Contents

Sources:

See these source pages first, for source code/author of signal-cli:
https://github.com/AsamK/signal-cli
https://github.com/AsamK/signal-cli/wiki/Provide-native-lib-for-libsignal

Manual:

https://github.com/AsamK/signal-cli/blob/master/man/signal-cli.1.adoc

Issues:

https://github.com/AsamK/signal-cli/discussions/393#discussioncomment-246169

Manually building signal-cli v0.8.1 for on a Raspberry Pi

Below are the steps which worked for me, in March 2021, on a **Raspberry Pi 3B with Raspbian GNU/Linux 10 (buster)**

- Replace 'smarthome' with your used username on the Raspberry

Install required packages to be able to build signal-cli and dependent zklibrary + libsignal-client libraries

- Raspberry PI 3B with Raspbian GNU/Linux 10 (buster)
- Java JDK c11.0.9.1
- Gradle v6.7.1
- Rust 1.41.1+dfsg1-1~deb10u1+rpi1
- protobuf-compiler 3.6.1.3-2+rpi1

If you don't have these installed, see the section "*Install required packages*:"

Build signal-cli

Building signal-cli on a raspberry pi 3 is not easy due to its limited memory. It needs a lot of free memory!
You'll need to (temporarily) stop/kill any unneeded processes/services and reduce the Video memory to 16MB
The raspberry pi needs a *lot* of free memory to build signal-cli
For v0.8.1, 850MB of available memory (as seen with free -m) was needed
With 807MB free it failed to build. Also used the –stacktrace option for the gradle build.

https://github.com/AsamK/signal-cli "Building" section:
$ **mkdir /home/smarthome/signal-cli_src_git**
$ **cd /home/smarthome/signal-cli_src_git**

if you don't have the source yet:
$ **git clone https://github.com/AsamK/signal-cli.git**

else update the local repository:
$ **git pull**
Make a local branch out of the release/tag v0.8.1:
$ git checkout -b br_v0.8.1 v0.8.1

$ **cd /home/smarthome/signal-cli_src_git/signal-cli**

Build the client:
$ **gradle build --stacktrace** (note this takes several minutes (~10) to complete)
$ **gradle installDist**
$ **gradle distTar**

The 2 files are now:
/home/smarthome/signal-cli_source/signal-cli/build/distributions/signal-cli-0.8.1.tar
/home/smarthome/signal-cli_source/signal-cli/build/distributions/signal-cli-0.8.1.zip

Both will still need to have 2 libraries updated.

Get and build zkgroup library:

Download the Source code for zkgroup library v0.7.1 (https://github.com/signalapp/zkgroup/releases)
$ **wget -O /home/smarthome/_downloaded/zkgroup-0.7.1.zip https://github.com/signalapp/zkgroup/archive/v0.7.1.zip**

Extract content of zkgroup-0.7.1.zip to /home/pi:
$ **unzip -d /home/smarthome /home/smarthome/_downloaded/zkgroup-0.7.1.zip**

$ **cd /home/smarthome/zkgroup-0.7.1**
$ **make libzkgroup** (note this takes several minutes (~6) to complete)

Once finished, the required file is: /home/smarthome/zkgroup-0.7.1/target/release/libzkgroup.so

Get and build libsignal-client library:

Clone the GIT source:
$ **mkdir /home/smarthome/libsignal-client_src_git**
$ **cd /home/smarthome/libsignal-client_src_git**
$ **git clone https://github.com/signalapp/libsignal-client.git**
Check the version of the signal-client-java-x.x.x.jar file in /home/smarthome/signal-cli_src_git/signal-cli/build/install/signal-cli/lib

In this case its java-0.2.3

$ **cd /home/smarthome/libsignal-client_src_git/libsignal-client**
Create local branch from tag/release 'java-0.2.3':
$ **git checkout -b br_java-0.2.3 java-0.2.3**
Build the Library:
$ **cd java**
# Prevent building the android library
$ **sed -i "s/, ':android'//" settings.gradle**
$ **./build_jni.sh desktop**

Then the native lib can be found in the libsignal-client root directory:
/home/smarthome/libsignal-client_src_git/libsignal-client/target/release/libsignal_jni.so

Update jar file with updated signal-client-java-*.so file

$ **zip -ur /home/smarthome/signal-cli_src_git/signal-cli/build/install/signal-cli/lib/signal-client-java-0.2.3.jar /home/smarthome/libsignal-client_src_git/libsignal-client/target/release/libsignal_jni.so**

Update jar file with updated libzkgroup.so file

$ **zip -ur /home/smarthome/signal-cli_src_git/signal-cli/build/install/signal-cli/lib/zkgroup-java-0.7.0.jar /home/smarthome/zkgroup-0.7.1/target/release/libzkgroup.so**

