

R-CarGen3 AudioDSP - Task #163175

Task # 160903 (In Progress): [MMP] Improve ADSP and Audio

[MMP] Trial porting ADSP

06/08/2022 03:28 PM - Tai Nguyen

Status:	In Progress	Start date:	06/08/2022
Priority:	Normal	Due date:	06/13/2022
Assignee:	Tai Nguyen	% Done:	100%
Category:		Estimated time:	36.00 hours
Target version:	Study	Spent time:	2.00 hours
Description Purpose Trial porting ADSP to kernel 5.15.45 Get experience, write document Sharing with team members. TODO Investigate how to porting ADSP on kernel Port ADSP module on kernel 5.15.45 Create document, sharing knowledge for team members. INPUT Documents of ADSP: \\rvc-vnas-01\Android\Supplier\rcmw_mmp\2022\ADSP\Kernel_5.15.45 Related documents describe in \\rvc-vnas-01\Android\Supplier\rcmw_mmp\2022\ADSP\Porting-ADSP-module-on-Linux-Kernel.docx OUTPUT Result of porting Report.			

History

#1 - 06/20/2022 02:09 PM - Tai Nguyen

- Status changed from New to In Progress
- % Done changed from 0 to 50
- Estimated time set to 20.00 h

Dear Thao-san,

I have finished porting ADSP modules on Linux Yocto v5.9.0 for Ebisu board with following steps:

```
- mkdir Porting_ADSP
- cd Porting_ADSP
- git clone poky, meta-renesas, meta-openembedded from local server or online (os member only clone from local
  server)
  Checkout to correct commit of Yv5.9.0
  poky commit ID: 74b22db6879b388d700f61e08cb3f239cf940d18
  meta-renesas commit ID: 13fd24957b9acc29a235ee0c7f398fd867f38b47
  meta-openembedded commit ID: 814eec96c2a29172da57a425a3609f8b6fcc6afe
- cd ../Porting_ADSP/meta-renesas
- sh meta-rcar-gen3/docs/sample/copyscript/copy_proprietary_softwares.sh /shsv/RCarSW/rvc_git_repo/yocto/_YOC
  TO_IMAGES_/Gen3/v5.9.0/binaries_dir_PT3
- cd ../../Porting_ADSP
- source poky/oe-init-build-env
--> after source, it will create a folder: "Porting_ADSP/build", "Porting_ADSP/build/conf" and auto move to th
  is directory "Porting_ADSP/build"
- cp ../meta-renesas/meta-rcar-gen3/docs/sample/conf/<board-name>/poky-gcc/mmp/local-wayland.conf conf/local.c
  onf
- cp ../meta-renesas/meta-rcar-gen3/docs/sample/conf/<board-name>/poky-gcc/mmp/bblayers.conf conf/bblayers.con
  f
--> porting for E3: board-name = ebisu
  porting for H3/M3/M3N: board-name = salvator-x
At the file "Porting_ADSP/build/conf/local.conf":
```

```

- Add following code at the end of file.
  SOURCE_MIRROR_URL ?= "file:///shsv/Android/Supplier/TaiNguyen/phucche/downloads" --> OS member can't access to internet so they need a local repository for downloads.
  INHERIT += "own-mirrors"
  CONNECTIVITY_CHECK_URI = ""
  BB_NO_NETWORK = "1" --> OS member build Yocto offline so they need set this option
- Enable (remove #) this line of file: DISTRO_FEATURES_append = " adsp"
- cd Porting_ADSP/build
- bitbake linux-renesas
- bitbake -c cleanall adsp-if-module
- bitbake -c cleanall kernel-module-xtensa-hifi
- bitbake -c cleanall adsp-fw-module
- bitbake adsp-fw-module
- bitbake kernel-module-xtensa-hifi
- bitbake adsp-if-module
- bitbake core-image-weston

```

When build yocto is finished. The output (Image, device tree, ...) are under "Porting_ADSP/build/tmp/deploy/images/ebisu"

Use output after building to boot board. Check these item to confirm successfully porting ADSP module

- Check below messages in the boot log:

```

rcar_adsp_sound adsp_sound: probed
...
ADSP base was created
...
ALSA device list:
#0: rcar-sound

```

- Check modules loaded on board:

```

root@ebisu:~# lsmod
Module                Size  Used by
xtensa_hifi            40960  0
pvrsrvkm              1179648  0
vsp2                   69632  0
vspm                   94208  1 vsp2
uio_pdrv_genirq        16384  0
ipv6                   442368  20
root@ebisu:~#

```

- Check sound devices for ADSP module enable from file device tree:

```

root@ebisu:~# cat /proc/asound/pcm
00-00: fe.adsp-dai.0 (*) : : playback 1 : capture 1
00-01: fe.adsp-dai.1 (*) : : playback 1 : capture 1
00-02: fe.adsp-dai.2 (*) : : playback 1 : capture 1
00-03: fe.adsp-dai.3 (*) : : playback 1 : capture 1
00-04: fe.rsnd-dai.0 (*) : : playback 1 : capture 1
root@ebisu:~#

```

Best regards,
Tai Nguyen

#2 - 06/21/2022 03:02 PM - Tu Trinh (RCMW)

Hi Tai-san,

Thanks for your report. I got it.

