

Setting up the VBS

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Hardware Requirements

This guide assumes that you are deploying the eNodeB using our pre-patched version of the srsLTE software stack and that you have access to a standard LTE EPC, e.g. EURECOM OpenAirInterface EPC implementation.

For the machine running the eNB a Quad core PC (i5 or better) with at least 8 GM RAM will be needed together with a Software Defined Radio platform supported by srsLTE (e.g. the Ettus USRP B210).

The reference operating system for this guide is Ubuntu 18.04.

Software Requirements

The following commands will update the package repository and install some dependencies:

```
sudo apt-get update
sudo apt-get install build-essential libpthread-stubs0-dev cmake \
    libfftw3-dev libmbdtps-dev libboost-all-dev \
    libconfig++-dev libsctp-dev libuhd-dev
```

Compilation process

Download, compile, and install the EmPOWER protocol definition:

```
cd ~
git clone https://github.com/5g-empower/empower-enb-proto.git
cd empower-enb-proto
make
sudo make install
```

Download, compile, and install the EmPOWER protocol definition:

```
cd ~
git clone https://github.com/5g-empower/empower-enb-agent.git
cd empower-enb-agent
make
sudo make install
```

Download and compile the srsLTE code:

```
cd ~
git clone https://github.com/5g-empower/empower-srsLTE.git
cd empower-srsLTE
mkdir build
cd build
```

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```
cmake ../
make
```

Clone this wiki locally

<https://github.com/clicknf/clicknf.github.io/wiki> 

Configuration process

This tutorial assumes that you have an compatible EPC at your disposal. This could be either a commercial EPC or an open-source one. Please refer to your EPC provider for information about its configuration and usage.

Copy the example configuration files into the working directory:

```
cd ~/empower-srsLTE
cp srsenb/drb.conf.example build/srsenb/src/drb.conf
cp srsenb/enb.conf.example build/srsenb/src/enb.conf
cp srsenb/rr.conf.example build/srsenb/src/rr.conf
cp srsenb/sib.conf.example build/srsenb/src/sib.conf
```

Leave all the configuration files unchanged with the exception of the `enb.conf` file which has to be edited in order to specify:

- the desired `enb_id` and `cell_id`
- the `phy_cell_id` compatible with the `cell_id`
- the TAC, MCC, and MNC as defined in the core network configuration
- the `mme_addr` pointing to the MME in the core network
- the `gtp_bind_addr` pointing to the local IP address used to reach the core network
- the number of resource blocks assigned to the cell (`n_prb`)
- the controller address (`ctrl_addr`) and port (`ctrl_port`, default 2210)

Start the VBS

Start the srsenb:

```
cd ~/empower-srsLTE/build/srsenb/src/
./srsenb enb.conf
```