

2023年12月21日交换机实验-测试

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1. 交换机的连接

- 串口连接
 - 白色交换机：（波特率）9600
 - 黑色交换机：115200
- ssh远程连接
 - ssh root@192.168.1.209
 - 密码：onl

2. 进入外存or内存

```
▼ Shell |
1 root@bmc:~# sol.sh
```

3. 设置环境变量

```
1 source set_sde.bash
```

其中 set_sde.bash 文件为：

```
1 root@localhost:~/bf-sde-9.2.0# cat set_sde.bash
2 export SDE=/root/bf-sde-9.2.0
3 export SDE_INSTALL=/root/bf-sde-9.2.0/install
4 export PATH=$PATH:$SDE_INSTALL/bin
```

```
1 root@localhost:~ # cd bf-sde-9.5.2/
2 root@localhost:~/bf-sde-9.5.2 # ls
3 bf_drivers.log      CMakeCache.txt      pkgsrc
4 bf_drivers.log.0    CMakeFiles          README
5 bf_drivers.log.1    CMakeLists.txt      run_bfshell.sh
6 bf_drivers.log.2    extract_all.sh       run_p4_tests.sh
7 bf_drivers.log.3    install              run_switchd.sh
8 bf_drivers.log.4    install.bk           run_tofino_model.sh
9 bf-p4c-prefix       logs                 set_sde.bash
10 bf-p4i-prefix       p4_build.sh          simple_l3.p4
11 bf-p4o-prefix       p4runtime_update_config.py  tools
12 bf-sde-9.5.2.manifest p4studio             zlog-cfg-cur
13 build               p4studio_build
14 cmake               packages
15 root@localhost:~/bf-sde-9.5.2 # . set_sde.bash
16 Using bf-sde-9.5.2 in /root/bf-sde-9.5.2
17
18
```

4. 编译P4程序

```
1 ./p4_build.sh <path-to-p4src.p4>
```

`${SDE}=/root/bf-sde-9.5.2`

```
1 root@localhost:~ # $SDE/p4_build.sh simple_port.p4
2 Using SDE /root/bf-sde-9.5.2
3 Using SDE_INSTALL /root/bf-sde-9.5.2/install
4 Using SDE version bf-sde-9.5.2
5
6 OS Name: "Open Network Linux OS ONL-onf-ONLPv2, 2021-10-27.19
7 This system has 8GB of RAM and 8 CPU(s)
8 Parallelization: Recommended: -j4 Actual: -j4
9
10 Compiling for p4_16/tna
11 P4 compiler path: /root/bf-sde-9.5.2/install/bin/bf-p4c
12 P4 compiler version: 9.5.2 (SHA: 640ad11) (p4c-based)
13 Build Dir: /root/bf-sde-9.5.2/build/p4-build/simple_port
14 Logs Dir: /root/bf-sde-9.5.2/logs/p4-build/simple_port
15
16 Building simple_port CLEAR CONFIGURE MAKE INSTALL ... DONE
17
```

5. 运行P4可执行文件

```
1 root@localhost:~ # $SDE/run_switchd.sh -p simple_port
```

6. 进入pm配置端口，显示端口信息

启动ucli

```
1 bfshell> ucli
2 Starting UCLI from bf-shell
3 Cannot read termcap database;
4 using dumb terminal settings.
5 bf-sde>
6
```

进入pm表

Shell

[illegible]

7. 添加端口，并使能端口

Shell

[illegible]

8. 退出pm进入bfrt配置配置流表?

```
1  bf-sde.pm> exit
2  bfshell>
```

```
1  bfshell>
2  bfshell> bfrt_python
3  cwd : /root/bf-sde-9.2.0
4
5  We've found 1 p4 programs:
6  simple_l3_mcast
7
8  Loading the tables ...
9
10
11 Python 3.4.8+ (default, Aug 10 2022, 16:47:50)
12 Type 'copyright', 'credits' or 'license' for more information
13 IPython 6.5.0.dev -- An enhanced Interactive Python. Type '?' for help.
14
15 bfrt_root>
```

```
1  bfrt_root>bfrt
2  -----> bfrt()
3  Available symbols:
4  dump                - Command
5  info                - Command
6  mirror              - Node
7  pktgen              - Node
8  port                - Node
9  pre                 - Node
10 simple_port         - Node
11 tf1                 - Node
12
13
14 bfrt>
15
16 bfrt>
17
18 bfrt> simple_port
19 ----> simple_port()
20 Available symbols:
21 dump                - Command
22 info                - Command
23 pipe                - Node
24
25
26 bfrt.simple_port>
27
28 bfrt.simple_port> pipe
29 -----> pipe()
30 Available symbols:
31 Ingress              - Node
32 IngressParser        - Node
33 dump                 - Command
34 info                 - Command
35 snapshot             - Node
36
37
38 bfrt.simple_port.pipe> Ingress
39 -----> Ingress()
40 Available symbols:
41 dump                 - Command
42 info                 - Command
43 send_t               - Table
44
45
```

```

46 bfrt.simple_port.pipe.Ingress> send_t
47 -----> send_t()
48 BF Runtime CLI Object for pipe.Ingress.send_t table
49
50 Key fields:
51   ig_intr_md.ingress_port          type=EXACT      size=9
52
53
54 Actions, Data fields:
55   NoAction (DefaultOnly)
56     0 data fields:
57   Ingress.send
58     1 data fields:
59     port                            type=BYTE_STREAM size=9
60
61
62 Available Commands:
63   add_from_json
64   add_with_send
65   clear
66   delete
67   dump
68   entry_with_send
69   get
70   get_default
71   get_handle
72   get_key
73   info
74   mod_with_send
75   reset_default
76   set_default_with_NoAction
77   set_default_with_send
78   symmetric_mode_get
79   symmetric_mode_set
80
81 bfrt.simple_port.pipe.Ingress.send_t> add_with_send?
82 Signature: add_with_send(ingress_port=None, port=None, pipe=None, gress_d
83   ir=None,
84   Docstring:
85   Add entry to send_t table with action: Ingress.send
86
87 Parameters:
88   ingress_port          type=EXACT      size=9  default=0
89   port                  type=BYTE_STREAM size=9  default=0
90   File:                 Dynamically generated function. No source code available.
91   Type:                 method
92