As our discussion in daily meeting, you will proceed next AI is Port ADSP module on kernel 5.15.45 when lab PC issue is fixed and remember to record the step by step porting into slide (or .doc) for reference.

Thanks

BRs,
Tu Trinh

#3 - 06/28/2022 11:10 AM - Tai Nguyen

- % Done changed from 50 to 70

- Estimated time changed from 20.00 h to 28.00 h

Dear all,

I would like to update result and steps of porting ADSP on Linux 5.15.45.

Result: finished to porting for E3. Using output to boot board E3 and it working OK.

Steps:

I re-use environment at <http://172.29.143.164:8080/issues/163175#note-1> after finished build for Yv5.9.0. build directory is /data1/tainguyen/Build_YOCTO/Porting_ADSP/build

1. Copy linux 5.15.45 from server and extract package:

```
cp /shsv/Android/Supplier/rcmw_mmp/2022/ADSP/Kernel_5.15.45/linux-5.15.45.tar.xz /data1/tainguyen/Build_YOCTO/Porting_ADSP/
cd /data1/tainguyen/Build_YOCTO/Porting_ADSP/
tar -xf linux-5.15.45.tar.xz
```

2. Replace **kernel-source** folder.

```
rm -rf /data1/tainguyen/Build_YOCTO/Porting_ADSP/build/tmp/work-shared/ebisu/kernel-source
mkdir /data1/tainguyen/Build_YOCTO/Porting_ADSP/build/tmp/work-shared/ebisu/kernel-source
cp -r /data1/tainguyen/Build_YOCTO/Porting_ADSP/linux-5.15.45/* /data1/tainguyen/Build_YOCTO/Porting_ADSP/build/tmp/work-shared/ebisu/kernel-source
```

3. Build linux renesas.

```
cd /data1/tainguyen/Build_YOCTO/Porting_ADSP/
source poky/oe-init-build-env build/
bitbake -c cleanall linux-renesas
bitbake linux-renesas
bitbake -c cleanall adsp-if-module
bitbake -c cleanall kernel-module-xtensa-hifi
bitbake -c cleanall adsp-fw-module
bitbake adsp-fw-module
bitbake kernel-module-xtensa-hifi
bitbake adsp-if-module
bitbake core-image-weston
```

After finishing build , do as following note#1 to boot and confirm porting ADSP module successful or not.

Dear Thao-san,

I don't have any problem when porting ADSP on Linux 5.15.45. After build, I also check patch files and they are all applied.
If I have any mistake please let me know.

Hello Tu-san,

The document - .ppt/.docx I will update after Thao-san confirm the result and steps.

Thank you and Best regards,
Tai Nguyen

#4 - 06/28/2022 11:52 AM - Tai Nguyen

Dear all,

I was wrong in some steps, I will try to re-build again and update later
BR,

#5 - 06/30/2022 06:33 PM - Tai Nguyen

- Estimated time changed from 28.00 h to 36.00 h

Dear Thao-san,

The steps to porting ADSP that I reported in note3 are wrong, it still porting for linux 5.10.41.

I update status of this task:

- Finished to compile and build **linux-renesas**
- Still debug and modify to build **core-image-weston**

Steps to compile and build **linux-renesas** :

Modify file **linux-renesas_5_10.bb** to build with kernel 5.15.45

```
RENESAS_BSP_URL = " \
    git://github.com/renesas-rcar/linux-bsp.git"
BRANCH = "v5.10.41/rcar-5.1.4"
SRCREV = "4846ef7755062737891d10bf15da4721bfb79b04"

SRC_URI = "file:///data1/tainguyen/Build_YOCTO/Porting_ADSP/linux-5.15.45.tar.xz"
S = "/data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45/build/tmp/work-shared/ebisu/kernel-s
ource"
LINUX_VERSION ?= "5.15.45"
PV = "${LINUX_VERSION}"
PR = "r1"
```

then:

```
bitbake -c cleanall linux-renesas
bitbake linux-renesas -c compile -f
- it will failed, then I do next steps:
cp -rf ../../linux-5.15.45/* ./tmp/work-shared/ebisu/kernel-source/
- linux-5.15.45 is directory where linux-5.15.45.tar.xz was extracted
```

