Openvswitch Cheat Sheet

4 minute read

Look up the table

```
ovs-vsctl list bridge ovs-br
```

About Bridge and Port

OpenVswitch	About Bridge and Port
Add Bridge	`ovs-vsctl add-br ovs-br`
Corresponds to the interface on ovs-br	`ovs-vsctl add-port ovs-br eth0`
(1) + (2) can be written	`ovs-vsctl add-br ovs-br -- add-port ovs-br eth0`
Remove Bridge	`ovs-vsctl del-br ovs-br` # If it does not exist, there will be error log `ovs-vsctl --if-exists del-br ovs-br`
Change the ofport (openflow port number) to 100	`ovs-vsctl add-port ovs-br eth0 -- set Interface eth0 ofport_request=100`
Set the port to internal	`ovs-vsctl set Interface eth0 type=internal`

About the Controller

OpenVswitch	About the Controller
Set the Controller	`ovs-vsctl set-controller ovs-br tcp:1.2.3.4:6633`
Set the multi controller	`ovs-vsctl set-controller ovs-br tcp:1.2.3.4:6633 tcp:5.6.7.8:6633`
Query the Controller settings	`ovs-vsctl show`
If you have successfully connected to the controller appears is_connected:true , otherwise not connected	`ovs-vsctl get-controller ovs-br`
Remove the Controller	`ovs-vsctl del-controller ovs-br`

About STP (Spanning Tree Protocol)

OpenVswitch	About STP
Enable STP	`ovs-vsctl set bridge ovs-br stp_enable=true`
Turn off STP	`ovs-vsctl set bridge ovs-br stp_enable=false`

OpenVswitch	About STP
Query STP settings	`ovs-vsctl get bridge ovs-br stp_enable`
Set Priority	`ovs-vsctl set bridge br0 other_config:stp-priority=0x7800`
Set Cost	`ovs-vsctl set port eth0 other_config:stp-path-cost=10`
Remove the STP settings	`ovs-vsctl clear bridge ovs-br other_config`

About Openflow Version

OpenVswitch	About Openflow Version
OpenFlow Version 1.3 is supported	`ovs-vsctl set bridge ovs-br protocols=OpenFlow13`
Support OpenFlow Version 1.3 1.2	`ovs-vsctl set bridge ovs-br protocols=OpenFlow12,OpenFlow13`
Remove the OpenFlow support settings	`ovs-vsctl clear bridge ovs-br protocols`

VLAN

OpenVswitch	About VLAN
Set the VLAN tag	`ovs-vsctl add-port ovs-br vlan3 tag=3 -- set interface vlan3 type=internal`
Remove the VLAN	`ovs-vsctl del-port ovs-br vlan3`
Query the VLAN	`ovs-vsctl show` `ifconfig vlan3`
Set the Vlan trunk	`ovs-vsctl add-port ovs-br eth0 trunk=3,4,5,6`
Set the add port to access port, vlan id 9	`ovs-vsctl set port eth0 tag=9`
Ovs-ofctl add-flow Set vlan 100	`ovs-ofctl add-flow ovs-br in_port=1,dl_vlan=0xffff,actions=mod_vlan_vid:100,output:3` `ovs-ofctl add-flow ovs-br in_port=1,dl_vlan=0xffff,actions=push_vlan:0x8100,set_field:100-\>vlan_vid,output:3`
Ovs-ofctl add-flow Remove the vlan tag	`ovs-ofctl add-flow ovs1 in_port=3,dl_vlan=100,actions=strip_vlan,output:1`
Two_vlan example	`ovs-ofctl add-flow pop-vlan` `ovs-ofctl add-flow ovs-br in_port=3,dl_vlan=0xffff,actions=pop_vlan,output:1`

About GRE tunnels

OpenVswitch	About GRE
Set the GRE tunnel	`ovs-vsctl add-port ovs-br ovs-gre -- set interface ovs-gre type=gre options:remote_ip=1.2.3.4`
Check the GRE tunnel	`ovs-vsctl show`

About Dump flows

OpenVswitch	About Dump flows
Dumps OpenFlow flows do not contain hidden flows (common)	`ovs-ofctl dump-flows ovs-br`
Dumps OpenFlow flows contain hidden flows	`ovs-appctl bridge/dump-flows ovs-br`
Dump specific bridge of the datapath flows regardless of any type	`ovs-appctl dpif/dump-flows ovs-br`
Dump in the Linux kernel in the datapath flow table (commonly used)	`ovs-dpctl dump-flows [dp]`
Top like behavior for ovs-dpctl dump-flows	`ovs-dpctl-top`

