1). How to setup OF-DPA switch:

Note: Connect serviceport to LAN to get ip address by DHCP.

U-Boot 2010.12 (May 14 2014 - 10:34:12) - ONIE 2013.11.01-7950469
CPU0:   P2020, Version: 2.1, (0x80e20021)
Core: E500, Version: 5.1, (0x80211051)
Clock Configuration:
          CPU0:1200 MHz, CPU1:1200 MHz,
          CCB:600   MHz,
          DDR:400   MHz (800 MT/s data rate) (Asynchronous), LBC:37.500 MHz
L1:   D-cache 32 kB enabled
          I-cache 32 kB enabled
Board: Quanta LY2R P2020, Rev A
I2C: ready
DRAM: Detected UDIMM 78.A2GC9.AF0
Detected UDIMM(s)
DDR: 2 GiB (DDR3, 64-bit, CL=6, ECC off)
SD/MMC : 4-bit Mode
FLASH: 128 MiB
L2:   512 KB enabled
MMC: FSL_ESDHC: 0

LY2R U-Boot
   Product Name   : LY2R
   Model Name   : QUANTA LY2R
   Serial Number   : QTFATZ25200004
   Part Number   : 1LY2BZZ000M
   Label Revision Number : 1
   Hardware Version   : 0.1
   Platform Version   : 0xf2f1
   Release Date   : 2013/3/19
   MAC Address   : 08:9e:01:53:78:3d
Set ethaddr MAC address = 08:9e:01:53:78:3d
PCIe1: Root Complex of Slot 1, x2, regs @ 0xffe0a000
   01:00.0   - 14e4:b846 - Network controller
PCIe1: Bus 00 - 01
In: serial
Out: serial

Err: serial

Net: eTSEC1: PHY is Broadcom BCM5461S (2060c1)

eTSEC1

Hit any key to stop autoboot: 0

JFFS2 loading 'quanta_qcp2020_uImage' to 0x1000000

Scanning JFFS2 FS: . done.

JFFS2 load complete: 17467984 bytes loaded to 0x1000000

WARNING: adjusting available memory to 30000000

Booting kernel from Legacy Image at 01000000 ...

    Image Name:

    Image Type: PowerPC Linux Multi-File Image (gzip compressed)

    Data Size: 17467920 Bytes = 16.7 MiB

    Load Address: 00000000

    Entry Point: 00000000

    Contents:

        Image 0: 2526484 Bytes = 2.4 MiB

        Image 1: 1276294 Bytes = 1.2 MiB

        Image 2: 8109 Bytes = 7.9 KiB

        Image 3: 13657008 Bytes = 13 MiB

    Verifying Checksum ... OK

Loading init Ramdisk from multi component Legacy Image at 01000000 ...

Flattened Device Tree from multi component Image at 01000000

    Booting using the fdt at 0x13a06f0

    Uncompressing Multi-File Image ... OK

    Loading Ramdisk to 2fec8000, end 2ffff986 ... OK

    Loading Device Tree to 03ffb000, end 03ffffac ... OK

Using P2020 QC machine description

Memory CAM mapping: 256/256/256 Mb, residual: 1280Mb

Initializing cgroup subsys cpuset

Initializing cgroup subsys cpu

Linux version 2.6.34.6 (root@sw2-tropos) (gcc version 4.6.2 (Broadcom Linux BRL 2.0.1)) #1 SMP PREEMPT Tue May 20 13:29:56 CST 2014

Found initrd at 0xefec8000:0xeffff986

CPU maps initialized for 1 thread per core

bootconsole [udbg0] enabled

setup_arch: bootmem

mpc85xx_ds_setup_arch()

