RVI SOTA Client

RVI SOTA Client has been replaced in GENIVI Development Platform (GDP) by Aktualizr!

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The following tutorial provides the exact steps how to build GENIVI Development Platform (GDP) and RVI (Remote Vehicle Interaction) SOTA (Software, Over the Air) client, written in the Rust programming language, as well as how to run and test it on a development board with the assistance of Docker containers for RVI nodes. The build procedure has been tested on Ubuntu 14.04 LTS (Trusty Tahr) and Debian Jessie. RVI SOTA client has been tested on Raspberry Pi 2 and Renesas M2 Porter board. Further information on the RVI SOTA project can be found here.

Building and Testing RVI SOTA Client

Perform the following steps to build GDP image, run Docker images with RVI nodes and test RVI SOTA client which is running on a development board:

1. Prepare GDP build environment.
2. Add `meta-rust` to `BBLAYERS` in `conf/bblayers.conf`, for example:
   ```
   BBLAYERS ?= " \
   $(TOPDIR)/../poky/meta \
   $(TOPDIR)/../poky/meta-yocto \
   $(TOPDIR)/../poky/meta-yocto-bsp \
   $(TOPDIR)/../meta-ivi/meta-ivi \
   $(TOPDIR)/../meta-ivi/meta-ivi-bsp \
   $(TOPDIR)/../meta-openembedded/meta-oe \
   $(TOPDIR)/../meta-openembedded/meta-filesystems \ 
   $(TOPDIR)/../meta-openembedded/meta-ruby \ 
   $(TOPDIR)/../meta-qt5 \ 
   $(TOPDIR)/../meta-ivi-dev/meta-ivi-dev \ 
   $(TOPDIR)/../meta-rust \ 
   "
   ```
3. Add RVI SOTA client to the image by appending the following line to `conf/local.conf`:
   ```
   IMAGE_INSTALL_append = " rvi-sota-client "
   ```
4. Build GDP:
   ```
   bitbake genivi-dev-platform
   ```
5. Install Docker.
6. Pull Docker image:
   ```
   docker pull advancedtelematic/rvi
   ```
7. Open a terminal and run a Docker container with RVI client node:
   ```
   ```
8. Make sure that port 8901 from the Docker container of RVI client node is exposed and the instances of RVI SOTA Client on the development board will be able to connect:
   ```
   (client@434f0e1bb6f0)> EXPOSE 8901
   ```
9. Open another terminal and run a Docker container with RVI server node:
10. Boot the development board and login as `root` using password `root`.
11. Open `/etc/hosts` and define the IP of the host where the RVI Client node is running as `rvi-client`, for example after that the `/etc/hosts` should be similar to:

```
127.0.0.1 localhost.localdomain localhost
192.168.4.157 rvi-client
```
12. Restart systemd service `rvi-sota-client`:

```
systemctl restart rvi-sota-client
```
13. Execute the following command on the target to check the status of `rvi-sota-client` systemd service:

```
systemctl status -l rvi-sota-client
```
14. Verify that `rvi-sota-client` systemd is running and `sota_client` is ready to accept connections, the output should be similar to:

```
root@raspberrypi2:~# systemctl status -l rvi-sota-client
rvi-sota-client.service - RVI SOTA Client
Loaded: loaded (/lib/systemd/system/rvi-sota-client.service; enabled; vendor preset: enabled)
Active: active (running) since Tue 2016-03-01 14:26:17 UTC; 2s ago
Main PID: 6122 (run.sh)
CGroup: /system.slice/rvi-sota-client.service
6122 /bin/bash /usr/bin/run.sh
6127 /usr/bin/dbus-daemon --fork --print-pid 4 --print-address 6 --session
6128 /usr/bin/sota_client -c /var/sota/client.toml -r http://rvi-client:8901 -e 0.0.0.0:9080
Mar 01 14:26:17 raspberrypi2 systemd[1]: About to execute: /usr/bin/run.sh
Mar 01 14:26:17 raspberrypi2 systemd[1]: Forked /usr/bin/run.sh as 6122
Mar 01 14:26:17 raspberrypi2 systemd[1]: rvi-sota-client.service changed dead -> running
Mar 01 14:26:17 raspberrypi2 systemd[1]: Job rvi-sota-client.service/start finished, result=done
Mar 01 14:26:17 raspberrypi2 systemd[1]: Started RVI SOTA Client.
Mar 01 14:26:17 raspberrypi2 systemd[6122]: Executing: /usr/bin/run.sh
Mar 01 14:26:17 raspberrypi2 systemd[6122]: Starting RVI SOTA Client...
Mar 01 14:26:17 raspberrypi2 run.sh[6122]: $XDG_CONFIG_HOME is not set
Mar 01 14:26:17 raspberrypi2 run.sh[6122]: WARN:sota_client::configuration::configuration: Failing back to $HOME/.config
Mar 01 14:26:17 raspberrypi2 run.sh[6122]: INFO:sota_client::rvi::edge: Ready to accept connections.
```