```

```

93  bfrt.simple_port.pipe.Ingress.send_t>
94
95  bfrt.simple_port.pipe.Ingress.send_t>
96
97  bfrt.simple_port.pipe.Ingress.send_t> add_with_send(132, 140)
98
99  bfrt.simple_port.pipe.Ingress.send_t> dump
100 -----> dump()
101 ----- send_t Dump Start -----
102 Default Entry:
103 Entry data (action : NoAction):
104
105 Entry 0:
106 Entry key:
107     ig_intr_md.ingress_port      : 0x84
108 Entry data (action : Ingress.send):
109     port                          : 0x8C
110
111 ----- send_t Dump End -----
112
113
114 bfrt.simple_port.pipe.Ingress.send_t> exitf_rt cli exited normally.
115 [42D
116 bfshell>
117 bfshell>
118 bfshell>
119 bfshell> exit
120

```

9. 原始调试日志

9

[illegible]

[illegible]

[illegible]

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```

28 such file or dirusb0: MAC 02:00:00:00:00:01
29 ectory
30 /etc/rcSusb0: HOST MAC 02:00:00:00:00:02
31 .d/S90sensor-setg_cdc gadget: CDC Composite Gadget, version: King Kameham
32 eha Day 2008
33 up.sh: line 50: g_cdc gadget: g_cdc ready
34 /sys/devices/plavhub: driver registered, port on!
35 tform/ast_adc.0/adc7_en: No such file or directory
36 INIT: Entering runlevel: 5
37 fand: system watchdog started.

Configuring network interfaces... warning: dhc6: can't open supervise/con
38 trol: No such file or directory
39 : eth0:ftgmac100_open
40 : eth0:ftgmac100_reset, phyAddr=0x18, miiPhyId=0x0362_5d12
41 NET: Registered protocol family 10
42 warning: dhc6: can't open supervise/control: No such file or directory
43 net.ipv6.conf.usb0.autoconf = 0
44 net.ipv6.conf.usb0.router_solicitations = 0
45 ADDRCONF(NETDEV_UP): usb0: link is not ready
46 warning: dhc6: can't open supervise/control: No such file or directory
47 done.
48 Setup dhclient for IPv6... done.
49 Starting OpenBSD Secure Shell server: sshd
50 done.
51 Starting ntpd: done
52 starting rsyslogd ... done
53 ok: run: psumuxmon: (pid 1749) 0s
54 ok: run: restapi: (pid 1753) 0s
55 ok: run: restwatchdog: (pid 1757) 1s
56 Setting up Spatula: done.
57 Starting Trusted Computing daemon:
58 tcspd.
59
60 OpenBMC Release 1.0.0.12
61
62 bmc login: eth0: no IPv6 routers present
63
64 OpenBMC Release 1.0.0.12
65
66 bmc login: g_cdc gadget: high speed config #1: CDC Composite (ECM + ACM)
67
68 OpenBMC Release 1.0.0.12
69
70 bmc login: root
71 Password:
72 root@bmc:~#
73 root@bmc:~#

```

```

74 root@bmc:~#
   root@bmc:~# sol.switching COMe uart to BMC UART

                                     g_cdc gadget: high speed config #1:
75 CDC Composite (ECM + ACM)
76 ADDRCONF(NETDEV_CHANGE): usb0: link becomes ready
77
78 root@bmc:~#
79 root@bmc:~#
80 root@bmc:~# sol.sh
81 You are in SOL session.
82 Use ctrl-x to quit.
83 -----
84
85 0if%-¼cJ¹qi撰µ5R' ¢L.835470] EXT4-fs (sda7): re-mounted. Opts: data=order
86 ed
87 DEBUG:swimount:++ mount -o rw,remount /mnt/onl/data
88 Switching rootfsXshellumount: can't umount /sys/firmware/efi/efivars: Inv
89 alid argument
90 modprobe: chdir(4.14.49-OpenNetworkLinux): No such file or directory
91 2023-12-21 11:21:09.572 INFO    system-upgrade: *****
92 *****
93 2023-12-21 11:21:09.572 INFO    system-upgrade: * System Compatibility Ver
94 sion Check
95 2023-12-21 11:21:09.572 INFO    system-upgrade: *****
96 *****
97 2023-12-21 11:21:09.572 INFO    system-upgrade:
98 2023-12-21 11:21:09.573 INFO    system-upgrade: Current System Compatibili
99 ty Version: 2
100 2023-12-21 11:21:09.573 INFO    system-upgrade:      Next System Compatibili
101 ty Version: 2
102 2023-12-21 11:21:09.573 INFO    system-upgrade:
103 2023-12-21 11:21:09.573 INFO    system-upgrade: System version 2 is curren
104 t.
2023-12-21 11:21:09.573 INFO    system-upgrade:
2023-12-21 11:21:09.573 INFO    system-upgrade: *****
*****
2023-12-21 11:21:09.996 INFO    loader-upgrade: *****
*****
2023-12-21 11:21:09.996 INFO    loader-upgrade: * Loader Upgrade Check
2023-12-21 11:21:09.996 INFO    loader-upgrade: *****
*****
2023-12-21 11:21:09.996 INFO    loader-upgrade:
2023-12-21 11:21:09.997 INFO    loader-upgrade: Current Loader [ 13.1885
32] igb 0000:02:00.0 ma1: igb: ma1 NIC Link is Up 1000 Mbps Full Duplex,
Flow Control: RX/TX
Version: ONL-onf[ 13.209535] IPv6: ADDRCONF(NETDEV_CHANGE): ma1: link b
ecomes ready

```

