

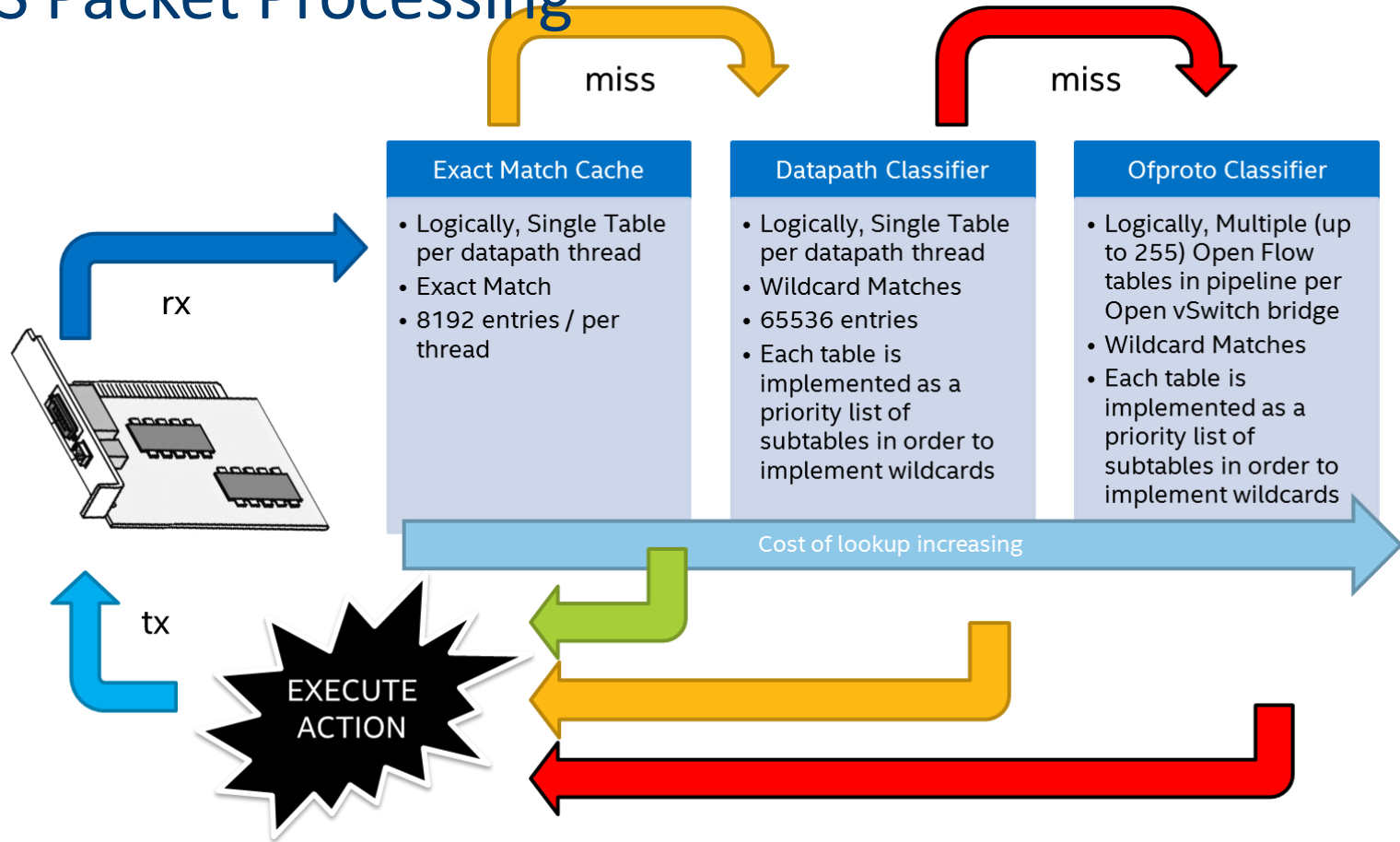


# OPNFV

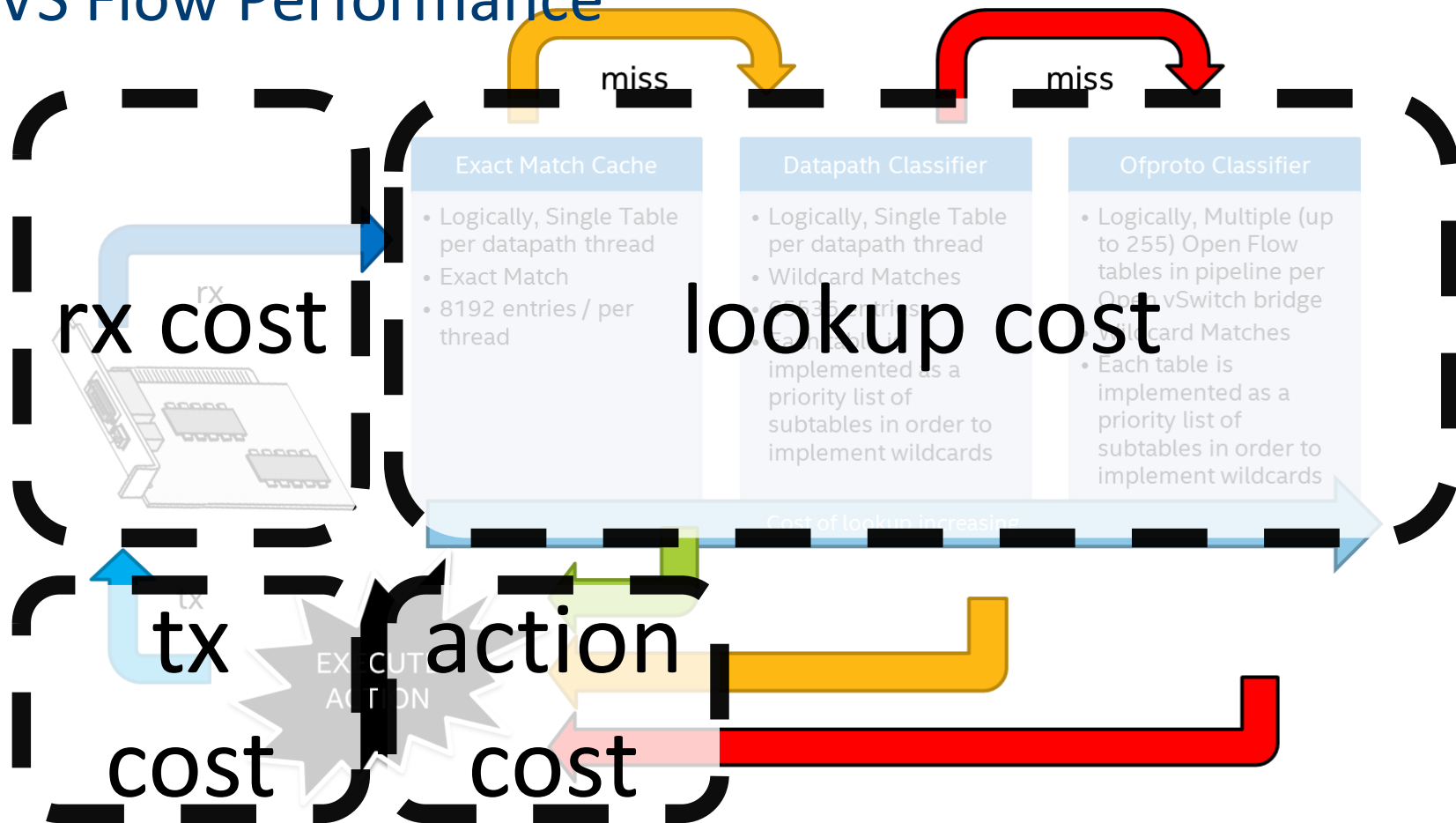
## OVS Performance

Mark Gray  
Intel/OPNFV  
March 2016

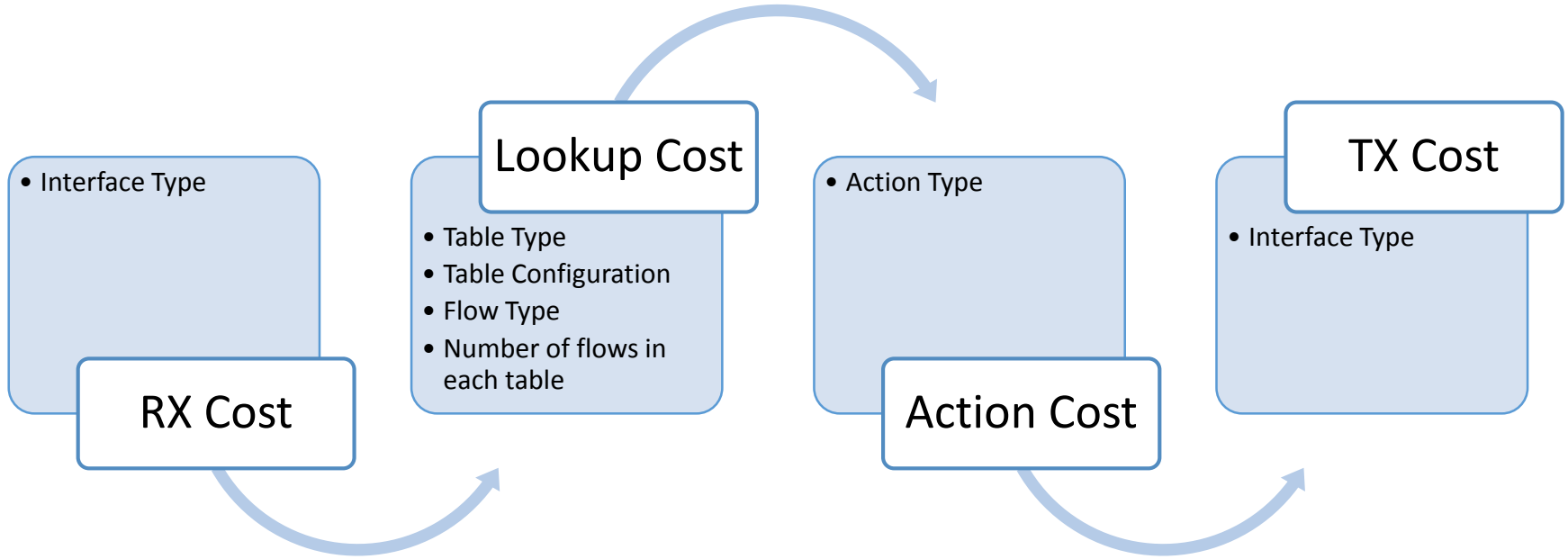
# OVS Packet Processing



# OVS Flow Performance

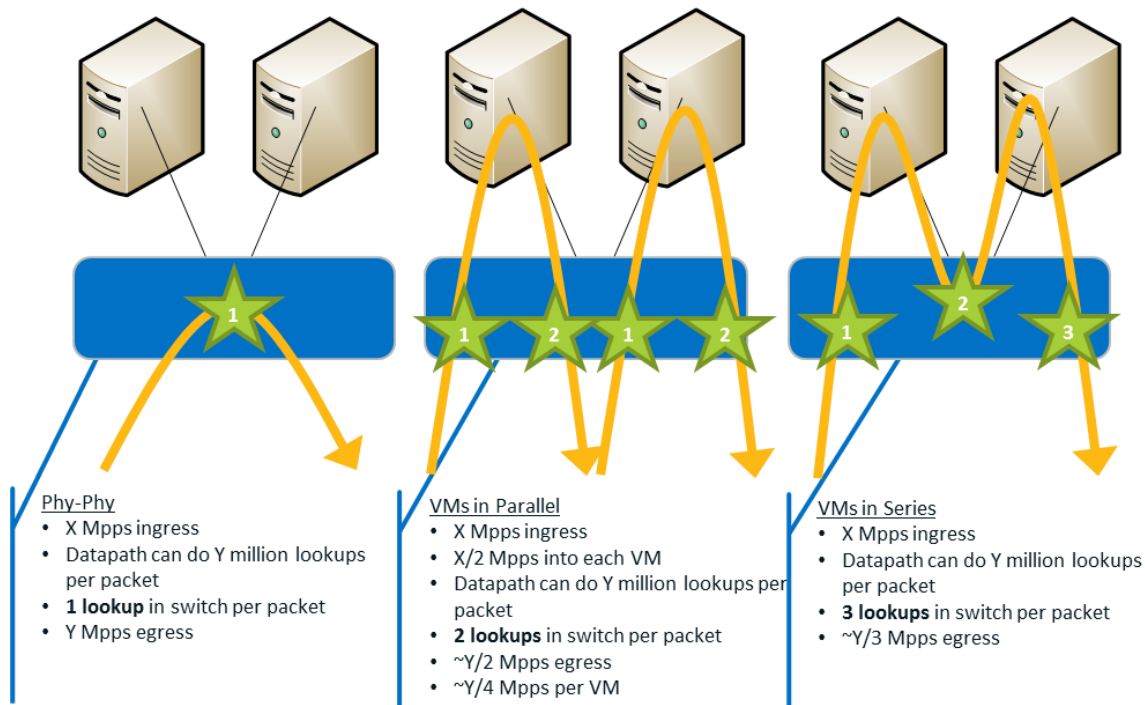


# OVS Flow Performance Factors



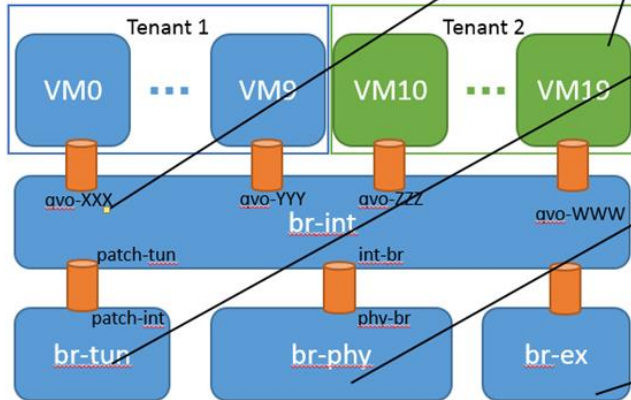
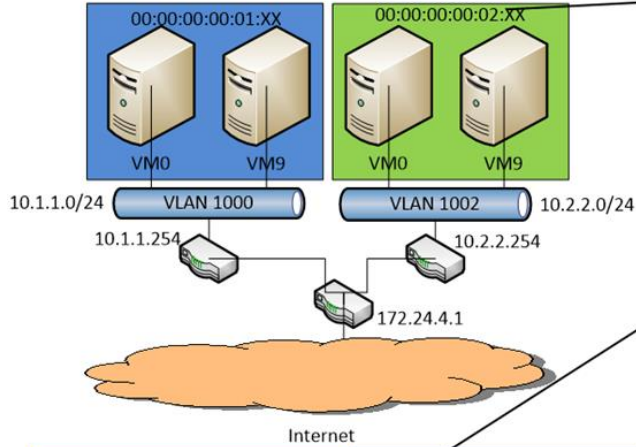
Many factors affect the performance of each individual flow

# OVS Topology Performance Factors



Topology of a use case can affect performance as perceived externally from compute node

# Openstack Neutron Configuration Example



Can overlap IP and MAC addresses across tenants

Not showing security groups configuration

```
[tester@silpixa00381991 openstack_test]$ sudo ovs-ofctl dump-flows br-int
NXST_FLOW reply (xid=0x4):
