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CarSync Manual

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Version History

REVISION CHART			
Version	Author(s)	Description of Version	Date Completed
0.1	Wojciech Perlański	Import from the Confluence manual page.	2014.12.03
0.2	Wojciech Perlański	Commands updated, console output presented.	2014.12.04
0.3	Wojciech Perlański	RVI setup and its description updated (config.sys points to Hyperion server)	2014.12.05
0.4	Wojciech Perlański	Dumm and CIVG updated	2014.12.16
0.5	Wojciech Perlański	Path to config file corrected	2014.12.29
0.6	Wojciech Perlański	RVI version 0.2.3, typo fixes	2015.01.15
0.7	Cezary Czajka	Added of Civg and RVI configuration part	2015.01.15
0.8	Wojciech Perlański	Applying comments: Home Screen, Install instruction	2015.01.19

TABLE OF CONTENTS

1. SETTING UP JLR IMAGE	6
2. CIVG ON TIZEN SETUP.....	8
2.1 CIVG CONFIGURATION	12
2.2 CONFIGURATION OF LOCAL RVI NODE.....	13
2.3 RESETTING DEMO ON THE DEVICE.....	13
2.4 LAUNCHING JLR DEMO APPLICATION ON THE DEVICE	14

TABLE OF FIGURES

1.

CarSync installation manual

The manual covers basic installation and configuration steps of CarSync release.

1. Setting up JLR image

Write image to USB drive:

```
# assuming /dev/sdb is the USB drive
zcat TizenIVI30_APR22_AGL_19SEP2014.raw.gz | dd of=/dev/sdb
```

Plug into NDIS166, enter BIOS (hold DEL key during startup), enable boot from USB

(Section Boot → Hard Drive BBS Priorities → set Boot Option #1 → Save & Exit).

Once the image starts up you'll get a Weston session. IVI Home Screen should start up automatically, but that does not happen most of the time.

Switch to console (Ctrl-Alt-F2) and login. Credentials:

- ⑩ user: root
- ⑩ pasword: tizen

The board comes up with DHCP, so if you enable SSH, it should be possible to login remotely as root. To enable SSH daemon:

```
# enable startup at boot
root:~> systemctl enable sshd
# start now
root:~> systemctl start sshd
```

Copy RVI package (rvi-0.2.3-20150115.i686.rpm) via SCP and install using zypper:

```
root:~> zypper in rvi-0.2.3-20150115.i686.rpm
Loading repository data...
Reading installed packages...
Resolving package dependencies...

The following NEW package is going to be installed:
  rvi

1 new package to install.
```

```
Overall download size: 14.3 MiB. After the operation, additional 25.7
MiB will
be used.
Continue? [y/n/?] (y): y
Retrieving package rvi-0.2.3-20150114.i686      (1/1),  14.3 MiB ( 25.7
MiB unpacked)
Retrieving package rvi-0.2.3-20150114.i686      (1/1),  14.3 MiB ( 25.7
MiB unpacked)
(1/1) Installing: rvi-0.2.3-20150114.i686hyp15
..... [done]
```

Start RVI node manually:

```
root:~> systemctl start rvi
```

RVI seems to have connection stability issues, if there's a problem registering with remote node restart the service:

```
root:~> systemctl restart rvi
```

To check its status:

```
root:~> systemctl status rvi

rvi.service - Remote Vehicle Interaction Service
   Loaded: loaded (/usr/lib/systemd/system/rvi.service; enabled)
   Active: active (running) since Thu 2014-12-04 02:00:57 PST; 3s ago
   Process: 1119 ExecStopPost=/opt/rvi-0.2.3/erts-5.10.4/bin/epmd -kill (code=ex-
ited, status=1/FAILURE)
   Process: 1021 ExecStop=/bin/sh /opt/rvi-0.2.3/bin/rvi stop (code=exited, sta-
tus=0/SUCCESS)
   Process: 1128 ExecStart=/bin/sh /opt/rvi-0.2.3/bin/rvi start (code=exited, sta-
tus=0/SUCCESS)
   Process: 1122 ExecStartPre=/opt/rvi-0.2.3/erts-5.10.4/bin/epmd -daemon (code=ex-
ited, status=0/SUCCESS)
   CGroup: /system.slice/rvi.service
           └─1178 /opt/rvi-0.2.3/erts-5.10.4/bin/epmd -daemon
           └─1185 /opt/rvi-0.2.3/erts-5.10.4/bin/run_erl -daemon /tmp//opt/rvi-
0.2.3/ /opt/rvi-0.2.3/log exec /opt/rvi-0.2.3/bin/rvi console ''
               └─1186 /opt/rvi-0.2.3/erts-5.10.4/bin/beam.smp -- -root /opt/rvi-
0.2.3 -prognose rvi -- -home /opt/rvi-0.2.3 -- -boot /opt/rvi-0.2.3/re-
leases/0.2.3/rvi -mode embedded -config /op...

Dec 04 02:00:57 ivi_box systemd[1]: Started Remote Vehicle Interaction Service.
```

