OAI install (compression)

#PHY patch from OAI

phy_E.zip 3.4KB

#configure file from OAI

mwc_20899_newfhi_E_3450.zip 3.5KB

usecase_du_3450.zip 1.0KB

config_o_du_3450_E.dat 5.7KB

config_o_du_3450_E.dat 5.7KB

doc/ORAN_FHI7.2_Tutorial.md · fhidriver_E · oai / openairinterfac…

Openairinterface 5G Wireless Implementation

https://gitlab.eurecom.fr/oai/openairinterface5g/-/blob/fhidriver_E/doc/ORA…

▼ cpu

```
[liteon@localhost ~]$ lscpu
Architecture:            x86_64
CPU op-mode(s):          32-bit, 64-bit
Address sizes:           46 bits physical, 48 bits virtual
Byte Order:              Little Endian
CPU(s):                  32
On-line CPU(s) list:     0-31
Vendor ID:               GenuineIntel
Model name:              Intel(R) Xeon(R) Silver 4216 CPU @ 2.10GHz
CPU family:              6
Model:                   85
Thread(s) per core:      1
Core(s) per socket:      16
Socket(s):               2
Stepping:                7
CPU max MHz:             3200.0000
CPU min MHz:             800.0000
BogoMIPS:                4200.00
```

- os and original kernel

  [liteon@localhost ~]$ cat /etc/redhat-release
  Red Hat Enterprise Linux release 9.2 (Plow)
  [liteon@localhost ~]$ uname -a
  Linux localhost.localdomain 5.14.0-284.11.1.el9_2.x86_64 #1 SMP PREEMPT_DYNAMIC Wed Apr 12 10:45:03 EDT 2023 x86_64 x86_64 x86_64 GNU/Linux

- nic

  [liteon@localhost ~]$ ethtool -i ens1f0
  driver: ice
  version: 5.14.0-284.11.1.el9_2.x86_64
  firmware-version: 4.01 0x800135e7 1.3256.0
  expansion-rom-version:
  bus-info: 0000:12:00.0
  supports-statistics: yes
  supports-test: yes
  supports-eeprom-access: yes
  supports-register-dump: yes
  supports-priv-flags: yes

- Add sudoer

  How to enable sudo on Red Hat Enterprise Linux | Red Hat Developer

```
su usermod -aG wheel your_user_id # logout
```

- register redhat

  ```
  subscription-manager register
  ```

  Reference : https://kknews.cc/code/nenqkq5.html

- install RT kernel

  Installing RHEL 8 for Real Time Red Hat Enterprise Linux for Real Time 8 | Red Hat Customer Portal

  ```
  subscription-manager repos --enable rhel-9-for-x86_64-rt-rpms
  ```

  ```
  dnf groupinstall RT
  ```

- RT kernel version

  4.18.0-477.27.1.rt7.290.el8_8

- Add RT profile

  ```
  sudo tuned-adm profile realtime
  ```

- install gcc11

  ```
  sudo yum remove --skip-broken gcc
  ```

  ```
  yum install gcc-toolset-11
  ```

- install python3 and meson

  ```
  sudo dnf install python3-requests
  ```

  ```
  sudo dnf install python3-pip
  ```

  ```
  sudo pip3 install meson
  ```

- install ninja

  https://github.com/ninja-build/ninja/tree/v1.11.1

  ```
  git clone https://github.com/ninja-build/ninja.git
  ```

  ```
  cd ninja
  ```

  ```
  sudo dnf install cmake
  ```

  ```
  cmake -Bbuild-cmake
  ```

  ```
  cd build-cmake
  ```

  ```
  sudo make install
  ```

  - Move ninja from /usr/local/bin to /usr/bin allow
    - `sudo cp /usr/local/bin/ninja /usr/bin/`