Copy JAR File

$ **cd /home/smarthome/signal-cli_src_git/signal-cli/build/distributions**
$ **mkdir -p signal-cli-0.8.1/lib/**

Copy both updated libraries:
$ cp /home/smarthome/signal-cli_src_git/signal-cli/build/install/signal-cli/lib/zkgroup-java-0.7.0.jar signal-cli-0.8.1/lib/

Update ZIP file

$ **zip -ur /home/smarthome/signal-cli_src_git/signal-cli/build/distributions/signal-cli-0.8.1.zip signal-cli-0.8.1/lib/zkgroup-java-0.7.0.jar**

$ **zip -ur /home/smarthome/signal-cli_src_git/signal-cli/build/distributions/signal-cli-0.8.1.zip signal-cli-0.8.1/lib/signal-client-java-0.2.3.jar**

Update TAR file

$ **tar --delete -vPf /home/smarthome/signal-cli_src_git/signal-cli/build/distributions/signal-cli-0.8.1.tar signal-cli-0.8.1/lib/zkgroup-java-0.7.0.jar**
$ **tar --owner='' --group='' -rvPf /home/smarthome/signal-cli_src_git/signal-cli/build/distributions/signal-cli-0.8.1.tar signal-cli-0.8.1/lib/zkgroup-java-0.7.0.jar**

$ **tar --delete -vPf /home/smarthome/signal-cli_src_git/signal-cli/build/distributions/signal-cli-0.8.1.tar signal-cli-0.8.1/lib/signal-client-java-0.2.3.jar**
$ **tar --owner='' --group='' -rvPf /home/smarthome/signal-cli_src_git/signal-cli/build/distributions/signal-cli-0.8.1.tar signal-cli-0.8.1/lib/signal-client-java-0.2.3.jar**

Updated signal-cli-0.8.1.tar is now in: /home/smarthome/signal-cli_src_git/signal-cli/build/distributions/

Install/export signal-cli

$ **sudo tar xf /home/smarthome/signal-cli_src_git/signal-cli/build/distributions/signal-cli-0.8.1.tar -C /opt**
$ **sudo ln -sf /opt/signal-cli-0.8.1/bin/signal-cli /usr/local/bin/**

- signal-cli is now installed on the Raspberry Pi

Unregister previous version

See also the online manual!

/opt/signal-cli-0.7.4/bin/signal-cli `-u <full_international_mobile_number>` unregister

Registering

See also the online manual!

```
signal-cli -u <full_international_mobile_number> register

if getting an error about captcha:
       open browser
       F12 and then Console
```

--captcha

The captcha token, required if registration failed with a captcha required error. To get the token, go to https://signalcaptchas.org/registration/generate.html Check the developer tools for a redirect starting with signalcaptcha://
Everything after signalcaptcha:// is the captcha token.

```
signal-cli -u <full_international_mobile_number> register --captcha <captcha token>

signal-cli -u <full_international_mobile_number> verify <CODE>
```

Sending a test message:

```
signal-cli -u <full_international_mobile_number> send -m "This is a test message"
<RECEIVER_full_international_mobile_number>
```

Install required packages:

Update the current packages:

$ **sudo apt update**
$ **sudo apt full-upgrade**

$ **mkdir -p /home/smarthome/_downloaded**

Install latest JAVA JDK (v11.0.9.1)

$ **sudo apt update**
$ **sudo apt install default-jdk**
$ **java --version**

Install version v6.7.1 of Gradle

(https://gradle.org/install/)
Copy down binary-only from: https://gradle.org/next-steps/?version=6.7.1&format=bin
$ **wget -P /home/smarthome/_downloaded https://services.gradle.org/distributions/gradle-6.7.1-bin.zip**

$ **sudo mkdir /opt/gradle**
$ **sudo unzip -d /opt/gradle /home/smarthome/_downloaded/gradle-6.7.1-bin.zip**

Add gradle to the PATH:
$ **export PATH=$PATH:/opt/gradle/gradle-6.7.1/bin**

Check if all is ok by getting the version of Gradle:
$ **gradle -v**
Gradle 6.7.1

Install Rust:

https://www.rust-lang.org/tools/install
Run the below and follow instructions:
$ **curl --proto '=https' --tlsv1.2 -sSf https://sh.rustup.rs | sh**
Choose 1 Proceed with installation (default)

Once finished, add rust to the Path
$ **export PATH="$PATH:/home/smarthome/.cargo/bin"**

Check rust is working by getting its version:
[pi@Home ~]$ **rustup --version**
rustup 1.23.1 (3df2264a9 2020-11-30)
info: This is the version for the rustup toolchain manager, not the rustc compiler.

Install protobuf-compiler:

$ **sudo apt install protobuf-compiler**