2. CIVG on Tizen setup

Current package version:

⑩ civg-2.0.0-19.20141215.i686.rpm

Genivi DUMM must also be installed, current package version is

⑩ dumm-0.1.0-3.i686.rpm

Installation can be performed using zypper or rpm. Service name is genivi-dumm. To install using zypper enter:

```
root:~> zypper in dumm-0.1.0-3.i686.rpm
Loading repository data...
Reading installed packages...
Resolving package dependencies...

The following NEW package is going to be installed:
  dumm

1 new package to install.
Overall download size: 101.2 KiB. After the operation, additional 408.5 KiB will
be used.
Continue? [y/n/?] (y): y
Retrieving package dumm-0.1.0-2.i686
(1/1), 101.2 KiB (408.5 KiB unpacked)
Retrieving package dumm-0.1.0-2.i686
(1/1), 101.2 KiB (408.5 KiB unpacked)
(1/1) Installing: dumm-0.1.0-2
.....
..... [done]
```

To start service:

```
root:~> systemctl start genivi-dumm
```

To get status:

```
root:~> systemctl status genivi-dumm
genivi-dumm.service - Genivi DUMM
   Loaded: loaded (/usr/lib/systemd/system/genivi-dumm.service; static)
   Active: active (running) since Thu 2014-12-04 02:12:58 PST; 4s ago
   Main PID: 1266 (dumm)
   CGroup: /system.slice/genivi-dumm.service
           └─1266 /usr/bin/dumm -s
```



```
Dec 04 02:12:58 ivi_box systemd[1]: Started Genivi DUMM.
```

After dumm is installed, install CIVG using zypper:

```
root:~> zypper in civg-2.0.0-19.20141215.i686.rpm
Loading repository data...
Reading installed packages...
Resolving package dependencies...

The following NEW package is going to be installed:
  civg

1 new package to install.
Overall download size: 9.2 MiB. After the operation, additional 10.1 MiB will be
used.
Continue? [y/n/?] (y): y
Retrieving package civg-2.0.0-19.20141027git19e2a4c.i686
(1/1), 9.2 MiB (10.1 MiB unpacked)
Retrieving package civg-2.0.0-19.20141027git19e2a4c.i686
(1/1), 9.2 MiB (10.1 MiB unpacked)
(1/1) Installing: civg-2.0.0-19.20141027git19e2a4c
.....
..... [done]
```

Service name is civg_service, to start/stop it:

```
#start
root:~>systemctl start civg_service
#stop
root:~>systemctl stop civg_service
```

To get status:

```
root:~> systemctl status civg_service
civg_service.service - CarSync In Vehicle Gateway service
   Loaded: loaded (/usr/lib/systemd/system/civg_service.service; ena-
   bled)
   Active: active (running) since Thu 2014-12-04 02:32:36 PST; 5s ago
 Main PID: 1312 (civg_service)
   CGroup: /system.slice/civg_service.service
           └─1312 /bin/civg_service -d
```

```

Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.627038 RVI_TOOLS
[DEBUG] sent: 0
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.777568 RVI_CON-
SUMER [DEBUG] client connected to /configuration/response
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.777702 RVI_CON-
SUMER [DEBUG] method: POST
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.777765 RVI_CON-
SUMER [DEBUG] got request: {"jsonrpc": "2.0", "id": 1, "method": "mes-
sage", "params": {"service_name": "/SAJWA6GL7EM...DQOMEAB"}}}
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.777857 RVI_CON-
SUMER [DEBUG] got configuration response message
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.777900 RVI_CON-
SUMER [DEBUG] OK response: { "jsonrpc": "2.0", "result": { "status": 0 },
"id": "1" }
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.778292 CIVG
[WARN] Received RPC error. Code: 2; Reason: wrong RP
Dec 04 02:32:37 ivi_box civg_service[1312]: Compiled without SSL sup-
port, serving unencrypted
Dec 04 02:32:37 ivi_box civg_service[1312]: Listening on port 9000
Dec 04 02:32:37 ivi_box civg_service[1312]: 1417689157.146225
CIVG_WS_ADAPTER [INFO] starting server...
Hint: Some lines were ellipsized, use -l to show in full.