* apply patch 0003-ADSP-remove-HDMI-support-from-rcar-sound.patch need modify:
"build/tmp/work-shared/ebisu/kernel-source/arch/arm64/boot/dts/renesas/r88a77950-salvator-x.dts" --> refer to
linux bsp of v5.10.41

```

* apply patch 0004-ADSP-integrate-ADSP-sound-for-H3-M3-M3N-board.patch need modify:
"build/tmp/work-shared/ebisu/kernel-source/arch/arm64/boot/dts/renesas/salvator-common.dtsi" --> refer to linux
x bsp of v5.10.41

* apply patch 0005-ADSP-add-build-for-ADSP-sound-driver.patch need modify:
"build/tmp/work-shared/ebisu/kernel-source/sound/soc/Kconfig" --> refer to linux bsp of v5.10.41

* apply patch 0006-ADSP-integrate-ADSP-sound-for-E3-board.patch need copy file "r8a77990-es10-ebisu.dts" from
linux-renesas-bsp to:
"build/tmp/work-shared/ebisu/kernel-source/arch/arm64/boot/dts/renesas/r8a77990-es10-ebisu.dts" because linux
5.15.45 lack of it.

* lack of "sound/soc/sirf" --> copy from linux-renesas-bsp
* lack of "sound/soc/txx9" --> copy from linux-renesas-bsp
* lack of "sound/soc/zte" --> copy from linux-renesas-bsp

* Add these line into "build/tmp/work-shared/ebisu/kernel-source/arch/arm64/boot/dts/renesas/Makefile" :
    dtb-$(CONFIG_ARCH_R8A77990) += r8a77990-ebisu.dtb
    dtb-$(CONFIG_ARCH_R8A77990) += r8a77990-ebisu-4d.dtb
    dtb-$(CONFIG_ARCH_R8A77990) += r8a77990-es10-ebisu.dtb r8a77990-es10-ebisu-4d.dtb

* when build "r8a77990-ebisu-4d.dtb" there are some errors:
- lack of "kernel-source/arch/arm64/boot/dts/renesas/r8a77990-ebisu-4d.dts" --> copy from linux-renesas-bsp
- lack of "kernel-source/include/dt-bindings/ipmmu/" --> copy from linux-renesas-bsp
- error {/mmngr: Reference to non-existent node or label "mmp_reserved"} --> "mmp_reserved" must include in fi
le "r8a77990-ebisu.dts" so replace "r8a77990-ebisu.dts" from linux-renesas-bsp
- error: Label or path "adsp" not found, Label or path "vspb" not found when build "r8a77990-ebisu.dts" --> a
dsp and vspb must define in "kernel-source/arch/arm64/boot/dts/renesas/r8a77990.dtsi" --> refer from linux-ren
esas-bsp to add 2 node.

* when build "r8a77990-es10-ebisu.dtb" there are some errors:
- lack of file "r8a77990-es10.dtsi" --> copy from linux-renesas-bsp
- error: "Label or path gsx not found" --> gsx must define in "kernel-source/arch/arm64/boot/dts/renesas/r8a77
990.dtsi" --> refer from linux-renesas-bsp to add "gsx".
- error: "Reference to non-existent node or label gsx_opp_table" --> refer from linux-renesas-bsp to add "gsx_
opp_table".
* lack of "r8a77990-es10-ebisu-4d.dts" --> copy from linux-renesas-bsp

```

After modified:

```

bitbake linux-renesas -c compile -f
bitbake linux-renesas -c build -f

```

After build linux-renesas, I build "core-image-weston" and have lot of errors, I fixed some errors with following information:

```

bitbake core-image-weston
* error: objcopy: Unable to recognise the format of the input file `arch/arm64/kernel/vdso/vdso.so.dbg'
/data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45/build/tmp/work-shared/ebisu/kernel-source/arch/arm64/kernel/vdso/Makefile:58: recipe for target 'arch/arm64/kernel/vdso/vdso.so' failed
--> add:
    obj-y += vdso.o
    # Force dependency (incbin is bad)
    $(obj)/vdso.o : $(obj)/vdso.so
in 'kernel-source/arch/arm64/kernel/vdso/Makefile'
--> modify:
    include/generated/vdso-offsets.h arch/arm64/kernel/vdso/vdso.so
    include/generated/vdso-offsets.h #arch/arm64/kernel/vdso/vdso.so
in 'kernel-source/arch/arm64/Makefile' line 202

* error:
--> add: extern void __user *compat_alloc_user_space(unsigned long len);
in file "build/tmp/work-shared/ebisu/kernel-source/include/linux/compat.h"

```

Als: debug, and fix remain issues of porting.

BR,
Tai Nguyen

#6 - 08/18/2022 10:16 AM - Na Bui (FSP1)

Dear Tai-san,

For issue:

```
error: objcopy: Unable to recognise the format of the input file `arch/arm64/kernel/vdso/vdso.so.dbg'
```

You can try by passing CROSS_COMPILE to configure:

```
diff --git a/meta/recipes-kernel/make-mod-scripts/make-mod-scripts_1.0.bb b/meta/recipes-kernel/make-mod-scripts/make-mod-scripts_1.0.bb
index b58fa9a603..f9df345ca5 100644
--- a/meta/recipes-kernel/make-mod-scripts/make-mod-scripts_1.0.bb
+++ b/meta/recipes-kernel/make-mod-scripts/make-mod-scripts_1.0.bb
@@ -19,7 +19,7 @@ DEPENDS += "bc-native bison-native"
    DEPENDS += "gmp-native"

EXTRA_OEMAKE = " HOSTCC="${BUILD_CC} ${BUILD_CFLAGS} ${BUILD_LDFLAGS}" HOSTCXX="${BUILD_CXX} " "
-EXTRA_OEMAKE += " HOSTCXX="${BUILD_CXX} ${BUILD_CXXFLAGS} ${BUILD_LDFLAGS}" "
+EXTRA_OEMAKE += " HOSTCXX="${BUILD_CXX} ${BUILD_CXXFLAGS} ${BUILD_LDFLAGS}" " CROSS_COMPILE=${TARGET_PREFIX} "
```

-> bitbake, We can fix this issue.

