VCA Modules and Apps Installation on Debian Host

PREPARATION:

Download source files from:

https://downloadcenter.intel.com/download/26818/Intel-Visual-Compute-Accelerator-Source-Files?product=87380

INSTALLATION:

1. Install Debian

Download and install linux Debian OS (newest version), from: https://www.debian.org/CD/http-ftp/

2. Prepare workspace.

a) Extract IntelVisualComputeAccelerator_source_<build_version>.zip

b) Create workpace directory on host (eg. **mkdir $HOME/workspace**)

c) Copy files **daemon-vca-<build_version>-0.src.rpm** and **vcass-modules-<build_version>-0.src** to your workspace on Debian host. (eg. using WinSCP)

3. Install required packages. AS ROOT

```
apt-get install ipcalc
apt-get install bridge-utils
apt-get install alien
apt-get install libxml2-dev
```

3b. For Software 1.5 and above. AS ROOT

```
apt-get install cmake
apt-get install libboost1.55-all-dev
```

4. Download kernel source to usr/src. AS ROOT

Package name suffix might differ, but 3.16 is required

```
cd /usr/src
apt-get source linux-source-3.16
cd linux-3.16*
```

5. Patch kernel. AS ROOT

<patch_directory> must be absolute path to folder with patches

```
for i in <patch_directory>/*.patch; do patch -p1 < $i; done  #eg. for i in $HOME/patches/*.patch; do patch -p1 < $i; done
```

6. Compile patched kernel. AS ROOT

All those commands must be run at linux-source-3.16 directory

#if make oldconfig fails run 'make config' and accept default values

#<n_jobs> is number of jobs to run compilation in parallel. make -j$(nproc) will run compilation with all available cores.

```
make oldconfig
make -j<n_jobs>
make modules_install
make install
```

7. Switch to new kernel. AS ROOT

a) Open /boot/grub/grub.cfg file (eg. nano) or display it (eg. cat).

b) In this file find entry called 'Debian GNU/Linux, with Linux 3.16.*'.

c) Copy this name. (eg. 'Debian GNU/Linux, with Linux 3.16.43')

d) Edit file /etc/default/grub.

> Paste copied name as GRUB_DEFAULT variable. It should look like GRUB_DEFAULT="Debian GNU/Linux, with Linux 3.16.43".

e) Save changes and exit editor.

f) Call

```
update-grub
```

g) You should receive Warning message like:

> Warning: Please don't use old title `Debian GNU/Linux, with Linux 3.16.43' for GRUB_DEFAULT,
> use `Advanced options for Debian GNU/Linux>Debian GNU/Linux, with Linux 3.16.43' (for versions before 2.00)
> or `gnulinux-advanced-01bab6d2-882b-4006-912c-4ee8af0d81dc>gnulinux-3.16.43-advanced-01bab6d2-882b-4006-912c-4ee8af0d81dc' (for 2.00 or later)

h) Copy highlited part of warning from **YOUR** warning message.

i) Change GRUB_DEFAULT variable to copied string.

> It should look like
> GRUB_DEFAULT="gnulinux-advanced-01bab6d2-882b-4006-912c-4ee8af0d81dc>gnulinux-3.16.43-advanced-01bab6d2-882b-4006-912c-4ee8af0d81dc"
> Keep in mind that your GRUB_DEFAULT variable might be different than one in this instruction.

j) Call

```
update-grub
```

k) Reboot system. Now you should have Debian with patched kernel.

8. Prepare extra modules folder. AS ROOT

a) Run "uname -r". Output should be kernel name that you just complied.

b) Make folder for extra modules

```
mkdir /lib/modules/`uname -r`/extra
```

9. Prepare source files for installation. AS ROOT

a) Go to directory where you have source files copied using cd ("cd $HOME/workspace" if you use path from instruction)

b) Run those commands remembering to replace <APPS_DIR> and <MODULES_DIR> with directory names you want them to be extracted to:

```
alien --to-deb vcass-modules-<build_version>-0.src.rpm
alien --to-deb daemon-vca-<build_version>-0.src.rpm
dpkg -x daemon-vca_<build_version>-1_amd64.deb <APPS_DIR>
dpkg -x vcass-modules_<build_version>-1_amd64.deb <MODULES_DIR>
```

WARNING!

<MODULES_DIR> and <APPS_DIR> must be different!

10. Install modules and apps. AS ROOT

a) Go to directory where you have kernel patches using cd.

b) Set vca_debian_install.sh execution permission

```
chmod 755 vca_debian_install.sh
```

c) Run vca_debian_install.sh script from patches package as follows:

For software version **1.5 and below**:

```
./vca_debian_install.sh <MODULES_DIR> <APPS_DIR> "l1om" <VCA_SW_VERSION>
eg.
./vca_debian_install.sh $HOME/workspace/modules/ $HOME/workspace/apps/
"l1om" 1p5
```

For software version **2.0 and above**

```
./vca_debian_install.sh -a <APPS_DIR> -m <MODULES_DIR> -v <VCA_SW_VERSION>
eg.
./vca_debian_install.sh -a $HOME/workspace/apps/ -m
$HOME/workspace/modules/ -v 2p0
```