```

1105 -ONLPv2,2021-10-27.19:46-5fddf0a
1106 2023-12-21 11:21:09.997 INFO loader-upgrade: Next Loader Version: ON
1107 L-onf-ONLPv2,2021-10-27.19:46-5fddf0a
1108 2023-12-21 11:21:09.997 INFO loader-upgrade:
1109 2023-12-21 11:21:09.997 INFO loader-upgrade: Loader version ONL-onf-ONL
1110 Pv2,2021-10-27.19:46-5fddf0a is current.
1111 2023-12-21 11:21:09.997 INFO loader-upgrade:
1112 2023-12-21 11:21:09.997 INFO loader-upgrade: *****
1113 *****
1114 Mounting filesystems.....[ 13.490661] EXT4-fs (sda6): mounted filesystem
1115 with ordered data mode. Opts: (null)
1116 [ 13.532947] EXT4-fs (sda4): mounted filesystem with ordered data mode. Opts: (null)
1117 [ 13.561013] EXT4-fs (sda5): mounted filesystem with ordered data mode. Opts: (null)
1118 done.
1119 Setting up base ONL platform configuration for x86-64-accton-wed[ 13.78
1120 8103] optoe: loading out-of-tree module taints kernel.
1121 ge100bf-32x-r0...
1122 *** # SMBIOS [ 13.805458] i2c i2c-1: Added multiplexed i2c bus 2
1123 implementations [ 13.816859] i2c i2c-1: Added multiplexed i2c bus 3
1124 newer than version [ 13.829222] i2c i2c-1: Added multiplexed i2c bus 4
1125 on 2.7 are not
1126 [ 13.841561] i2c i2c-1: Added multiplexed i2c bus 5
1127 *** # fully supported by this version of dmidecode [ 13.853958] i2c i2c-1: Added multiplexed i2c bus 6
1128 [ 13.866330] i2c i2c-1: Added multiplexed i2c bus 7
1129 [ 13.878703] i2c i2c-1: Added multiplexed i2c bus 8
1130 de.
1131 ***
1132 [ 13.891086] i2c i2c-1: Added multiplexed i2c bus 9
1133 [ 13.902467] pca954x 1-0070: registered 8 multiplexed busses for I2C switch pca9548
1134 [ 13.917629] i2c i2c-1: new_device: Instantiated device pca9548 at 0x70
1135 [ 13.933454] i2c i2c-1: Added multiplexed i2c bus 10
1136 [ 13.943318] i2c i2c-1: Added multiplexed i2c bus 11
1137 [ 13.953195] i2c i2c-1: Added multiplexed i2c bus 12
1138 [ 13.963059] i2c i2c-1: Added multiplexed i2c bus 13
1139 [ 13.972912] i2c i2c-1: Added multiplexed i2c bus 14
1140 [ 13.982761] i2c i2c-1: Added multiplexed i2c bus 15
1141 [ 13.992614] i2c i2c-1: Added multiplexed i2c bus 16
1142 [ 14.002465] i2c i2c-1: Added multiplexed i2c bus 17
1143 [ 14.012232] pca954x 1-0071: registered 8 multiplexed busses for I2C switch pca9548
1144 [ 14.027394] i2c i2c-1: new_device: Instantiated device pca9548 at 0x71
1145 [ 14.043439] i2c i2c-1: Added multiplexed i2c bus 18
1146 [ 14.053307] i2c i2c-1: Added multiplexed i2c bus 19
1147 [ 14.063167] i2c i2c-1: Added multiplexed i2c bus 20
1148 [ 14.073023] i2c i2c-1: Added multiplexed i2c bus 21

```



