

Build Broadcom Opennsl and SAI

Intended audience

Almost all users could build SONiC image by following guide on Building Guide, except those who has access to Broadcom Opennsl and SAI source code and are working on bringing up a new SAI version.

Relevant SAI version: Broadcom SAI 3.3 and above.

NOTE: building opennsl is no longer needed for SAI 3.3

Prepare build environment

Clone SONiC Build Image Repo

Build 201803 branch: git checkout 201803; make init; make configure
PLATFORM=broadcom; KEEP_SLAVE_ON=yes SOURCE_FOLDER=<your source folder, e.g. /var/<username>/src>. (Following Building Guide).

Inside the socket build slave, save following script and run it from inside the slave docker to build:

```
#!/bin/bash -x
```

```
function set_kernel_version()
```

```
{
```

```
    COMMON=`ls /sonic/target/debs/linux-headers*common*.deb`
```

```
    TMP=${COMMON//\/sonic\/target\/debs\/linux-headers-/}
```

```
    VERSION=${TMP//-common*/}
```

```
    echo "Version: $VERSION"
```

```
}
```

```
function fix_build_symbolic_links()
```

```
{
```

```
    # Fix source code symbolic links until Broadcom fix build issue.
```

```
    sudo rm -rf /lib/modules/$VERSION-amd64/build
```

```
    sudo rm -rf /lib/modules/$VERSION-amd64/source
```

```
    sudo ln -s /usr/src/linux-headers-$VERSION-common/ /lib/modules/$VERSION-  
amd64/source
```

```
    sudo ln -s /usr/src/linux-headers-$VERSION-amd64/ /lib/modules/$VERSION-  
amd64/build
```

```
    sudo ln -s /usr/src/linux-headers-$VERSION-amd64/include/generated/ /usr/src/linux-  
headers-$VERSION-common/include/generated
```

```
    sudo ln -s /usr/src/linux-headers-$VERSION-amd64/arch/x86/include/generated/  
/usr/src/linux-headers-$VERSION-common/arch/x86/include/generated
```

```
    sudo ln -s /usr/src/linux-headers-$VERSION-amd64/include/config/ /usr/src/linux-  
headers-$VERSION-common/include/config
```

```
    sudo cp /usr/src/linux-headers-$VERSION-amd64/Module.symvers /usr/src/linux-  
headers-$VERSION-common/Module.symvers
```

```
    ls /lib/modules
```

```
}
```

```
sudo apt-get -y install linux-kbuild-3.16 linux-compiler-gcc-4.8-x86
```

```
sudo dpkg -i /sonic/target/debs/linux-headers-*.deb
```

```
set_kernel_version
```

```
fix_build_symbolic_links
```

```
export KERNEL_SRC=/usr/src/linux-headers-$VERSION-common
```

```
fakeroot debian/rules -j20 -B binary'
```

Known issues

With current SAI 3.3. You are unable to clean and rebuilt. To rebuild:

```
rm -rf output
```

```
git checkout output
```

and run the above script again.

Use newly created packages to build a new SONiC image

Clone SONiC Build Image Repo

Follow Building Guide, issue make init, make config PLATFORM=broadcom.

copy the newly built opennsl and SAI debian packages to <build image repo root>/target/debs/

Edit <build image repo root>/platform/broadcom/sdk.mk, change BRCM_OPENNSL_KERNEL to match the name of the new opennsl package.

Edit <build image repo root>/platform/broadcom/sai.mk, change BRCM_SAI and BRCM_SAI_DEV respectively to match the new SAI packages names.

Follow normal build procedure to build SONiC image.