cookie=0x0, duration=1522.667s, table=0, n_packets=1524, n_bytes=135142, idle_age=985, priority=1
actions=NORMAL
cookie=0x0, duration=1322.207s, table=0, n_packets=0, n_bytes=0, idle_age=1322,
priority=3,in_port=1,dl_vlan=1002 actions=mod_vlan_vid:3,NORMAL
cookie=0x0, duration=1355.799s, table=0, n_packets=0, n_bytes=0, idle_age=1355,
priority=3,in_port=1,dl_vlan=1000 actions=mod_vlan_vid:2,NORMAL
cookie=0x0, duration=1522.596s, table=0, n_packets=0, n_bytes=0, idle_age=1522, priority=2,in_port=1
actions=drop
cookie=0x0, duration=1522.663s, table=23, n_packets=0, n_bytes=0, idle_age=1522, priority=0
actions=drop
```

```
[tester@silpixa00381991 openstack_test]$ sudo ovs-ofctl dump-flows br-tun
NXST_FLOW reply (xid=0x4):
```

```
[tester@silpixa00381991 openstack_test]$ sudo ovs-ofctl dump-flows br-ent12s0f1
NXST_FLOW reply (xid=0x4):
cookie=0x0, duration=1683.106s, table=0, n_packets=0, n_bytes=0, idle_age=1683, priority=1
actions=NORMAL
cookie=0x0, duration=1482.695s, table=0, n_packets=186, n_bytes=19092, idle_age=1241,
priority=4,in_port=2,dl_vlan=3 actions=mod_vlan_vid:1002,NORMAL
cookie=0x0, duration=1516.269s, table=0, n_packets=180, n_bytes=18732, idle_age=1313,
priority=4,in_port=2,dl_vlan=2 actions=mod_vlan_vid:1000,NORMAL
cookie=0x0, duration=1683.055s, table=0, n_packets=144, n_bytes=12012, idle_age=1311,
priority=2,in_port=2 actions=drop
```

```
[tester@silpixa00381991 openstack_test]$ sudo ovs-ofctl dump-flows br-ex
NXST_FLOW reply (xid=0x4):
cookie=0x0, duration=1593.857s, table=0, n_packets=66, n_bytes=7344, idle_age=1265, priority=0
actions=NORMAL
```

# How can we document performance requirements?

Use Case	Topology	Action Types	Number of Flows	Flow table occupancy rate	.. etc ..
vCPE					
vPE					
vEPC					
.. etc ..					

- “Baremetal-Like Performance” is not sufficiently specific to target optimization efforts. Therefore more detail is necessary
- Above shows one example, however:
  - Too complicated?
  - Exposes operator’s confidential information?

# How can we document performance requirements?

vsperf test case Use Case	LTD.x	LTD.y	LTD.z	.. etc ..	.. etc ..
vCPE					
vPE					
vEPC					
.. etc ..		.. etc ..			

- Specific requirement
- Easily testable
- Still exposes some confidential information?



# How can we document performance requirements?

vsperf test case	LTD.x	LTD.y	LTD.z	.. etc ..	.. etc ..
Use Case					
> 0% use cases					
> 33% use cases					
> 66% use cases					

- Landing zone requirements
- Specific requirement
- Easily testable