```

144 [ 14.082903] i2c i2c-1: Added multiplexed i2c bus 22
145 [ 14.092768] i2c i2c-1: Added multiplexed i2c bus 23
146 [ 14.102631] i2c i2c-1: Added multiplexed i2c bus 24
147 [ 14.112484] i2c i2c-1: Added multiplexed i2c bus 25
    [ 14.122247] pca954x 1-0072: registered 8 multiplexed busses for I2C sw
148 itch pca9548
149 [ 14.137409] i2c i2c-1: new_device: Instantiated device pca9548 at 0x72
150 [ 14.153444] i2c i2c-1: Added multiplexed i2c bus 26
151 [ 14.163314] i2c i2c-1: Added multiplexed i2c bus 27
152 [ 14.173173] i2c i2c-1: Added multiplexed i2c bus 28
153 [ 14.183029] i2c i2c-1: Added multiplexed i2c bus 29
154 [ 14.192885] i2c i2c-1: Added multiplexed i2c bus 30
155 [ 14.202751] i2c i2c-1: Added multiplexed i2c bus 31
156 [ 14.212616] i2c i2c-1: Added multiplexed i2c bus 32
157 [ 14.222469] i2c i2c-1: Added multiplexed i2c bus 33
    [ 14.232235] pca954x 1-0073: registered 8 multiplexed busses for I2C sw
158 itch pca9548
159 [ 14.247401] i2c i2c-1: new_device: Instantiated device pca9548 at 0x73
160 [ 14.263443] i2c i2c-1: Added multiplexed i2c bus 34
161 [ 14.273329] i2c i2c-1: Added multiplexed i2c bus 35
162 [ 14.283186] i2c i2c-1: Added multiplexed i2c bus 36
163 [ 14.293056] i2c i2c-1: Added multiplexed i2c bus 37
164 [ 14.302911] i2c i2c-1: Added multiplexed i2c bus 38
165 [ 14.312763] i2c i2c-1: Added multiplexed i2c bus 39
166 [ 14.322627] i2c i2c-1: Added multiplexed i2c bus 40
167 [ 14.332493] i2c i2c-1: Added multiplexed i2c bus 41
    [ 14.342256] pca954x 1-0074: registered 8 multiplexed busses for I2C sw
168 itch pca9548
169 [ 14.357423] i2c i2c-1: new_device: Instantiated device pca9548 at 0x74
    [ 14.381448] at24 40-0050: 8192 byte 24c64 EEPROM, writable, 1 bytes/wr
170 ite
171 [ 14.395090] i2c i2c-40: new_device: Instantiated device 24c64 at 0x50
172 [ 14.408126] optoe 2-0050: 32896 byte optoe1 EEPROM, read/write
173 [ 14.419815] i2c i2c-2: new_device: Instantiated device optoe1 at 0x50
174 [ 14.432810] optoe 3-0050: 32896 byte optoe1 EEPROM, read/write
175 [ 14.444501] i2c i2c-3: new_device: Instantiated device optoe1 at 0x50
176 [ 14.457478] optoe 4-0050: 32896 byte optoe1 EEPROM, read/write
177 [ 14.469165] i2c i2c-4: new_device: Instantiated device optoe1 at 0x50
178 [ 14.482138] optoe 5-0050: 32896 byte optoe1 EEPROM, read/write
179 [ 14.493837] i2c i2c-5: new_device: Instantiated device optoe1 at 0x50
180 [ 14.506814] optoe 6-0050: 32896 byte optoe1 EEPROM, read/write
181 [ 14.518504] i2c i2c-6: new_device: Instantiated device optoe1 at 0x50
182 [ 14.531476] optoe 7-0050: 32896 byte optoe1 EEPROM, read/write
183 [ 14.543166] i2c i2c-7: new_device: Instantiated device optoe1 at 0x50
184 [ 14.556149] optoe 8-0050: 32896 byte optoe1 EEPROM, read/write
185 [ 14.567841] i2c i2c-8: new_device: Instantiated device optoe1 at 0x50
186 [ 14.580819] optoe 9-0050: 32896 byte optoe1 EEPROM, read/write
187 [ 14.592508] i2c i2c-9: new_device: Instantiated device optoe1 at 0x50