```

To view logs from civg_service, use journalctl like this:

```

root:~> journalctl -u civg_service --no-pager
Dec 04 02:30:50 ivi_box systemd[1]: Stopping CarSync In Vehicle Gateway service...
Dec 04 02:30:50 ivi_box systemd[1]: Stopped CarSync In Vehicle Gateway service.
Dec 04 02:32:36 ivi_box systemd[1]: Starting CarSync In Vehicle Gateway service...
Dec 04 02:32:36 ivi_box systemd[1]: Started CarSync In Vehicle Gateway service.
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.447820 CIVG [INFO] Initializing CIVG (autoUpgrade=0)
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.450133 RVI_CONSUMER [INFO] setting up RVI 0.2.1
transport
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.450653 RVI_CONSUMER [INFO] setting up RVI listener
at: http://localhost:12999
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.452024 RVI_TOOLS [INFO] registering service
/SAJWA6GL7EMK00949/carsync/configuration/response
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.452096 RVI_TOOLS [INFO] node: http://lo-
calhost:8811
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.452129 RVI_TOOLS [INFO] target: http://lo-
calhost:12999/configuration/response
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.608053 RVI_TOOLS [DEBUG] status code: 200
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.608147 RVI_TOOLS [DEBUG] body:
{"jsonrpc": "2.0", "id": "1", "result": {"service": "jlr.com/vin/SAJWA6GL7EMK00949/carsync/config..." "status": 0}}
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.608362 RVI_TOOLS [INFO] registering service
/SAJWA6GL7EMK00949/carsync/notification/update
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.608410 RVI_TOOLS [INFO] node: http://lo-
calhost:8811
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.608440 RVI_TOOLS [INFO] target: http://lo-
calhost:12999/notification/update
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.612788 RVI_TOOLS [DEBUG] status code: 200

```

```

Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.616485 RVI_TOOLS [DEBUG] body:
{"jsonrpc":"2.0","id":"1","result":{"service":"jlr.com/vin/SAJWA6GL7EMK00949/carsync/notifi...","status":0}}
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.616723 RVI_CONSUMER [INFO] registration complete af-
ter 1 attempts
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.616771 RVI_CONSUMER [DEBUG] RVI setup complete
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.616850 CIVG [INFO] VBS Client initialized. Protocol
Version: 1.0.0; VIN: SAJWA6GL7EMK00949
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.616888 CIVG_RPMANAGER [DEBUG] Initializing RPManager
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.618134 CIVG [INFO] Update notification received.
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.618787 CIVG [INFO] Checking available configuration.
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.618852 CIVG [DEBUG] Sending RPC Config request. RPC
Id: 548038440
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.618892 CIVG [DEBUG] Sending BaseMessage. Timestamp:
1417689156
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.619240 RVI_PRODUCER [DEBUG] publish to:
jlr.com/backend/carsync/configuration/request
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.619295 RVI_PRODUCER [DEBUG] node: http://lo-
calhost:8811
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.619338 RVI_TOOLS [DEBUG] request: { "jsonrpc":
"2.0", "method": "message", "id": "1", "params": { "service_name": "jlr.com/backend/car...
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.625485 RVI_TOOLS [DEBUG] status code: 200
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.626839 RVI_TOOLS [DEBUG] body:
{"jsonrpc":"2.0","id":"1","result":{"status":0}}
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.627038 RVI_TOOLS [DEBUG] sent: 0
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.777568 RVI_CONSUMER [DEBUG] client connected to /con-
figuration/response
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.777702 RVI_CONSUMER [DEBUG] method: POST
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.777765 RVI_CONSUMER [DEBUG] got request:
{"jsonrpc":"2.0","id":1,"method":"message","params":{"service_name":"/SAJWA6GL7EM...DQOMEAB"}}}
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.777857 RVI_CONSUMER [DEBUG] got configuration re-
sponse message
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.777900 RVI_CONSUMER [DEBUG] OK response: { "jsonrpc":
"2.0","result":{"status":0},"id":"1"}
Dec 04 02:32:36 ivi_box civg_service[1312]: 1417689156.778292 CIVG [WARN] Received RPC error. Code: 2; Rea-
son: wrong RP
Dec 04 02:32:37 ivi_box civg_service[1312]: Compiled without SSL support, serving unencrypted
Dec 04 02:32:37 ivi_box civg_service[1312]: Listening on port 9000
Dec 04 02:32:37 ivi_box civg_service[1312]: 1417689157.146225 CIVG_WS_ADAPTER [INFO] starting server...
Dec 04 02:38:35 ivi_box systemd[1]: Stopping CarSync In Vehicle Gateway service...
Dec 04 02:38:35 ivi_box systemd[1]: Stopped CarSync In Vehicle Gateway service.