Best Regards,
Na Bui

#7 - 08/19/2022 10:52 AM - Tai Nguyen

Dear Na-san,

You can try by passing CROSS_COMPILE to configure:

Thank you for the information. I tried and it passed the issue.

Best regards,

#8 - 08/26/2022 10:12 AM - Na Bui (FSP1)

Dear Tai-san,

FYI, For issue:

```
not found other for:
not found modules for:
not found deltainfo for:
not found updateinfo for:
oe-repo: using metadata from Fri 26 Aug 2022 03:07:38 AM UTC.
No module defaults found
No match for argument: kernel-module-uio-pdrv-genirq
Error: Unable to find a match
```

You can try to ignore it by disabling it in the bb file

```
diff --git a/meta-rcar-gen3/recipes-graphics/images/core-image-renesas-base.inc b/meta-rcar-gen3/recipes-graph
ics/images/core-image-renesas-base.inc
index 94fa06cb..657dfa95 100644
--- a/meta-rcar-gen3/recipes-graphics/images/core-image-renesas-base.inc
+++ b/meta-rcar-gen3/recipes-graphics/images/core-image-renesas-base.inc
@@ -85,7 +85,7 @@ IMAGE_INSTALL_append = " cpufreq-initscripts"
IMAGE_INSTALL_append = " kernel-module-cmemdrv"

# Kernel module UIO
-IMAGE_INSTALL_append = " kernel-module-uio-pdrv-genirq"
+IMAGE_INSTALL_append = " kernel-module-uio-pdrv-genirq"

# OSAL package
IMAGE_INSTALL_append = " \
```

-> bitbake core-image-minimal

Best Regards,

Na Bui

#9 - 09/07/2022 05:02 PM - Tai Nguyen

- Assignee changed from Tai Nguyen to Na Bui (FSP1)

Dear Na-san,

I'm doing task porting Audio with poky 4.0.1, gcc 11.2.
So please help me continue this task.

Thank you and Best regards,
Tai Nguyen.

#10 - 10/28/2022 12:38 AM - Tai Nguyen

- Assignee changed from Na Bui (FSP1) to Tai Nguyen

Dear all,

I continue this task.

I try to port ADSP with following environment:

- poky 4.0.1, commit ID: 8c489602f218bcf21de0d3c9f8cf620ea5f06430
- meta-renesas (kirkstone-dev), commit ID: 7320fd6e4df8d622e741c923eb13c1c355a3972c
- meta-openembedded (kirkstone), commit ID: 0b78362654262145415df8211052442823b9ec9b

Since I have an issue: PC ubuntu lab don't have required tools (pzsstd and zstd) so I can't build yocto with new environment.

I come back to porting with previous environment (Yv5.9.0) and continue build core-image-weston. Some updates information:

```
error:
/data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45/build/tmp/work/ebisu-poky-linux/kernel-module-vspmfif/1.0-r0/git/vspm_if-module/files/vspm_if/drv/vspm_if_main.c: In function 'vspm_ioctl_wait_thread':
| /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45/build/tmp/work/ebisu-poky-linux/kernel-module-vspmfif/1.0-r0/git/vspm_if-module/files/vspm_if/drv/vspm_if_main.c:519:43: error: 'struct task_struct' has no member named 'state'; did you mean '__state'?
|   519 | while ((!priv->thread) || (priv->thread->state == TASK_RUNNING))
|       |                               ^~~~~
|       |                               __state
--> in file "/build/tmp/work-shared/ebisu/kernel-source/include/linux/sched.h", line 723, struct task_struct, __state (in linux 5.10.41, it is "state")
so change file: build/tmp/work/ebisu-poky-linux/kernel-module-vspmfif/1.0-r0/git/vspm_if-module/files/vspm_if/drv/vspm_if_main.c
line 519: while ((!priv->thread) || (priv->thread->state == TASK_RUNNING)) --> while ((!priv->thread) || (priv->thread->__state == TASK_RUNNING))
```

```
error:
/data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45/build/tmp/work/ebisu-poky-linux/kernel-module-mmngrbuf/1.0-r0/git/mmngr_drv/mmngrbuf/mmngrbuf-module/files/mmngrbuf/drv/mmngr_buf_drv.c:330:10: error: initialization of 'int (*) (struct dma_buf *, struct dma_buf_map *)' from incompatible pointer type 'void * (*) (struct dma_buf *)' [-Werror=incompatible-pointer-types]
```

```
330 | .vmap = dmabuf_vmap,
|       ^~~~~~
/data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45/build/tmp/work/ebisu-poky-linux/kernel-module-mmngrbuf/1.0-r0/git/mmngr_drv/mmngrbuf/mmngrbuf-module/files/mmngrbuf/drv/mmngr_buf_drv.c:330:10: note: (near initialization for 'dmabuf_ops.vmap')
/data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45/build/tmp/work/ebisu-poky-linux/kernel-module-mmngrbuf/1.0-r0/git/mmngr_drv/mmngrbuf/mmngrbuf-module/files/mmngrbuf/drv/mmngr_buf_drv.c:331:12: error: initialization of 'void (*) (struct dma_buf *, struct dma_buf_map *)' from incompatible pointer type 'void (*) (struct dma_buf *, void *)' [-Werror=incompatible-pointer-types]
```

```
331 | .vunmap = dmabuf_vunmap,
|       ^~~~~~
--> root cause: the struct "dma_buf_ops" in file "kernel-source/include/linux/dma-buf.h"
is difference in 2 Linux version:
```

```
Linux 5.10.41:
int (*mmap) (struct dma_buf *, struct vm_area_struct *vma);
```

```
void * (*vmap) (struct dma_buf *);
```



```

void (*vunmap)(struct dma_buf *, void *vaddr);
Linux 5.15.45:
int (*mmap)(struct dma_buf *, struct vm_area_struct *vma);

int (*vmap)(struct dma_buf *dmabuf, struct dma_buf_map *map);
void (*vunmap)(struct dma_buf *dmabuf, struct dma_buf_map *map);