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188 [ 14.605481] optoe 10-0050: 32896 byte optoe1 EEPROM, read/write
189 [ 14.617344] i2c i2c-10: new_device: Instantiated device optoe1 at 0x50
190 [ 14.630499] optoe 11-0050: 32896 byte optoe1 EEPROM, read/write
191 [ 14.642363] i2c i2c-11: new_device: Instantiated device optoe1 at 0x50
192 [ 14.655509] optoe 12-0050: 32896 byte optoe1 EEPROM, read/write
193 [ 14.667370] i2c i2c-12: new_device: Instantiated device optoe1 at 0x50
194 [ 14.680516] optoe 13-0050: 32896 byte optoe1 EEPROM, read/write
195 [ 14.692383] i2c i2c-13: new_device: Instantiated device optoe1 at 0x50
196 [ 14.705531] optoe 14-0050: 32896 byte optoe1 EEPROM, read/write
197 [ 14.717391] i2c i2c-14: new_device: Instantiated device optoe1 at 0x50
198 [ 14.730539] optoe 15-0050: 32896 byte optoe1 EEPROM, read/write
199 [ 14.742399] i2c i2c-15: new_device: Instantiated device optoe1 at 0x50
200 [ 14.755548] optoe 16-0050: 32896 byte optoe1 EEPROM, read/write
201 [ 14.767421] i2c i2c-16: new_device: Instantiated device optoe1 at 0x50
202 [ 14.780578] optoe 17-0050: 32896 byte optoe1 EEPROM, read/write
203 [ 14.792440] i2c i2c-17: new_device: Instantiated device optoe1 at 0x50
204 [ 14.805587] optoe 18-0050: 32896 byte optoe1 EEPROM, read/write
205 [ 14.817449] i2c i2c-18: new_device: Instantiated device optoe1 at 0x50
206 [ 14.830594] optoe 19-0050: 32896 byte optoe1 EEPROM, read/write
207 [ 14.842459] i2c i2c-19: new_device: Instantiated device optoe1 at 0x50
208 [ 14.855617] optoe 20-0050: 32896 byte optoe1 EEPROM, read/write
209 [ 14.867480] i2c i2c-20: new_device: Instantiated device optoe1 at 0x50
210 [ 14.880627] optoe 21-0050: 32896 byte optoe1 EEPROM, read/write
211 [ 14.892497] i2c i2c-21: new_device: Instantiated device optoe1 at 0x50
212 [ 14.905644] optoe 22-0050: 32896 byte optoe1 EEPROM, read/write
213 [ 14.917506] i2c i2c-22: new_device: Instantiated device optoe1 at 0x50
214 [ 14.930654] optoe 23-0050: 32896 byte optoe1 EEPROM, read/write
215 [ 14.942516] i2c i2c-23: new_device: Instantiated device optoe1 at 0x50
216 [ 14.955663] optoe 24-0050: 32896 byte optoe1 EEPROM, read/write
217 [ 14.967527] i2c i2c-24: new_device: Instantiated device optoe1 at 0x50
218 [ 14.980679] optoe 25-0050: 32896 byte optoe1 EEPROM, read/write
219 [ 14.992542] i2c i2c-25: new_device: Instantiated device optoe1 at 0x50
220 [ 15.005688] optoe 26-0050: 32896 byte optoe1 EEPROM, read/write
221 [ 15.017550] i2c i2c-26: new_device: Instantiated device optoe1 at 0x50
222 [ 15.030703] optoe 27-0050: 32896 byte optoe1 EEPROM, read/write
223 [ 15.042567] i2c i2c-27: new_device: Instantiated device optoe1 at 0x50
224 [ 15.055714] optoe 28-0050: 32896 byte optoe1 EEPROM, read/write
225 [ 15.067577] i2c i2c-28: new_device: Instantiated device optoe1 at 0x50
226 [ 15.080724] optoe 29-0050: 32896 byte optoe1 EEPROM, read/write
227 [ 15.092588] i2c i2c-29: new_device: Instantiated device optoe1 at 0x50
228 [ 15.105733] optoe 30-0050: 32896 byte optoe1 EEPROM, read/write
229 [ 15.117597] i2c i2c-30: new_device: Instantiated device optoe1 at 0x50
230 [ 15.130743] optoe 31-0050: 32896 byte optoe1 EEPROM, read/write
231 [ 15.142605] i2c i2c-31: new_device: Instantiated device optoe1 at 0x50
232 [ 15.155752] optoe 32-0050: 32896 byte optoe1 EEPROM, read/write
233 [ 15.167625] i2c i2c-32: new_device: Instantiated device optoe1 at 0x50
234 [ 15.180772] optoe 33-0050: 32896 byte optoe1 EEPROM, read/write
235 [ 15.192636] i2c i2c-33: new_device: Instantiated device optoe1 at 0x50

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236 [ 15.351535] cdc_ether 1-1.1.2:1.0 usb0: kevent 12 may have been droppe
d
237 [ 15.379108] cdc_ether 1-1.1.2:1.0 usb0: CDC: unexpected notification 1
d!
238 [ 17.756180] random: crng init done
239 Setting up base platform configuration for x86-64-accton-wedge100bf-32x-r
0: done
240 INFO:PKI:Using existing private key.
241 INFO:PKI:Using existing certificate.
242 2023-12-21 11:21:16.613 INFO onie-upgrade: *****
*****
243 2023-12-21 11:21:16.613 INFO onie-upgrade: * ONIE Upgrade Check
244 2023-12-21 11:21:16.613 INFO onie-upgrade: *****
*****
245 2023-12-21 11:21:16.613 INFO onie-upgrade:
246 2023-12-21 11:21:16.614 INFO onie-upgrade:
247 2023-12-21 11:21:16.614 INFO onie-upgrade: No ONIE updater available
for the current platform.
248 2023-12-21 11:21:16.614 INFO onie-upgrade:
249 2023-12-21 11:21:16.614 INFO onie-upgrade: *****
*****
250 2023-12-21 11:21:17.260 INFO firmware-upgrade: *****
*****
251 2023-12-21 11:21:17.261 INFO firmware-upgrade: * Firmware Upgrade Check
252 2023-12-21 11:21:17.261 INFO firmware-upgrade: *****
*****
253 2023-12-21 11:21:17.261 INFO firmware-upgrade:
254 2023-12-21 11:21:17.261 INFO firmware-upgrade:
255 2023-12-21 11:21:17.261 INFO firmware-upgrade: No Firmware updater availa
ble for the current platform.
256 2023-12-21 11:21:17.261 INFO firmware-upgrade:
257 2023-12-21 11:21:17.261 INFO firmware-upgrade: *****
*****
258 Starting systemd...
[ 21.804950] systemd[1]: systemd 232 running in system mode. (+PAM +AUD
IT +SELINUX +IMA +APPARMOR +SMACK +SYSVINIT +UTMP +LIBCRYPTSETUP +GCRYPT
259 +GNUTLS +ACL +XZ +LZ4 +SECCOMP +BLKID +ELFUTILS +KMOD +IDN)
260 [ 21.860613] systemd[1]: Detected architecture x86-64.
261
262 Welcome to Debian GNU/Linux 9 (stretch)!
263
264 [ 21.888284] systemd[1]: Set hostname to <localhost>.
[ 21.954596] systemd[1]: Set up automount Arbitrary Executable File For
265 mats File System Automount Point.
[ OK ] Set up automount Arbitrary Executab...rmats File System Automount
266 Point.
267 [ 21.996244] systemd[1]: Listening on RPCbind Server Activation Socket.
268 [ OK ] Listening on RPCbind Server Activation Socket.