DPDK install

```
#Download DPDK version 20.05.0 wget http://fast.dpdk.org/rel/dpdk-20.05.tar.xz
#DPDK Compilation tar -xvf dpdk-20.05.tar.xz cd dpdk-20.05 meson build cd build
ninja sudo ninja install sudo dnf install numactl sudo dnf install numactl-devel
make install T=x86_64-native-linuxapp-gcc
```

```
wget http://fast.dpdk.org/rel/dpdk-20.11.7.tar.xz tar xvf dpdk-20.11.7.tar.xz &&
cd dpdk-stable-20.11.7 # use gcc 11 environment sudo scl enable gcc-toolset-11
bash /usr/local/bin/meson build ninja -C build sudo ninja install -C build
```

```
export XRAN_LIB_DIR=~/phy/fhi_lib/lib/build export XRAN_DIR=~/phy/fhi_lib export
RTE_SDK=~/dpdk-20.05 export RTE_TARGET=x86_64-native-linuxapp-gcc export
RTE_INCLUDE=${RTE_SDK}/${RTE_TARGET}/include export
XRAN_LIB_DIR=~/phy/fhi_lib/lib/build export XRAN_DIR=~/phy/fhi_lib export
RTE_SDK=~/dpdk-stable-20.11.7 export RTE_TARGET=x86_64-native-linuxapp-gcc
export RTE_INCLUDE=/usr/local/include # root export
XRAN_LIB_DIR=/home/liteon/phy/fhi_lib/lib/build export
XRAN_DIR=/home/liteon/phy/fhi_lib export RTE_SDK=/home/liteon/dpdk-20.05 export
RTE_TARGET=x86_64-native-linuxapp-gcc export
RTE_INCLUDE=${RTE_SDK}/${RTE_TARGET}/include export
XRAN_LIB_DIR=/home/liteon/phy/fhi_lib/lib/build export
XRAN_DIR=/home/liteon/phy/fhi_lib export RTE_SDK=/home/liteon/dpdk-stable-
20.11.7 export RTE_TARGET=x86_64-native-linuxapp-gcc export
RTE_INCLUDE=/usr/local/include
```

PHY

gerrit.o-ran-sc Code Review - o-du/phy.git/summary

```
git clone https://gerrit.o-ran-sc.org/r/o-du/phy.git cd phy git checkout oran_e_
maintenance_release_v1.0 git apply phy_E.patch # install gcc 11 sudo yum remove
--skip-broken gcc sudo yum install gcc-toolset-11 # make gcc version is 11 (orig
in gcc version is 8.5) sudo mv /usr/bin/gcc /usr/bin/gcc_backup sudo mv /usr/bi
n/g++ /usr/bin/g++_backup sudo mv /usr/bin/gcov /usr/bin/gcov_backup sudo ln -s
/opt/rh/gcc-toolset-11/root/usr/bin/gcc /usr/bin/gcc-11 sudo ln -s /opt/rh/gcc-t
oolset-11/root/usr/bin/g++ /usr/bin/g++-11 sudo update-alternatives --install /u
sr/bin/gcc gcc /usr/bin/gcc-11 50 sudo update-alternatives --install /usr/bin/g+
+ g++ /usr/bin/g++-11 50 sudo update-alternatives --install /usr/bin/gcov gcov /
opt/rh/gcc-toolset-11/root/usr/bin/gcov 50 sudo update-alternatives --config gcc
# choose gcc 11 gcc -v # check gcc version whether it is 11 g++ -v # check g++ v
ersion whether it is 11 # recover gcc version to 8.5 sudo mv /usr/bin/gcc_backup
/usr/bin/gcc sudo mv /usr/bin/g++_backup /usr/bin/g++ sudo mv /usr/bin/gcov_back
up /usr/bin/gcov gcc -v # check gcc version whether it is 8.5 g++ -v # check g++
version whether it is 8.5
```

```
# Modify /home/liteon/phy/fhi_lib/lib/Makefile
################################################################## # Tools
configuration ################################################################## CC
:= /opt/rh/gcc-toolset-11/root/usr/bin/gcc #icc CPP := /opt/rh/gcc-toolset-
11/root/usr/bin/g++ #icpc
```

```
cd ~/phy/fhi_lib/lib make XRAN_LIB_SO=1
```

gcc-11

```
sudo scl enable gcc-toolset-11 bash
```

openairinterface

```
git clone https://gitlab.eurecom.fr/oai/openairinterface5g.git git checkout
remotes/origin/fhidriver_E source oaienv cd ~/openairinterface5g/cmake_targets
./build_oai --gNB --ninja -t oran_fhlib_5g (Add, -I if you are building for the
first time on server for installing external dependencies) # if it occurs error
```