

Combinated Mode

Our switches support such a command "*ovs-vsctl set-combinated-mode true / false*". This command is for resolving the packets forwarding problem of push_vlan. Sometimes, the packets forwarding is not as expected.

There are two flows in our switch below:

```
priority=100, in_port=1, dl_vlan=1, actions=push_vlan:100, output:2
```

```
priority=110, in_port=1, dl_vlan=100, actions=output:3
```

Sending packets match to the first flow: We expect the packets to forward to port 2 after pushing vlan 100, but the actual result is that port 3 receives these packets with outer vlan 100.

In order to solve this kind of problem, we add a new command "*ovs-vsctl set-combinated-mode true/false*". When enabling this combined mode, each flow can have a new match field class-id added. Each flow has a different class-id, so the packets can be forwarded correctly. In hardware, each flow is separated with two flows with class-id as following:

When user adds such two flows to the switch:

```
priority=100, in_port=1, dl_vlan=1, actions=push_vlan:100, output:2
```

```
priority=110, in_port=1, dl_vlan=100, actions=output:3
```

In hardware, this flow can be separated to two parts in icap and vcap:

```
vcap: priority=100, class-id=1, in_port=1, dl_vlan=1, and push_vlan 100
```

```
icap: priority=100, class-id=1, in_port=1, dl_vlan=100, and output:2
```

```
priority=110, class-id=2, in_port=1, dl_vlan=100, and output:3
```

Commands

enable combined mode

```
admin@PicOS-OVS$ ovs-vsctl set-combinated-mode true
```

disable combined mode (by default)

```
admin@PicOS-OVS$ ovs-vsctl set-combinated-mode false
```

Example

```
admin@PicOS-OVS$ ovs-vsctl add-br br0 -- set bridge br0 datapath_type=pica8
admin@PicOS-OVS$ ovs-vsctl add-port br0 ge-1/1/1 vlan_mode=trunk tag=1 -- set interface ge-1/1/1 type=pica8
admin@PicOS-OVS$ ovs-vsctl add-port br0 ge-1/1/2 vlan_mode=trunk tag=1 -- set interface ge-1/1/2 type=pica8
admin@PicOS-OVS$ ovs-vsctl add-port br0 ge-1/1/3 vlan_mode=trunk tag=1 -- set interface ge-1/1/3 type=pica8
admin@PicOS-OVS$ ovs-vsctl set-combinated-mode true
admin@PicOS-OVS$ ovs-ofctl add-flow br0 priority=100, in_port=1, dl_vlan=1, actions=push_vlan:100, output:2
admin@PicOS-OVS$ ovs-ofctl add-flow br0 priority=110, in_port=1, dl_vlan=100, actions=output:3
```

When sending packets match the first flow with dl_vlan=1 to ge-1/1/1, then ge-1/1/2 will forward packets with outer vlan 100, not ge-1/1/3. This will provide our expected result.

Note

1. When enabling or disabling combined mode, all the flows in table 0 are evicted from the switch, except the default **drop** flow;
2. When enabling combined mode, the max flow numbers including push_vlan and other normal flows is different in different platforms:

P5401&&P5101&&P3922&&P3930&&AS6701&&P3780: the max number is 512.

P3290&&P3297&&P3295: the max number is 1024