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269 [ 22.033857] systemd[1]: Created slice User and Session Slice.
270 [ OK ] Created slice User and Session Slice.
271 [ 22.064197] systemd[1]: Listening on Journal Socket.
272 [ OK ] Listening on Journal Socket.
273 [ 22.092274] systemd[1]: Started Forward Password Requests to Wall Directory Watch.
274 [ OK ] Started Forward Password Requests to Wall Directory Watch.
275 [ 22.128076] systemd[1]: Reached target Swap.
276 [ OK ] Reached target Swap.
277 [ 22.152144] systemd[1]: Listening on Journal Socket (/dev/log).
278 [ OK ] Listening on Journal Socket (/dev/log).
279 [ OK ] Listening on udev Kernel Socket.
280 [ OK ] Listening on Syslog Socket.
281 [ OK ] Started Dispatch Password Requests to Console Directory Watch.
282 [ OK ] Reached target Paths.
283 [ OK ] Reached target Encrypted Volumes.
284 [ OK ] Listening on /dev/initctl Compatibility Named Pipe.
285 [ OK ] Listening on Journal Audit Socket.
286 [ OK ] Listening on udev Control Socket.
287 [ OK ] Created slice System Slice.
288 [ OK ] Reached target Slices.
289 [ OK ] Created slice system-getty.slice.
290 Starting Load Kernel Modules...
291 Starting Nameserver information manager...
292 Starting Remount Root and Kernel File Systems...
293 Starting Journal Service...
294 Mounting Debug File System...
295 Mounting POSIX Message Queue File System...
296 Mounting Huge Pages File System...
297 Starting Create Static Device Nodes in /dev...
298 [ OK ] Created slice system-serial\x2dgetty.slice.
299 Mounting RPC Pipe File System...
300 [ OK ] Mounted RPC Pipe File System.
301 [ OK ] Mounted Debug File System.
302 [ OK ] Mounted POSIX Message Queue File System.
303 [ OK ] Mounted Huge Pages File System.
304 [ OK ] Started Journal Service.
305 [FAILED] Failed to start Load Kernel Modules.
306 See 'systemctl status systemd-modules-load.service' for details.
307 [ OK ] Started Remount Root and Kernel File Systems.
308 [ OK ] Started Create Static Device Nodes in /dev.
309 [ OK ] Started Nameserver information manager.
310 Starting udev Kernel Device Manager...
311 Starting udev Coldplug all Devices...
312 Starting Load/Save Random Seed...
313 [ OK ] Reached target Local File Systems (Pre).
314 [ OK ] Reached target Local File Systems.
315 Starting Preprocess NFS configuration...

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316          Mounting Configuration File System...
317          Starting Apply Kernel Variables...
318          Starting Flush Journal to Persistent Storage...
319 [ OK ] Mounted Configuration File System.
320 [ OK ] Started udev Kernel Device Manager.
321 [ OK ] Started Load/Save Random Seed.
322 [ OK ] Started Preprocess NFS configuration.
323 [ OK ] Started Apply Kernel Variables.
324          Starting Raise network interfaces...
325 [ OK ] Reached target NFS client services.
326 [ OK ] Started udev Coldplug all Devices.
327 [ 23.129047] systemd-journald[2429]: Received request to flush runtime
journal from PID 1
328 [ OK ] Started Flush Journal to Persistent Storage.
329          Starting Create Volatile Files and Directories...
330 [ OK ] Started Create Volatile Files and Directories.
331          Starting RPC bind portmap service...
332 [ OK ] Reached target System Time Synchronized.
333          Starting Update UTMP about System Boot/Shutdown...
334 [ OK ] Started RPC bind portmap service.
335 [ OK ] Reached target RPC Port Mapper.
336 [ OK ] Reached target Remote File Systems (Pre).
337 [ OK ] Reached target Remote File Systems.
338 [ OK ] Started Update UTMP about System Boot/Shutdown.
339 [ OK ] Reached target System Initialization.
340 [ 23.415209] gpio_ich: GPIO from 428 to 503 on gpio_ich
341 [ OK ] Started Daily apt download activities.
342 [ OK ] Started Daily apt upgrade and clean activities.
343 [ OK ] Started Daily Cleanup of Temporary Directories.
344 [ OK ] Reached target Timers.
345          Starting Docker Socket for the API.
346 [ OK ] Listening on D-Bus System Message Bus Socket.
347 [ OK ] Listening on Docker Socket for the API.
348 [ OK ] Found device /dev/ttyS0.
349 [ OK ] Reached target Sockets.
350 [ OK ] Reached target Basic System.
351          Starting Internet superserver...
352 [ OK ] Started D-Bus System Message Bus.
353          Starting LSB: Start ONLP Platform Agent...
354          Starting System Logging Service...
355          Starting LSB: Start/stop sysstat's sadc...
356          Starting Login Service...
357 [ OK ] Started Self Monitoring and Reporting Technology (SMART) Daemon.
358          Starting LSB: Start Faultd Agent...
359          Starting LSB: Start ONLP SNMP Agent...
360 [ OK ] Started Internet superserver.
361 [ OK ] Started System Logging Service.
362 [ OK ] Started LSB: Start/stop sysstat's sadc.

