Installing the eBUS SDK for Vision Components (VC) Nano Smart Cameras

The following document outlines how to install the eBUS SDK on a VC Nano camera as well as how to build and run a sample which transmits images from the VC Nano camera over a network using the GigE Vision protocol. This sample also includes GenICam control to toggle on and off the barcode reading functionality built into the VC processing libraries. The documentation assumes that you have pre-installed the VC Linux Operating System as well as the VC processing libraries on the VC Nano camera.

Specifically, the following Vision Components software packages/libraries are required:

- VC Linux Operating System
  - arm-linux-gnueabihf version 4.9 (or higher)
- VC processing libraries as below (or higher)
  - vclib.so.6.8.0
  - vcflib.so.5.1.0
  - vclinux.so.3.7.2

In addition, the following library is also required:

- libstdc++.so.6.0.25
  - This can be downloaded here: https://packages.debian.org/buster/all/libstdc++6-armhf-cross/download

Finally, for the eBUS SDK, the following package is required (or a higher version):

- eBUS_SDK_linux-gnueabihf-arm-6.2.0-5290.deb

NOTE: In order to access version 6.2.0.5290 of the eBUS SDK for 32-bit ARM (hard-float) platforms, please contact your Pleora support representative, support@pleora.com

1. OS Version and CPU of the VC Nano Camera

Linux VC-Z 3.14.79-vc-z #2 SMP PREEMPT Wed Apr 24 18:33:06 CEST 2019 armv7l GNU/Linux

2. Install the Kernel Header files

sudo apt-get install linux-headers-3.14.79-vc-z

3. Install the eBUS SDK

- Copy the eBUS SDK installation package to the VC Nano Camera
- Install the eBUS SDK:
  sudo dpkg –i eBUS_SDK_linux-gnueabihf-arm-6.2.0-5290.deb
- Restart the VC Nano Camera
- The ROOT PATH of eBUS SDK
  /opt/pleora/ebus_sdk/linux-gnueabihf-arm

***NOTE:** The installation of this version may fail at last stage and omit error:

CC [M] /opt/pleora/ebus_sdk/linux-gnueabihf-arm/module/ebUniversalProForEthernet/LFT_Module.o
*/usr/src/linux-headers-3.14.79-vc-z/scripts**/recordmcount:** 1: /usr/src/linux-headers-3.14.79-vc-z/scripts/recordmcount: Syntax error: end of file unexpected*
scripts/Makefile.build:308: recipe for target '/opt/pleora/ebus_sdk/linux-gnueabihf-arm/module/ebUniversalProForEthernet/LFT_Module.o' failed

The error above is obtained because the **recordmcount** file in the kernel is corrupted. Despite this error, the eBUS SDK has installed on your device and you can ssh into the device again.

4. Build SoftDeviceGEV for VC Nano Cameras under the eBUS SDK Samples

- The SoftDeviceGEV sample updated for use with the Vision Components processing libraries on VC Nano Cameras, can be found on github.

https://github.com/Pleora/eBUS-Device-Integration-Samples/tree/master/Vision-Components/Zynq

- More information about the sample itself and pre-requisites to be installed can be found in the ReadMe.txt file
- This sample should be copied to the following directory on the VC Nano camera:
  /opt/pleora/ebus_sdk/linux-gnueabihf-arm/share/samples/

  NOTE: Rename the existing SoftDeviceGEV sample directory to SoftDeviceGEV_Original prior to copying the VC Nano specific camera to the directory above.

- Additional information on building the sample can be found in the eBUS SDK for Linux Quick Start Guide:

https://supportcenter.pleora.com/servlet/fileField?entityId=ka00y0000004fwpAAA&field=File__Body__s

5. Run the SoftDeviceGEV for VC Nano Cameras

This Sample will stream an image from the VC Nano camera over Ethernet using the GigE Vision protocol. In addition, this sample also allows you to enable/disable the barcode reading functionality of the VC processing libraries via a GenApi function. Please prepare a receiver to receive the image before run the sample (you can use eBUS player). You can find the IP address of the VC camera by running the ifconfig command.

On the receiver PC running eBUS Player, please choose the address of eth0 for connection after the steps below are performed on the VC Nano camera.

In order to run the sample on the VC Nano camera, navigate to: /opt/pleora/ebus_sdk/linux-gnueabihf-arm/share/samples/SoftDeviceGEV, and then run ./SoftDeviceGEV

The Sample will show the selection for you to choose after running:

0) eth0 : xx:xx:xx:xx:xx:xx
   NOTE: xx:xx:xx:xx:xx:xx represents the MAC address of eth0

Please select the 0 and press the Enter key.

“eBUS GigE Vision Device started” will be displayed. Now the receiver should be able to receive the images from the VC Nano camera.

Push any key on the keyboard will stop the sample.

6. Run the SoftDeviceGEV for VC Nano Cameras at Camera Boot-up Time

In order to run the VC Nano camera specific SoftDeviceGEV camera application when the camera powers up, please refer to the “ReadMe_Boot Into Application.txt” file located on github: https://github.com/Pleora/eBUS-Device-Integration-Samples/tree/master/Vision-Components/Zynq