



Hewlett Packard
Enterprise

Unit Test Debugging Utility

OVS/OVN 2021 Fall Conference

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Executing Testsuites

- OVS has different test suites to test features in different environments
 - `make check # Basic Checks`
 - `make check-system-userspace`
 - `make check-kmod`
 - `make check-dpdk`

When a testsuite fails ...

```
# ----- ##
## openvswitch 2.16.90 test suite. ##
## ----- ##
768: tunnel - Geneve option present                FAILED (tunnel.at:936)

## ----- ##
## Test results. ##
## ----- ##

ERROR: 1 test was run,
1 failed unexpectedly.
## ----- ##
## testsuite.log was created. ##
## ----- ##
```

Please send `tests/testsuite.log' and all information you think might help:

```
To: <bugs@openvswitch.org>
Subject: [openvswitch 2.16.90] testsuite: 768 failed
```

You may investigate any problem if you feel able to do so, in which case the test suite provides a good starting point. Its output may be found below `tests/testsuite.dir'.

What's next

- Log files at test execution directory
 - For example: `_build-gcc/tests/testsuite.dir/0768`
- Examine artifacts to reconstruct the problem
- Difficulties in debugging a failure
 - Testsuite exits and tears down setup on failure
 - No easy way to examine the system in failed state
 - Difficult to run `gdb` to debug the problem
 - Recreate test setup manually

Pause on Failure – OVS_PAUSE_TEST

– Environment variable to control pause-on-failure

– Via make

```
– $ OVS_PAUSE_TEST=1 make check TESTSUITEFLAGS='-v 768'
```

– Via run

```
– $ cd _build-gcc/tests/testsuite.dir/0768
```

```
– $ OVS_PAUSE_TEST=1 ./run
```

– Examine the switch in a different terminal

```
– $ export OVS_RUNDIR=/home/vdasari/Developer/ovs/_build-gcc/tests/testsuite.dir/0768
```

– Once done resume the testcase for completion from the main window

Pause on Failure – OVS_PAUSE_TEST

```
$ OVS_PAUSE_TEST=1 make check TESTSUITEFLAGS='-v 768'
Making check in datapath
Making check in linux
RTNETLINK answers: Operation not permitted
Cannot find device "veth0"
Cannot find device "veth0"
Cannot find device "veth0"
## ----- ##
## openvswitch 2.16.90 test suite. ##
## ----- ##
768. tunnel.at:905: testing tunnel - Geneve option present ...
../tests/tunnel.at:906: ovssdb-tool create conf.db
$abs_top_srcdir/vswitchd/vswitch.ovsschema.
.
.
=====
Set following environment variable to use various ovs utilities
export OVS_RUNDIR=/opt/vdasari/Developer/ovs/_build-gcc/tests/testsuite.dir/0768
Press ENTER to continue:
```

Inspect switch

```
$ export OVS_RUNDIR=/opt/vdasari/Developer/ovs/_build-gcc/tests/testsuite.dir/0768
$ ovs-ofctl dump-flows br0
cookie=0x0, duration=1.172s, table=0, n_packets=0, n_bytes=0, priority=3,tun_metadata2=0 actions=drop
cookie=0x0, duration=1.172s, table=0, n_packets=0, n_bytes=0, priority=2,tun_metadata1 actions=IN_PORT
cookie=0x0, duration=1.172s, table=0, n_packets=0, n_bytes=0, priority=1,tun_metadata0 actions=output:p2
$ ovs-vsctl show
8693786e-15ed-4b62-a753-8b4a16a2f45f
    Bridge br0
        fail_mode: secure
        datapath_type: dummy
    Port br0
        Interface br0
            type: internal
    Port p2
        Interface p2
            type: dummy
    Port p1
        Interface p1
            type: geneve
            options: {remote_ip="1.1.1.1"}
$ ovs-appctl ofproto/list-tunnels
port 6081: p1 (geneve: ::->1.1.1.1, key=0, legacy_l2, dp port=6081, ttl=64)
```

More Debug Options

– Run gdb on daemons in failed state

```
– sudo gdb `which ovs-vswitchd` `pidof ovs-vswitchd`
```

– Inspect and execute commands from namespaces created

```
– ip netns list
```

```
– sudo ip netns exec at_fp0 ping 10.1.1.100 -c
```

– Run appctl commands for packet tracing

```
– ovs-appctl ofproto/trace ovs-dummy
```

```
'tunnel(tun_id=0x0,ipv6_src=2001:cafe::1,ipv6_dst=2001:cafe::2,ttl=64),in_port(4789)'
```

Resume testcase – Press ENTER

```
===== export
OVS_RUNDIR=/opt/vdasari/Developer/ovs/_build-gcc/tests/testsuite.dir/0768
Press ENTER to continue:

768. tunnel.at:905: FAILED (tunnel.at:936)

## ----- ##
## Test results. ##
## ----- ##

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In summary ...

- Enables easy and iterative development process
- Enables Test Driven Development model
- OVS Documentation
 - <https://docs.openvswitch.org/en/latest/topics/testing/?highlight=testing#testing>