

Technical Note

Grayhill Vehicle Solutions

Date: May 7, 2021
Revision: B
Subject: Linux - Upgrade existing Qt 5.9.3 Libraries to Qt 5.12.2
Reference: VSTN2021-01

Intended Audience

This technical note is intended for customers currently using Qt 5.9.3 libraries on a Virtual Machine (e.g. 5.9.3 Rev C). Please note that the name of the VM is 5.9.3 and was named as such to indicate this VM was released to support Qt 5.9.3. This VM is based off Ubuntu 16.04 and with the following modifications supports Qt 5.12.2 libraries.

Introduction

This technical note provides the necessary instructions for upgrading an existing VM (e.g. Grayhill 3Dxx Qt 5.9.3) to support the release of Qt 5.12.2 libraries.

Prerequisites

The following conditions must be true:

- Existing Linux VM with Qt 5.9.3 installed
- Existing 3Dxx display also configured for Qt5.9.3
- Ethernet connection to the 3Dxx display
- RS232 (serial) connection to the 3Dxx display

Procedure

While these instructions make every attempt to be complete, certain discrepancies may occur based on the user's actual development environment.

[VM] Download Qt 5.12.2 files

- Launch Firefox internet browser (Applications → Internet)
- Navigate to www.grayhill.com/qt43d and download
 - QtGhUpgrade5122Linux
- Copy/move the downloaded file to `/home/ghguest`

[3Dxx] Determine IP address of the display

Using the RS232 connection to the 3Dxx display

- `ifconfig eth0`

[VM] Update "gmd" reference to display's IP address

Update `/etc/hosts` with `net.net.net.host gmd`

- Open a terminal window and `cd` to home (**cd**)
- `vi /etc/hosts` or `gedit /etc/hosts`
 - verify/update `gmd` value with the IP address discovered above

[VM] Unarchive the files

The self-extracting archive should already be set to executable, but if not

- `chmod 755 QtGhUpgrade5122Linux`
- `./QtGhUpgrade5122Linux`

[VM] Make installation script executable

- `chmod 755 QtGhUpgrade5122LinuxInstall`

[VM] Install Qt 5.12.2 support files on the VM and display

N.B. The script prompts for the sudo password, **DO NOT TYPE** anything; the script provides the password.

- ./QtGhUpgrade5122LinuxInstall

The above script without any arguments defaults to updating both the VM and the display. To update additional displays, connect the 3Dxx and update **gmd** (see above) with the IP address then re-run the installation script to configure the display.

- ./QtGhUpgrade5122LinuxInstall 3dxx

[VM] Verify Qt Creator is configured for “gmd” vs. hard coded IP

- Launch Qt Creator
- Verify “Host name:” is set to gmd (Tools → Options → Devices (left hand column) → Devices (tab))

[VM] Verify sample project builds and runs on target

- Launch Qt Creator (if not running)
- Open Project
 - For 3Dxx displays running linux 3.0.35 kernel (-100 series), use project GrayhillExamples/ghQmlDemo/ghQmlDemo.pro
 - For 3Dxx displays running linux 4.1.15 kernel (-200 series), use project GrayhillExamples/ghQmlDemo4115/ghQmlDemo4115.pro
- Select Projects (wrench icon)
- Select Build under Qt-5.12.2-3Dxx
- Expand qmake
- Verify qmake “Additional arguments:” is set correctly
 - For the ghQmlDemo (linux 3.0.35, -100 series) project, set to
“hw_present=yes target=3D70”

Note: for **target** setting, use 3D70, 3D50, or 3D2104 based on actual display.

- For the ghQmlDemo4115 (linux 4.1.15, -200 series) project, set to

“hw_present=yes target=3D70 kernel=4”

Note: for **target** setting, use 3D70, 3D50, 3D2104, or 3D101 based on actual display.

- Build, deploy and run the project by clicking on the green triangle

[VM] (optional) Verify sample project builds and runs on desktop

- Terminate previously running application (Application Output tab → red square)
- Select Projects (wrench icon)
- Select Build under Desktop Qt 5.9.3 GCC 64 bit
- Verify qmake “Additional arguments:” is set correctly
 - For the ghQmlDemo (linux 3.0.35, -100 series) project, set to

“target=3D70”

Note: for **target** setting, use 3D70, 3D50, or 3D2104 based on desired display simulation

- For the ghQmlDemo4115 (linux 4.1.15, -200 series) project, set to

“target=3D70 kernel=4”

Note: for **target** setting, use 3D70, 3D50, 3D2104, or 3D101 based on desired display simulation

- Build, deploy and run the project by clicking on the green triangle

Troubleshooting

- A “No Valid Settings Found” window appeared.
 - This is okay as the upgrade files were pre-configured using Qt Creator 4.4.1 (original version on the 5.9.3 VM). If Qt Creator has been upgraded, the kit will need to be selected and possibly updated. After clicking on “OK”, a “Configure Project” screen appears, select Qt-5.12.2-3Dxx and click “Configure Project”. Leave the other boxes in their default selection.