```

--> modify file "build/tmp/work/ebisu-poky-linux/kernel-module-mmngrbuf/1.0-r0/git/mmngr_drv/mmngrbuf/mmngrbuf-module/files/mmngrbuf/drv/mmngr_buf_drv.c" :

```

static void *dmabuf_vmap(struct dma_buf *buf)
{
    return NULL;
}

static void dmabuf_vunmap(struct dma_buf *buf, void *vaddr)
{
}

```

to :

```

static int dmabuf_vmap(struct dma_buf *dmabuf, struct dma_buf_map *map);
{
    return NULL;
}

static void dmabuf_vunmap(struct dma_buf *dmabuf, struct dma_buf_map *map)
{
}

```

And

line 122, 123 of build/tmp/work/ebisu-poky-linux/kernel-module-mmngrbuf/1.0-r0/git/mmngr_drv/mmngrbuf/mmngrbuf-module/files/mmngrbuf/include/mmngr_buf_private.h

modify original to :

```

static int dmabuf_vmap(struct dma_buf *dmabuf, struct dma_buf_map *map);
static void dmabuf_vunmap(struct dma_buf *dmabuf, struct dma_buf_map *map);

```

Best regards,
Tai Nguyen

#11 - 11/02/2022 05:38 PM - Tai Nguyen

Dear all,

After request to setup tools was lack of, I can build Yocto with environment describe at note#10. But I have some issues:

- Error when build linux-renesas: Not found the option '-fcf-protection' --> this option make "bitbake linux-renesas" failed when compile **libcc1**. W/A to fix it: disable "-fcf-protection" in the file:

build/tmp/work/x86_64-linux/gcc-cross-aarch64/11.2.0-r0/gcc-11.2.0/build.x86_64-linux.aarch64-poky-linux/libcc1/Makefile. comment line 254 in the file: *#CET_HOST_FLAGS = -fcf-protection*

After apply W/A, build linux-renesas successfully.

- Error when build core-image-weston:

```
ERROR: core-image-weston-1.0-r0 do_rootfs: The postinstall intercept hook 'update_desktop_database' failed
```

It can't found the 'update_desktop_database' when bitbake. W/A to fix it is modify in the file

poky/scripts/postinst-intercepts/update_desktop_database:

```
-update-desktop-database ${D}${desktop_dir}
+/usr/bin/update-desktop-database ${D}${desktop_dir}
```

BRs,

Tai Nguyen

#12 - 11/03/2022 06:53 PM - Tai Nguyen

Dear all,

After fix issue at note#11, I have 2 issues:

1.

```
ERROR: The postinstall intercept hook 'update_gtk_immodules_cache' failed
```

W/A to fix this issue: add this command: **mkdir -p \${D}\${libdir}/gtk-3.0/3.0.0** in the file **poky/scripts/postinst-intercepts/update_gtk_immodules_cache** as below:

```
#!/bin/sh
#
# SPDX-License-Identifier: MIT
#
```

```
set -e
```

```
if [ -x ${libexecdir}/${binprefix}gtk-query-immodules-2.0 ]; then
    PSEUDO_UNLOAD=1 ${binprefix}qemuwrapper -L $D ${libexecdir}/${binprefix}gtk-query-immodules-2.0 \
    > ${libdir}/gtk-2.0/2.10.0/immodules.cache &&
    sed -i -e "s:${D}::" ${libdir}/gtk-2.0/2.10.0/immodules.cache
    chown root:root ${libdir}/gtk-2.0/2.10.0/immodules.cache
fi
if [ -x ${libexecdir}/${binprefix}gtk-query-immodules-3.0 ]; then
    mkdir -p ${libdir}/gtk-3.0/3.0.0
    PSEUDO_UNLOAD=1 ${binprefix}qemuwrapper -L $D ${libexecdir}/${binprefix}gtk-query-immodules-3.0 \
    > ${libdir}/gtk-3.0/3.0.0/immodules.cache &&
    sed -i -e "s:${D}::" ${libdir}/gtk-3.0/3.0.0/immodules.cache
    chown root:root ${libdir}/gtk-3.0/3.0.0/immodules.cache
fi
```

2.