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363 [ OK ] Started LSB: Start ONLP Platform Agent.
364 [ OK ] Started LSB: Start Faultd Agent.
365 [ OK ] Started LSB: Start ONLP SNMP Agent.
366 [ OK ] Started Login Service.
367 [FAILED] Failed to start Raise network interfaces.
368 See 'systemctl status networking.service' for details.
369 [ OK ] Reached target Network.
370     Starting Permit User Sessions...
371     Starting OpenBSD Secure Shell server...
372     Starting Fail2Ban Service...
373     Starting Simple Network Management Protocol (SNMP) Daemon....
374     Starting containerd container runtime...
375 [ OK ] Reached target Network is Online.
376     Starting LSB: Brings up/down network automatically...
377     Starting LSB: Start NTP daemon...
378 [ OK ] Started Permit User Sessions.
379 [ OK ] Started Simple Network Management Protocol (SNMP) Daemon..
380 [ OK ] Started OpenBSD Secure Shell server.
381 [ OK ] Started Serial Getty on ttyS0.
382 [ OK ] Started Getty on tty1.
383 [ OK ] Reached target Login Prompts.
384     Mounting Arbitrary Executable File Formats File System...
385 [ OK ] Mounted Arbitrary Executable File Formats File System.
386 [ OK ] Started LSB: Start NTP daemon.
387 [ OK ] Started LSB: Brings up/down network automatically.
388 [ OK ] Started containerd container runtime.
389     Starting Docker Application Container Engine...
390 [ OK ] Started Fail2Ban Service.
391 [ 25.658432] IPv6: ADDRCONF(NETDEV_UP): docker0: link is not ready
392 [ OK ] Started Docker Application Container Engine.
393 [ OK ] Reached target Multi-User System.
394     Starting watchdog daemon...
395 [ OK ] Started watchdog daemon.
396 [ OK ] Reached target Graphical Interface.
397     Starting Update UTMP about System Runlevel Changes...
398 [ OK ] Started Update UTMP about System Runlevel Changes.
399
400 Open Network Linux OS ONL-onf-ONLPv2, 2021-10-27.19:46-5fddf0a
401
402 localhost login: root
403 Password:
404 Last login: Wed Dec 20 14:10:24 UTC 2023 from 192.168.1.88 on pts/0
405 Linux localhost 4.14.49-OpenNetworkLinux #1 SMP Wed Oct 27 20:10:54 UTC 2
406 021 x86_64
407 [ 45.944202] bf device class created
408 [ 45.951194] Use MSI interrupt
409 [ 45.957209] bf 0000:05:00.0: enabling device (0100 -> 0102)

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409 [ 45.968464] pmd_set_huge: Cannot satisfy [mem 0xf4000000-0xf4200000] w
410 ith a huge-page mapping due to MTRR override.
411 [ 45.989535] BF allocating legacy int vector 11
412 [ 45.998457] bf 0000:05:00.0: bf device 0 registered with irq 11
413 [ 46.010312] bf probe ok
414 root@localhost:~ #
415 root@localhost:~ #
416 root@localhost:~ #
417 root@localhost:~ #
418 root@localhost:~ # ls
419 bf_drivers.log      bf_drivers.log.3  bf-p4o-prefix    multimodel_routing.p4
420 bf_drivers.log.0    bf_drivers.log.4  bf-sde-9.5.2     p4
421 bf_drivers.log.1    bf-p4c-prefix     CMakeCache.txt   simple_port.p4
422 bf_drivers.log.2    bf-p4i-prefix     CMakeFiles       zlog-cfg-cur
423 root@localhost:~ #
424 root@localhost:~ #
425 root@localhost:~ # cd bf-sde-9.5.2/
426 root@localhost:~/bf-sde-9.5.2 #
427 root@localhost:~/bf-sde-9.5.2 #
428 root@localhost:~/bf-sde-9.5.2 # ls
429 bf_drivers.log      CMakeCache.txt    pkgsrc
430 bf_drivers.log.0    CMakeFiles        README
431 bf_drivers.log.1    CMakeLists.txt    run_bfshell.sh
432 bf_drivers.log.2    extract_all.sh     run_p4_tests.sh
433 bf_drivers.log.3    install            run_switchd.sh
434 bf_drivers.log.4    install.bk         run_tofino_model.sh
435 bf-p4c-prefix       logs               set_sde.bash
436 bf-p4i-prefix       p4_build.sh        simple_l3.p4
437 bf-p4o-prefix       p4runtime_update_config.py  tools
438 bf-sde-9.5.2.manifest  p4studio          zlog-cfg-cur
439 build               p4studio_build
440 cmake               packages
441 root@localhost:~/bf-sde-9.5.2 #
442 root@localhost:~/bf-sde-9.5.2 # . set_sde.bash
443 Using bf-sde-9.5.2 in /root/bf-sde-9.5.2
444 root@localhost:~/bf-sde-9.5.2 #
445 root@localhost:~/bf-sde-9.5.2 #
446 root@localhost:~/bf-sde-9.5.2 #
447 root@localhost:~/bf-sde-9.5.2 # cd ..
448 root@localhost:~ # ls
449 bf_drivers.log      bf_drivers.log.3  bf-p4o-prefix    multimodel_routing.p4
450 bf_drivers.log.0    bf_drivers.log.4  bf-sde-9.5.2     p4
451 bf_drivers.log.1    bf-p4c-prefix     CMakeCache.txt   simple_port.p4
452 bf_drivers.log.2    bf-p4i-prefix     CMakeFiles       zlog-cfg-cur
453 root@localhost:~ #
454 root@localhost:~ #
455 root@localhost:~ #
456 root@localhost:~ # $SDE/p4_build.sh simple_port.p4

```

