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PS8560

# SONiC 移植说明

拟制 \_\_\_\_\_

审核 \_\_\_\_\_

批准 \_\_\_\_\_



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## 修订记录

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## 1 概述

本文档用于指导客户自研SONic系统可适配我司的白盒交换机PS7350硬件。

PS8560是基于 Intel Tofino2系列的白盒交换机，支持P4可编程。主要应用于数据中心TOR(Top of Rack)交换机，以及Spine-Leaf 架构中的 Spine或Leaf交换机。通过P4可编程特性，可支持数据中心不同的网关应用场景。

## 2. 移植说明

### 2.1 设备适配

semptian目录下主要包括PS8560设备硬件相关的配置以及操作平台驱动的功能接口。

将文件中semptian目录放在sonic-buildimage/device/目录下

```
semptian@semptian-GCP1820-SS:~/sonic-buildimage.202012/device$ ls -al
总用量 104
drwxrwxr-x 26 semptian semptian 4096 7月 15 07:26 .
drwxrwxr-x 22 semptian semptian 4096 12月 24 21:17 ..
drwxrwxr-x 25 semptian semptian 4096 6月 19 2021 accton
drwxrwxr-x 4 semptian semptian 4096 6月 3 2021 alphanetworks
drwxrwxr-x 20 semptian semptian 4096 6月 19 2021 arista
drwxrwxr-x 5 semptian semptian 4096 6月 9 2021 barefoot
drwxrwxr-x 3 semptian semptian 4096 6月 3 2021 broadcom
drwxrwxr-x 7 semptian semptian 4096 6月 17 2021 celestica
drwxrwxr-x 7 semptian semptian 4096 6月 17 2021 centec
drwxrwxr-x 5 semptian semptian 4096 6月 3 2021 cig
drwxrwxr-x 3 semptian semptian 4096 6月 17 2021 common
drwxrwxr-x 10 semptian semptian 4096 6月 17 2021 dell
drwxrwxr-x 9 semptian semptian 4096 6月 17 2021 delta
drwxrwxr-x 3 semptian semptian 4096 6月 3 2021 facebook
drwxrwxr-x 11 semptian semptian 4096 6月 3 2021 ingrasys
drwxrwxr-x 9 semptian semptian 4096 6月 17 2021 inventec
drwxrwxr-x 4 semptian semptian 4096 6月 17 2021 juniper
drwxrwxr-x 8 semptian semptian 4096 6月 17 2021 marvell
drwxrwxr-x 20 semptian semptian 4096 6月 19 2021 mellanox
drwxrwxr-x 3 semptian semptian 4096 6月 3 2021 mitac
drwxrwxr-x 3 semptian semptian 4096 6月 17 2021 nokia
drwxrwxr-x 3 semptian semptian 4096 6月 3 2021 pegatron
drwxrwxr-x 8 semptian semptian 4096 6月 3 2021 quanta
drwxrwxr-x 3 semptian semptian 4096 7月 15 07:26 semptian
drwxrwxr-x 3 semptian semptian 4096 6月 3 2021 virtual
drwxrwxr-x 3 semptian semptian 4096 6月 3 2021 wnc
```