ERROR: core-image-weston-1.0-r0 do_rootfs: The postinstall intercept hook 'update_mime_database' failed

W/A to fix this issue: add this command: **mkdir -p \$D/packages** in the file **poky/scripts/postinst-intercepts/update_mime_database** as below:

```
#!/bin/sh
#
# SPDX-License-Identifier: MIT
#
# Post-install intercept for mime.bbclass

echo "Updating MIME database... this may take a while."
mkdir -p $D/packages
update-mime-database ${mimedir}
```

After fix all issues I build core-image-weston successfully on Ubuntu 18.04

Best regards,
Tai Nguyen

Dear all,

I have 2 issues when build yocto:

1. Issue redefined lib: **stdarg.h**. log look like:

```
|from /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work/ebisu-poky-linux
/kernel-module-gles/1.0-r0/rogue_km/binary_r8a7799_linux_nullws_drm_release/target_aarch64/kbuild/services/ser
ver/env/linux/km_apphint.c:44:
|/data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work-shared/ebisu/kernel-s
ource/include/linux/stdarg.h:6: error: "va_start" redefined [-Werror]
|      6 | #define va_start(v, l)  __builtin_va_start(v, l)
|      |
|In file included from /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work
-shared/ebisu/kernel-source/include/linux/kernel.h:5,
|      |      from /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work
/ebisu-poky-linux/kernel-module-gles/1.0-r0/rogue_km/include/kernel_types.h:42,
|      |      from /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work
/ebisu-poky-linux/kernel-module-gles/1.0-r0/rogue_km/include/img_types.h:70,
|      |      from /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work
/ebisu-poky-linux/kernel-module-gles/1.0-r0/rogue_km/services/shared/include/htbuffer.h:54,
|      |      from /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work
/ebisu-poky-linux/kernel-module-gles/1.0-r0/rogue_km/binary_r8a7799_linux_nullws_drm_release/target_aarch64/kb
uild/services/shared/common/htbuffer.c:49:
| /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work-shared/ebisu/kernel-
source/include/linux/stdarg.h:6: error: "va_start" redefined [-Werror]
|      6 | #define va_start(v, l)  __builtin_va_start(v, l)
|      |
|In file included from /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work
-shared/ebisu/kernel-source/include/linux/kernel.h:5,
|      |      from /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work
/ebisu-poky-linux/kernel-module-gles/1.0-r0/rogue_km/include/kernel_types.h:42,
|      |      from /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work
/ebisu-poky-linux/kernel-module-gles/1.0-r0/rogue_km/include/img_types.h:70,
|      |      from /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work
/ebisu-poky-linux/kernel-module-gles/1.0-r0/rogue_km/services/server/include/lists.h:50,
|      |      from /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work
/ebisu-poky-linux/kernel-module-gles/1.0-r0/rogue_km/binary_r8a7799_linux_nullws_drm_release/target_aarch64/kb
uild/services/server/common/lists.c:45:
| /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work-shared/ebisu/kernel-
source/include/linux/stdarg.h:6: error: "va_start" redefined [-Werror]
|      6 | #define va_start(v, l)  __builtin_va_start(v, l)
|      |
|
```

---> How to fix:

in the file: build/tmp/work/ebisu-poky-linux/kernel-module-gles/1.0-r0/rogue_km/services/shared/common/htbuffer.c, comment line 48, **#include <stdarg.h>**

in the file: build/tmp/work/ebisu-poky-linux/kernel-module-gles/1.0-r0/rogue_km/services/server/include/lists.h, comment line 49, **#include <stdarg.h>**

in the file: build/tmp/work/ebisu-poky-linux/kernel-module-gles/1.0-r0/rogue_km/services/server/include/di_server.h, comment line 46, **#include <stdarg.h>**