```

2.1 CIVG configuration

By default CIVG will look for local RVI node at `http://localhost:8811` This is also a default address which vehicle RVI node listens on, so there should be no need for configuration.

The VIN is configured in the CIVG configuration file. The simplest way to do this is to edit the file `/var/lib/civg/config/config_example.json` and change the VIN there.

```

{
    "VIN": "SAJWA6GL7EMK00949",
    "rvi_node": "http://localhost:8811",

    "installedConfig" :
    [

```

```

    {
      "uuid": "3d409d5b-3efc-40ae-a746-84662e7calad",
      "version": {"major": 1, "minor": 0, "build": 0}
    }
  ]
}

```

NOTE:

However, if the CIVG configuration file: `/var/lib/civg/config/config_example.json` has to be edited, then the new configuration should be reinitialized by running:

```
root:~>civg_config /var/lib/civg/config/config_example.json
```

2.2 Configuration of local RVI node

According to the configuration file: `/opt/rvi-0.2.3/sys.config` the local RVI node connects with a backend RVI node at: 148.251.87.173:15701. Below the content of the config file is presented. Edit it if the backend is an another location.

`/opt/rvi-0.2.3/sys.config:`

```

[{{lager, [{handlers, [{lager_console_backend, info}]}]},
 {rvi,
  [{node_address, "0. 0. 0. 0:0"},
   {node_service_prefix, "jlr.com/vin/"},
   {static_nodes, [{"jlr.com/backend/", "148. 251. 87. 173:15701"}]},
   {components,
    [{service_edge,
      [{url, "http://127. 0. 0. 1:8811"},
       {exo_http_opts, [{port, 8811}]},
       {websocket, [{port, 8818}]}]},
     {service_discovery,
      [{url, "http://127. 0. 0. 1:8812"}, {exo_http_opts, [{port, 8812}]}]},
     {schedule,
      [{url, "http://127. 0. 0. 1:8813"}, {exo_http_opts, [{port, 8813}]}]},
     {authorize,
      [{url, "http://127. 0. 0. 1:8814"}, {exo_http_opts, [{port, 8814}]}]},
     {protocol,
      [{url, "http://127. 0. 0. 1:8815"}, {exo_http_opts, [{port, 8815}]}]},
     {data_link,
      [{url, "http://127. 0. 0. 1:8816"},
       {exo_http_opts, [{port, 8816}]},
       {bert_rpc_server, [{port, 8817}]}]}]}]}]}.

```

2.4 Launching JLR demo application on the device

Current version of HMI app:

⑩ intelPoc10.HomeScreen.wgt.20141028_1

To install it on the box issue the following command:

```
$ wrt-installer -i intelPoc10.HomeScreen.wgt.20141028_1
```

To launch the app enter from the command line:

```
$ wrt-launcher -d -s intelPoc10.HomeScreen
```

To stop it:

```
$ wrt-launcher -k intelPoc10.HomeScreen
```

To remove it:

```
$ wrt-installer -un intelPoc10.HomeScreen
```

Download links

⑩ **civg-2.0.0-19.20141215.i686.rpm** ->

<https://atlassian.arynga.pl/confluence/download/attachments/19202335/civg-2.0.0-19.20141215.i686.rpm?api=v2>

⑩ **rvi-0.2.3-20150115.i686.rpm** ->

<https://atlassian.arynga.pl/confluence/download/attachments/19202335/rvi-0.2.3-20150115.i686.rpm?api=v2>

⑩ **dumm-0.1.0-3.i686.rpm** ->

<https://atlassian.arynga.pl/confluence/download/attachments/19202335/dumm-0.1.0-3.i686.rpm?api=v2>

⑩ **intelPoc10.HomeScreen.wgt.20141028_1** ->

https://atlassian.arynga.pl/confluence/download/attachments/19202335/intelPoc10.HomeScreen.wgt.20141028_1?api=v2

Appendix

Resetting demo on the device

Files required to restore demo to initial state are added to CIVG RPM and installed in /var/lib/civg/.demo

Demo reset script is called demoreset.sh and can be executed by issuing:

```
root:~> /var/lib/civg/.demo/demoreset.sh
```

It stops service, restores AudioSettings to initial version, regenerates civg config and starts civg again.

In this folder initial version of file from which the demo starts (AudioSettings.1.0) is also installed by .rpm.

NOTE: that RVI service sometimes has to be restarted as well. Restart it before executing demoreset.sh

NOTE: In case of questions that concern resetting the Back Office system to its initial state prior to demo, contact Jan Murlewski,

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