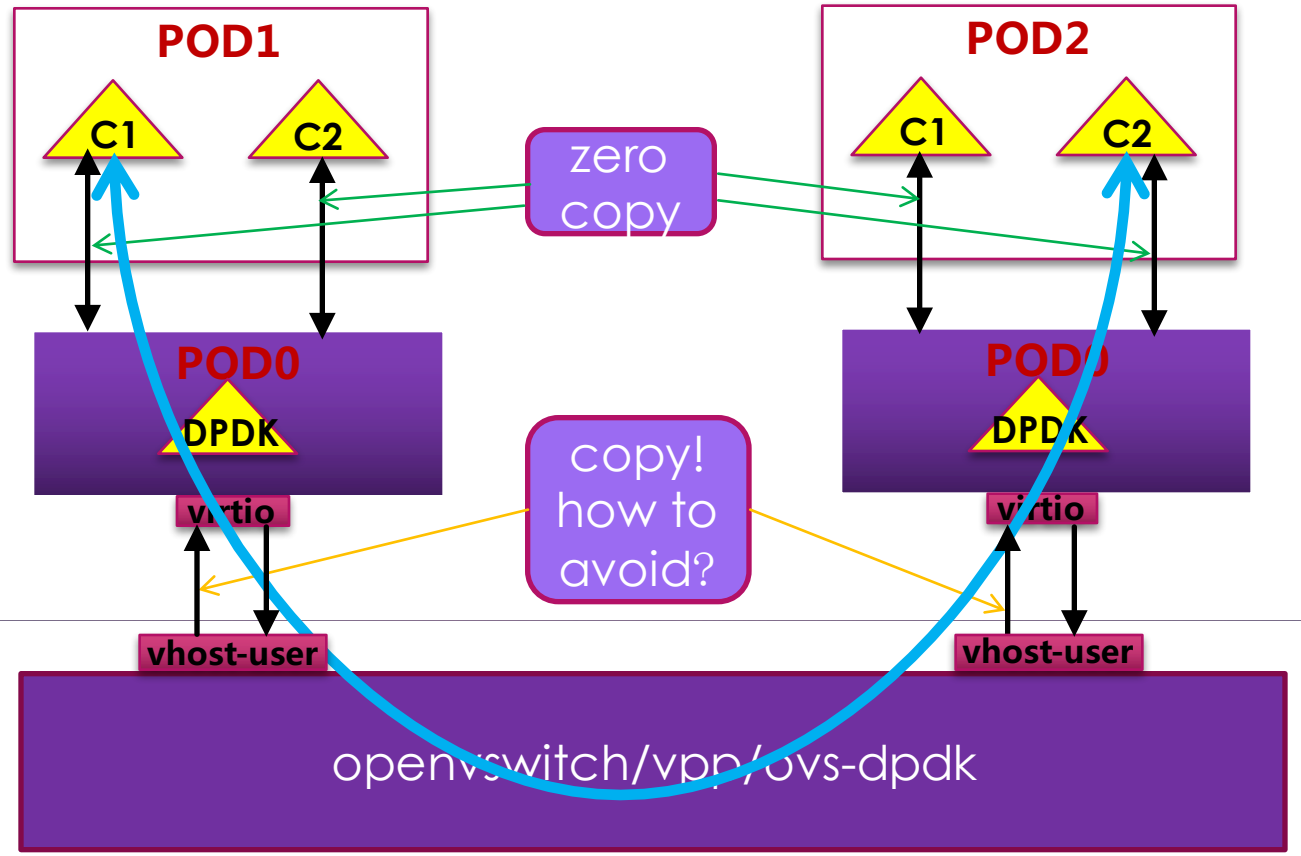
Benefits vs vhost-user

- Bidirectional zero copy
- 2M & other size hugepage support

- vhost-user:
- only dequeue zero copy
- only support 1G size hugepage

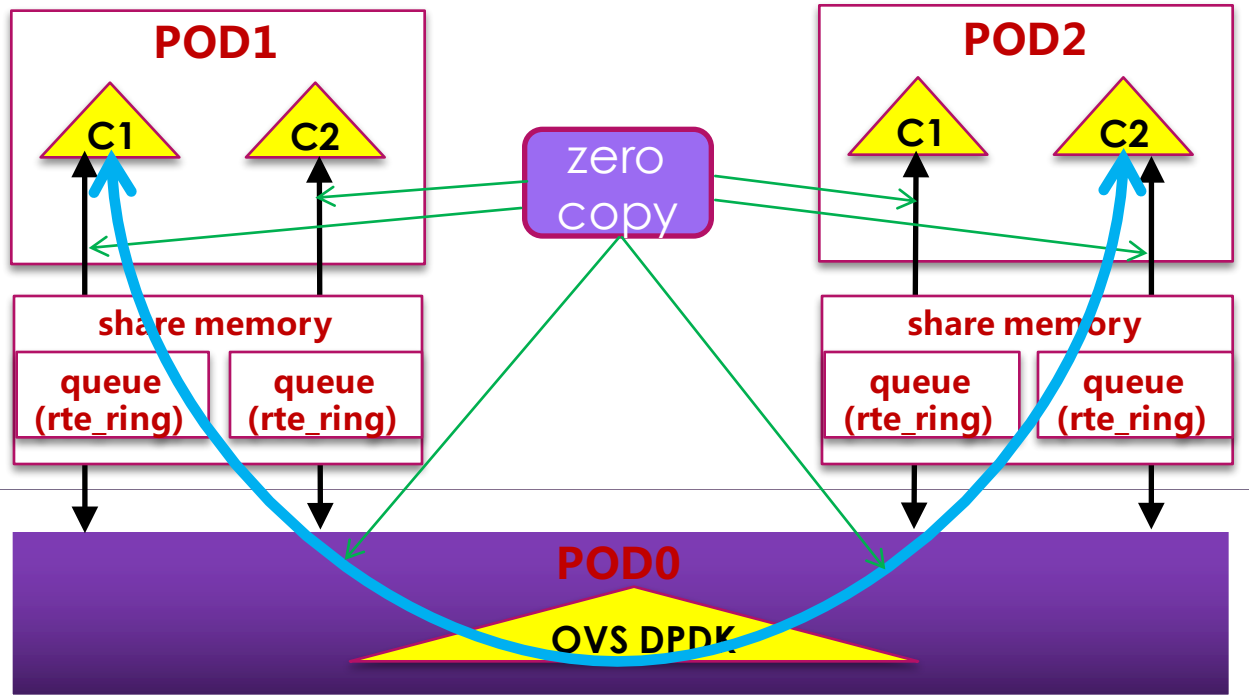


Communications between containers(2)