```

457 Using SDE /root/bf-sde-9.5.2
458 Using SDE_INSTALL /root/bf-sde-9.5.2/install
459 Using SDE version bf-sde-9.5.2
460
461 OS Name: "Open Network Linux OS ONL-onf-ONLPv2, 2021-10-27.19
462 This system has 8GB of RAM and 8 CPU(s)
463 Parallelization: Recommended: -j4 Actual: -j4
464
465 Compiling for p4_16/tna
466 P4 compiler path: /root/bf-sde-9.5.2/install/bin/bf-p4c
467 P4 compiler version: 9.5.2 (SHA: 640ad11) (p4c-based)
468 Build Dir: /root/bf-sde-9.5.2/build/p4-build/simple_port
469 Logs Dir: /root/bf-sde-9.5.2/logs/p4-build/simple_port
470
471 Building simple_port CLEAR CONFIGURE MAKE INSTALL ... DONE
472 root@localhost:~ #
473 root@localhost:~ #
474 root@localhost:~ #
475 root@localhost:~ # l
476 -bash: l: command not found
477 root@localhost:~ # ls
478 bf_drivers.log bf_drivers.log.3 bf-p4o-prefix multimodel_routing.p4
479 bf_drivers.log.0 bf_drivers.log.4 bf-sde-9.5.2 p4
480 bf_drivers.log.1 bf-p4c-prefix CMakeCache.txt simple_port.p4
481 bf_drivers.log.2 bf-p4i-prefix CMakeFiles zlog-cfg-cur
482 root@localhost:~ #
483 root@localhost:~ #
484 root@localhost:~ #
485 root@localhost:~ # $SDE/run_switchd.sh -p simple_port
486 Using SDE /root/bf-sde-9.5.2
487 Using SDE_INSTALL /root/bf-sde-9.5.2/install
488 Setting up DMA Memory Pool
489 Using TARGET_CONFIG_FILE /root/bf-sde-9.5.2/install/share/p4/targets/tofi
no/simple_port.conf
490 Using PATH /root/bf-sde-9.5.2/install/bin:/root/bf-sde-9.5.2/install/bi
n:/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/lib/platf
orm-config/current/onl/bin:/lib/platform-config/current/onl/sbin:/lib/pla
tform-config/current/onl/lib/bin:/lib/platform-config/current/onl/lib/sbi
n:/root/bf-sde-9.5.2/install/bin
491 Using LD_LIBRARY_PATH /usr/local/lib:/root/bf-sde-9.5.2/install/lib:
492 bf_sysfs_fname /sys/class/bf/bf0/device/dev_add
493 Install dir: /root/bf-sde-9.5.2/install (0x55c3e6b51b20)
494 bf_switchd: system services initialized
495 bf_switchd: loading conf_file /root/bf-sde-9.5.2/install/share/p4/target
s/tofino/simple_port.conf...
496 bf_switchd: processing device configuration...
497 Configuration for dev_id 0
498 Family : tofino

```



```

499 pci_sysfs_str : /sys/devices/pci0000:00/0000:00:03.0/0000:05:00.0
500 pci_domain    : 0
501 pci_bus       : 5
502 pci_fn        : 0
503 pci_dev       : 0
504 pci_int_mode  : 1
505 sbus_master_fw: /root/bf-sde-9.5.2/install/
506 pcie_fw       : /root/bf-sde-9.5.2/install/
507 serdes_fw     : /root/bf-sde-9.5.2/install/
508 sds_fw_path   : /root/bf-sde-9.5.2/install/share/tofino_sds_fw/avago/fi
509 rmware
510 microp_fw_path:
511 bf_switchd: processing P4 configuration...
512 P4 profile for dev_id 0
513 num P4 programs 1
514   p4_name: simple_port
515   p4_pipeline_name: pipe
516   libpd:
517     libpdthrift:
518       context: /root/bf-sde-9.5.2/install/share/tofinopd/simple_port/pipe/c
519       ontext.json
520       config: /root/bf-sde-9.5.2/install/share/tofinopd/simple_port/pipe/to
521       fino.bin
522       Pipes in scope [0 1 2 3 ]
523       diag:
524       accton diag:
525       Agent[0]: /root/bf-sde-9.5.2/install/lib/libpltfm_mgr.so
526       non_default_port_ppgs: 0
527       SAI default initialize: 1
528 bf_switchd: library /root/bf-sde-9.5.2/install/lib/libpltfm_mgr.so loaded
529 bf_switchd: agent[0] initialized
530 Health monitor started
531 Operational mode set to ASIC
532 Initialized the device types using platforms infra API
533 ASIC detected at PCI /sys/class/bf/bf0/device
534 ASIC pci device id is 16
535 Starting PD-API RPC server on port 9090
536 bf_switchd: drivers initialized
537 Setting core_pll_ctrl0=cd44cbfe
538 [ 196.734711] nf_conntrack: default automatic helper assignment has bee
539 n turned off for security reasons and CT-based firewall rule not found.
540 Use the iptables CT target to attach helpers instead.
541 -
542 bf_switchd: dev_id 0 initialized
543
544 bf_switchd: initialized 1 devices
545 Adding Thrift service for bf-platforms to server
546 bf_switchd: thrift initialized for agent : 0

```


[illegible]