Found FSL PCI host bridge at 0x00000000ffe0a000. Firmware bus number: 0->1

PCI host bridge /pcie@ffe0a000   ranges:
  MEM 0x00000000c0000000..0x00000000dfffffff -> 0x00000000c0000000
   IO 0x00000000ffc20000..0x00000000ffc2ffff -> 0x0000000000000000
/pcie@ffe0a000: PCICSRBAR @ 0xfff00000
arch: exit

starting pid 850, tty '': '/etc/init.d/rcS'
starting pid 972, tty '/dev/ttyS0': '/etc/rc.d/rc.qcp2020'
Mounting /dev/mtdblock0 at /mnt/fastpath.
Mounting tmpfs at /mnt/application...done.
udhcpc (v1.20.2) started
Setting IP address 0.0.0.0 on eth0
Sending discover...
Sending select for 172.16.1.166...
Lease of 172.16.1.166 obtained, lease time 172800
Setting IP address 172.16.1.166 on eth0
Deleting routers
route: SIOCDELRT: No such process
Adding router 172.16.1.254
Recreating /etc/resolv.conf
  Adding DNS server 10.243.16.11
  Adding DNS server 10.243.17.11
QCP2020 uimage Rev: 1.0
Extracting application from image...

    Select startup mode.   If no selection is made within 5 seconds
    the ofagentapp will start in listening state...

    Startup -- Main Menu

    1 - Start ofagentapp and connect to ryu controller.
    2 - Start ofagentapp in listening state.
    3 - Start ofagent connect to ryu controller and start ofdpa.
    4 - Start linux shell.
Select (1, 2, 3, 4): **3**
Input controller ip, or just press Enter to use 172.16.1.152. IP: **172.16.1.152**
Input controller port, or just press Enter to use 6633. Port: **6633**
Save changes? Press(Y/N): y

Initialize /mnt/application/ofdpa...
Waiting for initialization...

linux_kernel_bde: module license 'Proprietary' taints kernel.
Disabling lock debugging due to kernel taint
linux-kernel-bde (1018): Payload size of 256 bytes may not be supported by all PCIe bridges by default.
Initialization is OK

Starting connect /mnt/application/ofagent -t 172.16.1.152:6633 to the controller...

(none) login: **root**
Password: **root123**

Quanta Computer lnc.
login[972]: root login on 'ttyS0'
#

2). How to check flow table:

Use RYU controller to send flow to switch first, and the content of script is as below.
root@RYU:~# cd OFDPA_TE_quanta/
root@RYU:~/OFDPA_TE_quanta# ryu-manager ofdpa_te.py

Example script:
{
    "working_set":
        [
        "te_add_vlan_1.json",
        "te_add_vlan_3.json",

        "te_add_vlan_1_untag.json",
        "te_add_vlan_3_untag.json",

        "te_add_group_l2_0xa0002.json",
        "te_add_group_l2_0xa0004.json",

```
                "te_add_acl_1.json",
                "te_add_acl_3.json"
                ]
}
```

a. **Show VLAN table:**

   # cd /mnt/application/

   # ./client_vlan   --count=5 list

   Listing up to 5 VLAN flows.

   Flow number 1.

                  VLANID   = 0
                  VLANIDMASK = fff
                  INTERFACE   = 1
                  GO TABLE   = 20
                  NEW VLAN   = 10
   Flow number 2.

                  VLANID   = 100a
                  VLANIDMASK = 1fff
                  INTERFACE   = 1
                  GO TABLE   = 20
                  NEW VLAN   = 0
   Flow number 3.

                  VLANID   = 0
                  VLANIDMASK = fff
                  INTERFACE   = 3
                  GO TABLE   = 20
                  NEW VLAN   = 10
   Flow number 4.

                  VLANID   = 100a
                  VLANIDMASK = 1fff
                  INTERFACE   = 3
                  GO TABLE   = 20
                  NEW VLAN   = 0

   No more entries found.

   #

b. **Show Group table:**

 # ./client_group   list

Group Table List:

   groupId = 0xa0002 (L2 Interface, VLAN ID = 10, Port ID = 2)

   groupId = 0xa0004 (L2 Interface, VLAN ID = 10, Port ID = 4)

c. Show ACL table:

./client_acl --count=5 list

Listing up to 5 Policy ACL flows.

Flow number 1.

  Priority   = 0

  Interface   = 1

  VLAN ID   = 10

  Ethertype   = 0x1989

  Idle Time   = 0

 Actions:

  Set output group ID = 0x a0002

  Set CoS queue = 1

Flow number 2.

  Priority   = 0

  Interface   = 3

  VLAN ID   = 10

  Ethertype   = 0x1989

  Idle Time   = 0

 Actions:

  Set output group ID = 0x a0004

  Set CoS queue = 1

No more entries found.