用于编译生成类似文件中sonic-device-data\_1.0-1\_all.deb安装包

### 2.2 平台驱动适配

sonic-platform-modules-semptian目录下主要包括具体设备平台驱动内核模块及应用工具。

将platform-modules-semptian.mk deb编译文件和sonic-platform-modules-semptian目录放在sonic-buildimage/platform/barefoot/目录下

```

semptian@semptian-GCP1820-SS:~/sonic-buildimage.202012/platform/barefoot$ ls -al
总用量 232
drwxrwxr-x 13 semptian semptian 4096 12月 24 21:17 .
drwxrwxr-x 18 semptian semptian 4096 6月 17 2021 ..
drwxrwxr-x 5 semptian semptian 4096 6月 19 2021 bfn-modules
-rw-r--r-- 1 semptian semptian 5546 8月 13 14:19 bfn-modules_1.0_amd64.buildinfo
-rw-r--r-- 1 semptian semptian 957 8月 13 14:19 bfn-modules_1.0_amd64.changes
-rw-r--r-- 1 semptian semptian 238 6月 17 2021 bfn-modules.mk
-rw-r--r-- 1 semptian semptian 310 6月 9 2021 bfn-platform-ingrasys.mk
-rw-r--r-- 1 semptian semptian 358 7月 15 07:25 bfn-platform.mk
-rwxrwxr-x 1 semptian semptian 324 6月 21 2021 bfn-platform.mk-old
-rw-r--r-- 1 semptian semptian 296 6月 9 2021 bfn-platform-wnc.mk
-rw-r--r-- 1 semptian semptian 452 7月 30 18:05 bfn-sai.mk
-rwxrwxr-x 1 semptian semptian 423 6月 21 2021 bfn-sai.mk-old
drwxrwxr-x 2 semptian semptian 4096 6月 17 2021 docker-saiserver-bfn
drwxrwxr-x 7 semptian semptian 4096 12月 18 16:05 docker-syncd-bfn
-rw-r--r-- 1 semptian semptian 435 6月 21 2021 docker-syncd-bfn.mk
drwxrwxr-x 2 semptian semptian 4096 6月 19 2021 docker-syncd-bfn-rpc
-rw-r--r-- 1 semptian semptian 1069 6月 17 2021 docker-syncd-bfn-rpc.mk
-rw-r--r-- 1 semptian semptian 74 6月 19 2021 .gitignore
-rw-r--r-- 1 semptian semptian 840 6月 9 2021 libsaithrift-dev.mk
-rw-r--r-- 1 semptian semptian 1195 7月 15 18:55 one-aboot.mk
-rw-r--r-- 1 semptian semptian 1157 7月 15 18:54 one-image.mk
-rw-r--r-- 1 semptian semptian 0 6月 9 2021 platform.conf
-rw-r--r-- 1 semptian semptian 6005 12月 24 21:17 platform-driver_1.0.0_amd64.buildinfo
-rw-r--r-- 1 semptian semptian 1496 12月 24 21:17 platform-driver_1.0.0_amd64.changes
-rw-r--r-- 1 semptian semptian 6017 8月 13 14:20 platform-driver_1.1.0_amd64.buildinfo
-rw-r--r-- 1 semptian semptian 1622 8月 13 14:20 platform-driver_1.1.0_amd64.changes
-rw-r--r-- 1 semptian semptian 1162 6月 17 2021 platform-modules-arista.mk
-rw-r--r-- 1 semptian semptian 447 6月 17 2021 platform-modules-bfn.mk
-rw-r--r-- 1 semptian semptian 526 6月 17 2021 platform-modules-bfn-montara.mk
-rw-r--r-- 1 semptian semptian 830 6月 17 2021 platform-modules-bfn-newport.mk
-rw-r--r-- 1 semptian semptian 1011 6月 17 2021 platform-modules-ingrasys.mk
-rw-r--r-- 1 semptian semptian 680 7月 15 07:24 platform-modules-semptian.mk
-rw-r--r-- 1 semptian semptian 5631 8月 13 14:20 platform-modules-wnc-osw1800_1.0_amd64.buildinfo
-rw-r--r-- 1 semptian semptian 1112 8月 13 14:20 platform-modules-wnc-osw1800_1.0_amd64.changes
-rw-r--r-- 1 semptian semptian 511 6月 17 2021 platform-modules-wnc-osw1800.mk
-rw-r--r-- 1 semptian semptian 1416 7月 15 07:24 rules.mk
-rw-r--r-- 1 semptian semptian 1362 6月 19 2021 rules.mk-old
drwxrwxr-x 9 semptian semptian 4096 6月 21 2021 sonic-platform-modules-arista
drwxrwxr-x 6 semptian semptian 4096 8月 13 14:19 sonic-platform-modules-bfn
-rw-r--r-- 1 semptian semptian 5618 8月 13 14:19 sonic-platform-modules-bfn_1.1_amd64.buildinfo
-rw-r--r-- 1 semptian semptian 1155 8月 13 14:19 sonic-platform-modules-bfn_1.1_amd64.changes
drwxrwxr-x 8 semptian semptian 4096 8月 13 14:20 sonic-platform-modules-bfn-montara
-rw-r--r-- 1 semptian semptian 5658 8月 13 14:20 sonic-platform-modules-bfn-montara_1.1_amd64.buildinfo
-rw-r--r-- 1 semptian semptian 1235 8月 13 14:20 sonic-platform-modules-bfn-montara_1.1_amd64.changes
drwxrwxr-x 7 semptian semptian 4096 8月 13 14:20 sonic-platform-modules-bfn-newport
-rw-r--r-- 1 semptian semptian 6070 8月 13 14:20 sonic-platform-modules-bfn-newport_1.0_amd64.buildinfo
-rw-r--r-- 1 semptian semptian 1749 8月 13 14:20 sonic-platform-modules-bfn-newport_1.0_amd64.changes
drwxrwxr-x 5 semptian semptian 4096 6月 9 2021 sonic-platform-modules-ingrasys
drwxrwxr-x 4 semptian semptian 4096 7月 15 07:33 sonic-platform-modules-semptian
drwxrwxr-x 6 semptian semptian 4096 6月 9 2021 sonic-platform-modules-wnc-osw1800
-rw-r--r-- 1 semptian semptian 5252 12月 24 21:17 sonic-platform-semptian-ps7350-32x-dbgSYM_1.0.0_amd64.deb
semptian@semptian-GCP1820-SS:~/sonic-buildimage.202012/platform/barefoot$