2. Functions of file **dma-resv.c** updated in kernel 5.15.45

```
| /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work/ebisu-poky-linux/ker
nel-module-gles/1.0-r0/rogue_km/binay_r8a7799_linux_nullws_drm_release/target_aarch64/kbuild/services/server/e
nv/linux/pvr_buffer_sync.c: In function 'pvr_buffer_sync_pmr_fence_coun':
| /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work/ebisu-poky-linux/ker
nel-module-gles/1.0-r0/rogue_km/binay_r8a7799_linux_nullws_drm_release/target_aarch64/kbuild/services/server/e
nv/linux/pvr_buffer_sync.c:195:29: error: implicit declaration of functin 'dma_resv_get_list'; did you mean 'd
ma_resv_shared_list'? [-Werror=implicit-function-declaration]
|   195 |         resv_list = dma_resv_get_list(resv);
|       |                        ^~~~~~
|       |                        dma_resv_shared_list
| /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work/ebisu-poky-linux/ker
nel-module-gles/1.0-r0/rogue_km/binay_r8a7799_linux_nullws_drm_release/target_aarch64/kbuild/services/server/e
nv/linux/pvr_buffer_sync.c:195:27: error: assignment to 'struct dma_resvlist *' from 'int' makes pointer from
integer without a cast [-Werror=int-conversion]
|   195 |         resv_list = dma_resv_get_list(resv);
|       |                        ^
```

```
| /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work/ebisu-poky-linux/kernel-module-gles/1.0-r0/rogue_km/binay_r8a7799_linux_nullws_drm_release/target_aarch64/kbuild/services/server/env/linux/pvr_buffer_sync.c:196:25: error: implicit declaration of function 'dma_resv_get_excl'; did you mean 'dma_resv_get_fences'? [-Werror=implicit-function-declaration]
| 196 |         fence = dma_resv_get_excl(resv);
|     |                   ^~~~~~
|     |         dma_resv_get_fences
| /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work/ebisu-poky-linux/kernel-module-gles/1.0-r0/rogue_km/binay_r8a7799_linux_nullws_drm_release/target_aarch64/kbuild/services/server/env/linux/pvr_buffer_sync.c:196:23: error: assignment to 'struct dma_fence *' from 'int' makes pointer from integer without a cast [-Werror=int-conversion]
| 196 |         fence = dma_resv_get_excl(resv);
|     |                   ^
| /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work/ebisu-poky-linux/kernel-module-gles/1.0-r0/rogue_km/binay_r8a7799_linux_nullws_drm_release/target_aarch64/kbuild/services/server/env/linux/pvr_buffer_sync.c: In function 'pvr_buffer_sync_check_fences_crate':
| /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work/ebisu-poky-linux/kernel-module-gles/1.0-r0/rogue_km/binay_r8a7799_linux_nullws_drm_release/target_aarch64/kbuild/services/server/env/linux/pvr_buffer_sync.c:254:27: error: assignment to 'struct dma_resvlist *' from 'int' makes pointer from integer without a cast [-Werror=int-conversion]
| 254 |         resv_list = dma_resv_get_list(resv);
|     |                   ^
| /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work/ebisu-poky-linux/kernel-module-gles/1.0-r0/rogue_km/binay_r8a7799_linux_nullws_drm_release/target_aarch64/kbuild/services/server/env/linux/pvr_buffer_sync.c:255:23: error: assignment to 'struct dma_fence *' from 'int' makes pointer from integer without a cast [-Werror=int-conversion]
| 255 |         fence = dma_resv_get_excl(resv);
```

--> Root cause: Because the difference in the file **build/tmp/work-shared/ebisu/kernel-source/drivers/dma-buf/dma-resv.c** of linux 5.15.45

--> How to fix: Modify file

build/tmp/work/ebisu-poky-linux/kernel-module-gles/1.0-r0/rogue_km/binay_r8a7799_linux_nullws_drm_release/target_aarch64/kbuild/services/server/env/linux/pvr_buffer_sync.c following:

Using ***dma_resv_shared_list*** instead of ***dma_resv_get_list***

Using ***dma_resv_excl_fence*** instead of ***dma_resv_get_excl***

After fixed issues and disable "kernel-module-uisp-pdrv-genirq" as Na-san comment in note#8, I can build core-image-weston. But it still failed when load kernel module.

Als: try to build Yv5.9.0 with disable "kernel-module-uisp-pdrv-genirq"

Build core-image-weston kernel 5.15.45 with enable "kernel-module-uisp-pdrv-genirq"

Best regards

Tai Nguyen

#14 - 11/14/2022 02:38 PM - Tai Nguyen

- File `boot_log_E3_Linux5.15.45poky401FixUIOAddSomeFiles.txt` added

Dear all,

Als: try to build Yv5.9.0 with disable "kernel-module-uido-pdrv-genirq"
Build core-image-weston kernel 5.15.45 with enable "kernel-module-uido-pdrv-genirq"

I have complete above Als:

- The module: "kernel-module-uido-pdrv-genirq" is default not enable in kernel 5.15.45 so when we build core-image-weston it will fail
- To enable "kernel-module-uido-pdrv-genirq", we can add following config to the file:

build/tmp/work-shared/ebisu/kernel-source/arch/arm64/configs/defconfig

```
CONFIG_UIO=y  
CONFIG_UIO_PDRV_GENIRQ=m
```

- Bitbake linux-renesas again, then we can found the "uido" package. for example:

kernel-module-uido-pdrv-genirq-5.15.45-yocto-standard-5.15.45-r1.ebisu.rpm in

build/tmp/work/ebisu-poky-linux/linux-renesas/5.15.45-r1/deploy-rpms/ebisu/

- But when use image which enable UIO module, other modules (adsp, vsp2, ...) seem nothing difference if check the log (they still failed)

After that, I try to find the difference between kernel 5.15.45 and 5.10.41, especially files which Renesas maintain.

and then I found some useful info:

- The file: **arch/arm64/configs/defconfig** in 2 kernels are differ. So I modify **defconfig** in kernel 5.15.45 following kernel 5.10.41

- Kernel 5.15.45 lack of some files: `rcar-avs.c`, `rcar-topology.c`, `rcar_ems_ctrl.c` (in folder:

build/tmp/work-shared/ebisu/kernel-source/drivers/soc/renesas); `rcar_ems_ctrl.h` (in folder

build/tmp/work-shared/ebisu/kernel-source/include/linux/soc/renesas) --> Copy these files from Kernel 5.10.41