XenServer starts OpenvSwitch mode

OpenVswitch	XenServer
Check whether it is on or not	`service openvswitch status`
Openv	`xe-switch-network-backend openvswitch`
shut down	`xe-switch-network-backend bridge`

About Log

OpenVswitch	About Log
Query log level list	`ovs-appctl vlog/list`
Set the log level (to stp set dbg level file as an example)	`ovs-appctl vlog/set stp:file:dbg` `ovs-appctl vlog/set {module name}:{console, syslog, file}:{off, emer, err, warn, info, dbg}`

About Fallback

OpenVswitch	About Fallback
Controller connection: false, will be automatically transferred into the legacy switch mode	`ovs-vsctl set-fail-mode ovs-br standalone`
Regardless of the Controller connection status why, must be carried out through OpenFlow network behavior (default)	`ovs-vsctl set-fail-mode ovs-br secure`
Remove	`ovs-vsctl del-fail-mode ovs-br`
Inquire	`ovs-vsctl get-fail-mode ovs-br`

About sFlow

OpenVswitch	About sFlow

OpenVswitch	About sFlow
Inquire	`ovs-vsctl list sflow`
New	`set sFlow`
delete	`ovs-vsctl -- clear Bridge ovs-br sflow`

About NetFlow

OpenVswitch	About NetFlow
Inquire	`ovs-vsctl list netflow`
New	`Set NetFlow`
Delete	`ovs-vsctl -- clear Bridge ovs-br netflow`

Set the Out-of-band and in-band

OpenVswitch	Set the Out-of-band and in-band
Inquire	`ovs-vsctl get controller ovs-br connection-mode`
Out-of-band	`ovs-vsctl set controller ovs-br connection-mode=out-of-band`
In-band (default)	`ovs-vsctl set controller ovs-br connection-mode=in-band`
Remove the hidden flow	`ovs-vsctl set bridge br0 other-config:disable-in-band=true`

About ssl

OpenVswitch	About SSL
Inquire	`ovs-vsctl get-ssl`
set up	`ovs-vsctl set-ssl sc-privkey.pem sc-cert.pem cacert.pem`
delete	`ovs-vsctl del-ssl`

About SPAN

OpenVswitch	About SPAN

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Detailed settings	`ovs-vsctl add-br ovs-br`
	`ovs-vsctl add-port ovs-br eth0`
	`ovs-vsctl add-port ovs-br eth1`
	`ovs-vsctl add-port ovs-br tap0 \`
	`- --id = @ p get port tap0 \`
	`- - id = @m create mirror name = m0 select-all = true output-port = @ p \`
	`- set bridge ovs-br mirrors = @ m`

Add	`ovs-br on add-port {eth0, eth1} mirror to tap0`
delete	`ovs-vsctl clear bridge ovs-br mirrors # About Table`
Check the Table	`ovs-ofctl dump-tables ovs-br`

About VXLAN

Reference rascov - Bridge Remote Mininets using VXLAN

OpenVswitch	About VxLAN
Establish the VXLAN Network ID (VNI) and the specified OpenFlow port number, eg: VNI = 5566, OF_PORT = 9	`ovs-vsctl set interface vxlan type=vxlan option:remote_ip=xxxx option:key=5566 ofport_request=9`
VNI flow by flow	`ovs-vsctl set interface vxlan type=vxlan option:remote_ip=140.113.215.200 option:key=flow ofport_request=9`
Set the VXLAN tunnel id	`ovs-ofctl add-flow ovs-br in_port=1,actions=set_field:5566->tun id.output:2` `ovs-ofctl add-flow s1 in_port=2,tun_id=5566,actions=output:1`

About OVSDB Manager

Reference OVSDB Integration: Mininet OVSDB Tutorial

OpenVswitch	About OVSDB
Active Listener settings	`ovs-vsctl set-manager tcp:1.2.3.4:6640`
Passive Listener settings	`ovs-vsctl set-manager ptcp:6640`

OpenFlow Trace

OpenVswitch	About OpenFlow Trace
Generate pakcet trace	`ovs-appctl ofproto/trace ovs-br in_port=1,dl_src=00:00:00:00:00:01,dl_dst=00:00:00:00:00:02 -generate`

Other

OpenVswitch	Others
Query the OpenvSwitch version	`ovs-ofctl -V`
Query the history of the next instruction	`ovsdb-tool show-log [-mmm]`

Reference

- Ovs-vsctl
- OpenvSwitch FAQ
- OpenvSwitch Debugging
- Network flow monitoring with Open vSwitch
- Pica8 OpenvSwitch configuration
- Hwchiu - Multipath routing with Group table at mininet
- Rascov - Bridge Remote Mininets using VXLAN
- OpenFlow Practice Based on Open vSwitch (Chen Shaq)
- OpenVswitch Advanced Tutioral