```

## 2.3 SDE适配

### 1) 编译SDE

具体参考《686229-001\_Building\_SONiC\_with\_SDE\_9.7.pdf》；

供参考基本操作：

- 1, 启动容器编译环境
- 2, 安装依赖

```

cd $SDE/p4studio
./install-p4studio-dependencies.sh
./p4studio dependencies install

```

### 3, Sde编译

```

./p4studio configure switch asic tofino2 newport --bsp-path
/sde/bf-reference-bsp-9.7.1.tgz

```

### 2) 端口映射

#### 1, BSP可单独编译

```

cmake ../ -DCMAKE_INSTALL_PREFIX=/sde/bf-sde-9.7.1/install -
DTHRIFT-DRIVER=1 -DNEWPORT=1 -DSTANDALONE=1 -DASIC=1

```

#### 2, 端口映射文件路径

bf-reference-bsp-9.7.0/bf-platforms-9.7.0/platforms/newport/src/board-  
maps/board\_lane\_map\_8560.json

### 3) 制作deb包

修改make\_platform\_deb.sh文件，在build platform debain脚本中创建x86\_64-semptian\_ps8560\_32q-r0软连接；  
如下图所示：

```
if [ ! -n ${libthrift} ]; then
    cp /usr/local/lib/${libthrift} files/opt/bfn/${instdir}/lib/platform/x86_64-accto
fi

cd files/opt/bfn/${instdir}/lib/platform
ln -s x86_64-accton_wedge100bf_65x-r0 x86_64-accton_wedge100bf_32x-r0
ln -s x86_64-accton_wedge100bf_65x-r0 x86_64-accton_as9516bf_32d-r0
ln -s x86_64-accton_wedge100bf_65x-r0 x86_64-accton_as9516_32d-r0
ln -s x86_64-accton_wedge100bf_65x-r0 x86_64-semptian_ps8550_128x-r0
ln -s x86_64-accton_wedge100bf_65x-r0 x86_64-semptian_ps8560_32q-r0
cd
```

参考《686229-001\_Building\_SONiC\_with\_SDE\_9.7.pdf》中的deb打包指令制作deb包。

打包相关指令：

```
cd $SDE/tools/sonic
chmod +x make_platform_deb.sh
chmod +x make_sde_deb.sh
./make_platform_deb.sh
./make_sde_deb.sh
```

最终会编译生成类似下面的deb包

bfnsdk\_1.0.0\_amd64.deb

bfplatform\_1.0.1\_amd64.deb