

# PICOS OVS Troubleshooting

This section details basic procedures to troubleshoot PicOS switches in OVS (Open vSwitch) mode.

## Verifying PicOS Mode

Verify if PicOS is actually running in OVS (Open vSwitch) mode, as described in [Checking PicOS Mode](#).

When PicOS is running in the OVS mode, two processes should be running: **ovsdb-server** and **ovs-vswitchd**.

```
admin@XorPlus$ps -ef | grep ovs
root      1356      1  0 Jan26 ?          00:00:10 /ovs/sbin/ovsdb-server /ovs/ovs-vswitchd.conf.db --pidfile --
remote=punix:/ovs/var/run/openvswitch/db.sock
root      1358      1  0 Jan26 ?          00:19:07 /ovs/sbin/ovs-vswitchd --enable-shared-lcmgr
```

In CrossFlow mode, the router stack must have been initialized in addition to having **ovsdb-server** and **ovs-vswitchd** processes running.

```
admin@XorPlus$ps -ef | grep pica
root      12430      1  0 Jan07 ?          00:05:49 pica_cardmgr
root      12432      1  0 Jan07 ?          01:03:19 pica_sif
root      12439      1  0 Jan07 ?          00:08:45 pica_lacp
root      12441      1 19 Jan07 ?          4-10:50:14 pica_lcmgr
root      12447      1  0 Jan07 ?          00:09:58 pica_login
root      13218      1  0 Jan07 ?          00:20:47 pica_mstp
root      13236      1  0 Jan07 ?          01:25:30 /pica/bin/xorp_rtrmgr -d -L local0.info -P /var/run/xorp_rtrmgr.
pid
```

## Verifying Bridge Configuration

For the bridge and ports to forward frames in hardware, the **datapath\_type** configured for each entity must be set to **pica8**.

```

admin@PicOS-OVS$ovs-vsctl show
ac9e5b1e-4234-4158-9214-5660b9343779
  Bridge east
    Controller "tcp:172.16.0.142:6653"
      is_connected: true
    fail_mode: standalone
    Port "ae1"
      tag: 1
      Interface "ae1"
        type: "pica8_lag"
        options: {lacp-mode=active, lacp-system-priority="32768", lacp-time=slow, lag_type=lacp,
link_speed=auto, members="te-1/1/2"}
    Port "te-1/1/2"
      tag: 1
      Interface "te-1/1/2"
        type: "pica8"
        options: {flow_ctl=none, link_speed=auto}
    Port "te-1/1/1"
      tag: 1
      Interface "te-1/1/1"
        type: "pica8"
        options: {flow_ctl=none, link_speed=auto}

admin@PicOS-OVS$ovs-ofctl show east
OFPST_FEATURES_REPLY (OF1.4) (xid=0x2): dpid:1deb0ae61be44040
n_tables:254, n_buffers:256
capabilities: FLOW_STATS TABLE_STATS PORT_STATS GROUP_STATS
OFPST_PORT_DESC reply (OF1.4) (xid=0x4):
  1(te-1/1/1): addr:ff:ff:ff:ff:ff:ff:00
    config: 0
    state: LINK_UP
    current: 1GB-FD COPPER
    advertised: 1GB-FD 10GB-FD FIBER
    supported: 10MB-FD 100MB-FD 1GB-FD 10GB-FD FIBER AUTO_NEG
    speed: 1000 Mbps now, 10000 Mbps max
  2(te-1/1/2): addr:ff:ff:ff:ff:ff:ff:00
    config: 0
    state: LINK_DOWN
    current: 1GB-FD COPPER
    advertised: 1GB-FD 10GB-FD FIBER
    supported: 10MB-FD 100MB-FD 1GB-FD 10GB-FD FIBER AUTO_NEG
    speed: 1000 Mbps now, 10000 Mbps max
  1025(ae1): addr:ff:ff:ff:ff:ff:ff:00
    config: 0
    state: LINK_UP
    current: 1GB-FD COPPER
    advertised: 1GB-FD 10GB-FD FIBER
    supported: 10MB-FD 100MB-FD 1GB-FD 10GB-FD FIBER AUTO_NEG
    speed: 1000 Mbps now, 10000 Mbps max
LOCAL(east): addr:0a:e6:1b:e4:40:40
  config: 0
  state: LINK_UP
  current: 10MB-FD COPPER
  supported: 10MB-FD COPPER
  speed: 10 Mbps now, 10 Mbps max
OFPST_GET_CONFIG_REPLY (OF1.4) (xid=0x6): frags=normal miss_send_len=0
admin@PicOS-OVS$

```

Once the ports are configured and verified, flows can be managed in OVS.

## Checking Flow Discrepancies

Check **ovs-vsitchd** flow discrepancies between the control plane and hardware:

```

admin@PicOS-OVS$ovs-ofctl dump-tables br0 | grep -v active=0:
  0: active=4, lookup=n/a, matched=n/a

admin@PicOS-OVS$ovs-ofctl dump-flows br0
OFPST_FLOW reply (OF1.4) (xid=0x2):
  cookie=0x0, duration=1449.903s, table=0, n_packets=n/a, n_bytes=0, in_port=1,dl_src=00:00:3d:a6:c8:f2
actions=output:2
  cookie=0x0, duration=1444.537s, table=0, n_packets=n/a, n_bytes=0, in_port=1,dl_src=00:00:3d:a6:c9:14
actions=output:1
  cookie=0x0, duration=71723.842s, table=0, n_packets=n/a, n_bytes=0, mpls,in_port=1,dl_vlan=1,mpls_label=10
actions=output:3
  cookie=0x0, duration=74839.581s, table=0, n_packets=n/a, n_bytes=923443200, in_port=1 actions=output:2

```

Display hardware flows as shown below:

```

admin@PicOS-OVS$ovs-appctl pica/dump-flows
#24 normal permanent priority=32769,in_port=1,dl_src=00:00:3d:a6:c8:f2, actions:2
#23 normal permanent priority=32769,in_port=1,dl_src=00:00:3d:a6:c9:14, actions:1
#22 normal permanent priority=32769,mpls,in_port=1,dl_vlan=1,mpls_label=10, actions:3
#21 normal permanent priority=32769,in_port=1, actions:2
#20 normal permanent priority=0, actions:drop
Total 5 flows in HW.

```

## Displaying OVSDB

Display the full OVSDB (Open vSwitch Database) as shown below:

```

admin@Leaf1$ovsdb-client dump
Bridge table
 _uuid                               controller                               datapath_id                               datapath_type
external_ids fail_mode flood_vlans flow_tables ipfix lldp_enable mirrors name      netflow other_config
ports
protocols      sflow status stp_enable
-----
-----
-----
-----
-----
c880536a-b614-41bf-9870-2d0bdab3664f [bedb4af7-2125-4346-8c89-bf61bd21f63b] "4c3e486e730203da" "pica8"
{} [] [] {} [] false [] "ECODE3" [] {}
[31605950-d9be-40b2-9ccb-bc4fd09991f0, 61ac5778-554f-4553-83ae-3bbc19ccf715, 62b35f47-e8ca-4496-8b37-
f9bfb7e80b0, 6dee5c6a-e9b8-41f7-87ef-b9379637a7c4, 99ac75b7-9fa1-4583-85f7-66d3145e7fa4] ["OpenFlow13"] []
{} false
<Some output omitted>

```

## Debug Packet-In Messages

To debug the protocol messages between the switch and the controller, use the **ovs-ofctl snoop** command in the OVS mode. The following commands debug the protocol messages exchanged between the **br0** bridge and the controller:

```

admin@Switch$ovs-ofctl snoop br0

```