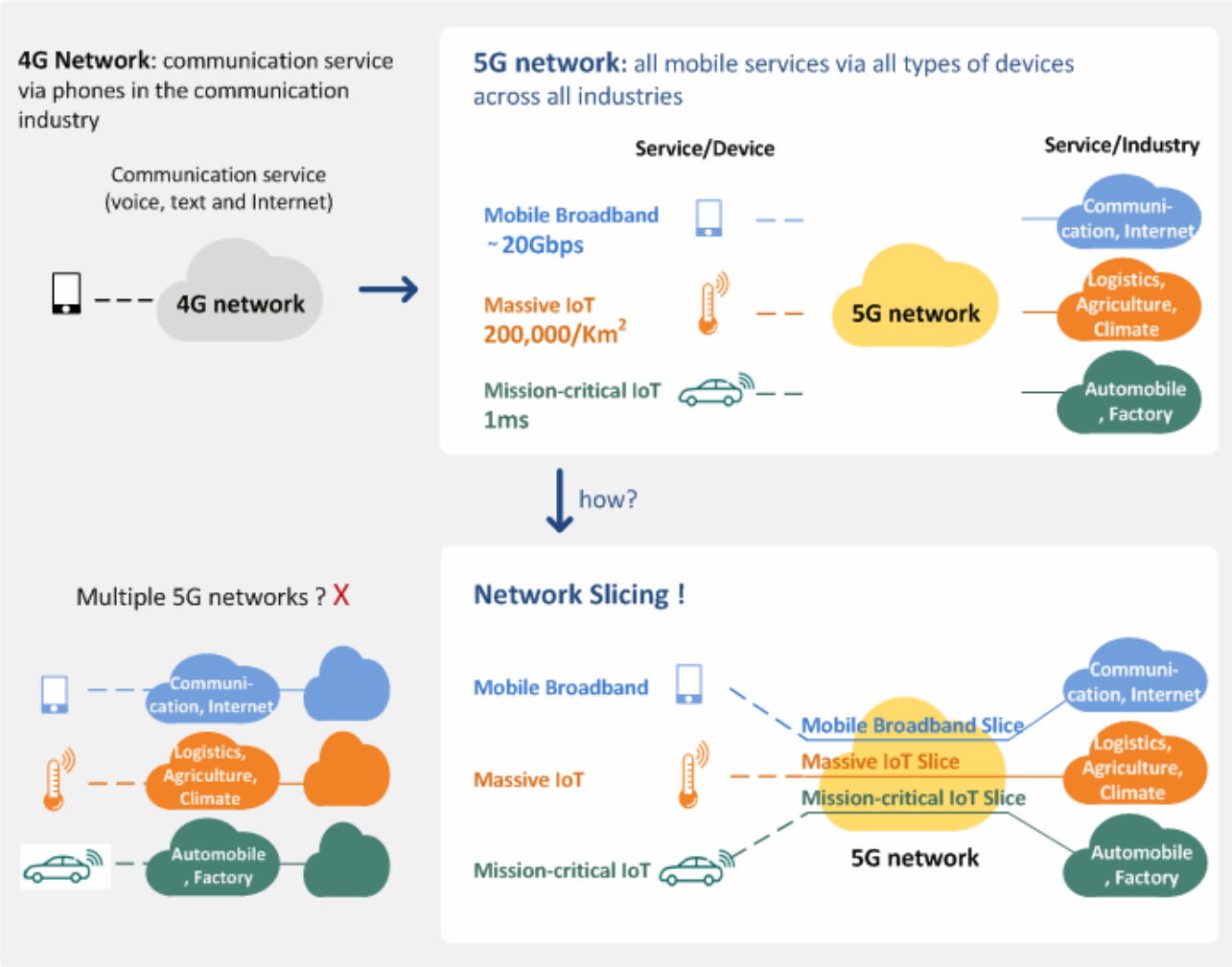


Promotion

- combine pod0 with ovs

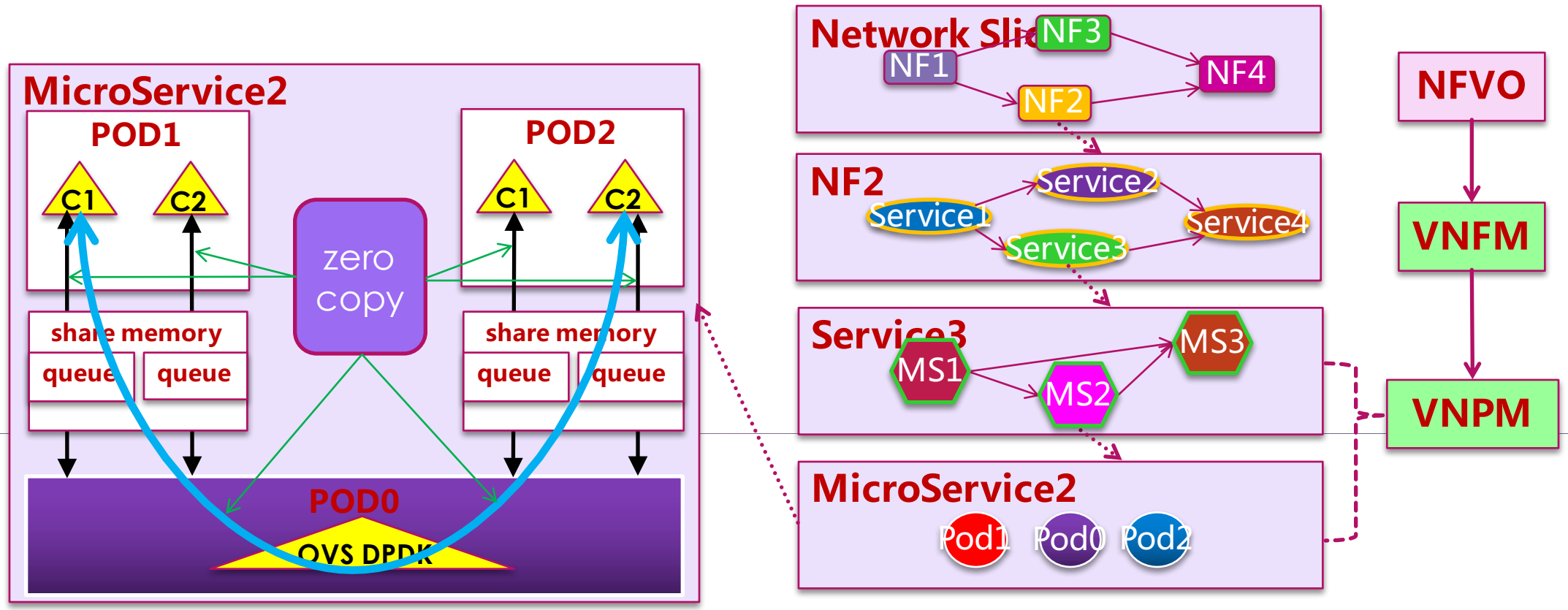


5G and Network Slicing



- dpdk as microservices brings the following benefits to network slicing:
  - zero copy
  - high performance
  - low latency

Network Slice Orchestration



Acknowledge contribution from

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