- The file: **build/tmp/work-shared/ebisu/kernel-source/drivers/soc/renesas/rcar_ems_ctrl.c** use macro **CPUFREQ_ADJUST** (line 184) which undeclared in the kernel 5.15.45 (file **kernel-source/include/linux/cpufreq.h**) --> Refer to Kernel 5.10.41 and modify line 184 of file **rcar_ems_ctrl.c**
:

```
-case CPUFREQ_ADJUST  
+case 0
```

After fix following above, I build **linux-renesas** and **core-image-weston** then boot the board. I can get the info of rcar sound card, and the module **pvrsvkm** not occurs issue "Unknown symbol"

```
root@ebisu:~# cat /proc/asound/pcm  
00-00: fe.adsp_sound.adsp-dai.0 (*) : : playback 1 : capture 1  
00-01: fe.adsp_sound.adsp-dai.1 (*) : : playback 1 : capture 1  
00-02: fe.adsp_sound.adsp-dai.2 (*) : : playback 1 : capture 1  
00-03: fe.adsp_sound.adsp-dai.3 (*) : : playback 1 : capture 1  
00-04: fe.sound@ec500000.rsnd-dai.0 (*) : : playback 1 : capture 1  
root@ebisu:~#  
root@ebisu:~# dmesg | grep "ADSP base was created"  
root@ebisu:~# dmesg | grep "rcar_adsp_sound adsp_sound"  
[ 1.983101] rcar_adsp_sound adsp_sound: probed  
root@ebisu:~# dmesg | grep "rcar-sound"  
[ 4.120628] #0: rcar-sound
```

The details log I attached in this note and the output of build yocto for ebisu board I stored in the location:
/shsv/Android/Supplier/TaiNguyen/BSP_5.15.45/deploy_5.15.45_fixUIOAddSomefiles

Als: Continue to fix remain issue: check point "ADSP base was created" still failed

Best regards,
Tai Nguyen

- File boot_log_E3_Linux5.15.45poky401FixUIOAddSomeFilesFixClock.txt added

Dear all,

I have some update for this task.

At log file in note14, there is a fail log:

```
[ 21.645313] renesas-cpg-mssr e6150000.clock-controller: Cannot get module clock 112: -2
[ 21.671033] pvrsvrkm fd000000.gsx: failed to add to PM domain 3dg-a: -2
[ 21.699816] pvrsvrkm: probe of fd000000.gsx failed with error -2
[ 23.068046] renesas-cpg-mssr e6150000.clock-controller: Cannot get module clock 506: -2
[ 23.090733] adsp ec800000.adsp: failed to add to PM domain always-on: -2
[ 23.105058] adsp: probe of ec800000.adsp failed with error -2

[ 0.323165] renesas-cpg-mssr e6150000.clock-controller: Cannot get module clock 21: -2
[ 0.323217] rcar-dmac ffc10000.dma-controller: failed to add to PM domain always-on: -2
[ 0.323229] rcar-dmac: probe of ffc10000.dma-controller failed with error -2
[ 0.323283] renesas-cpg-mssr e6150000.clock-controller: Cannot get module clock 16: -2
[ 0.323294] rcar-dmac ffc20000.dma-controller: failed to add to PM domain always-on: -2
[ 0.323301] rcar-dmac: probe of ffc20000.dma-controller failed with error -2
```

The **pvrsvrkm**, **adsp** and **rcar-dmac** can't add to power domain because **renesas-cpg-mssr** failed

The **renesas-cpg-mssr** failed because node **clock-controller** in file **r8a77990.dtsi** failed --> We need to update file

build/tmp/work-shared/ebisu/kernel-source/drivers/clk/renesas/r8a77990-cpg-mssr.c (linux 5.15.45) following linux-renesas bsp 5.10.41.

There are some files that are not updated so I recommend copy all files in the folder **kernel-source/drivers/clk/renesas/** from linux-renesas bsp 5.10.41 to linux 5.15.45

After update and bitbake linux-renesas, an issue can happen:

```
| /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work-shared/ebisu/kernel-
-source/drivers/clk/renesas/r8a77970-cpg-mssr.c:32:28: error: 'R8A77970_CLK_POST2' undeclared here (not in a f
unction); did you mean 'R8A77970_CLK_OSC'?
| 32 |         LAST_DT_CORE_CLK = R8A77970_CLK_POST2,
|   |                             ^~~~~~
|   |                             R8A77970_CLK_OSC
| CC      drivers/reset/reset-brcmstb-rescal.o
| In file included from /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/wor
k-shared/ebisu/kernel-source/drivers/clk/renesas/r8a77970-cpg-mssr.c:20:
| /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work-shared/ebisu/kernel-
source/drivers/clk/renesas/r8a77970-cpg-mssr.c:105:33: error: 'R8A77970_CLK_POST' undeclared here (not in a fu
nction); did you mean 'R8A77970_CLK_OSC'?
| 105 |         DEF_DIV6P1("post",      R8A77970_CLK_POST,  CLK_PLL1_DIV4, 0x08c),
|    |                             ^~~~~~
| /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work-shared/ebisu/kernel-
source/drivers/clk/renesas/renesas-cpg-mssr.h:45:32: note: in definition of macro 'DEF_TYPE'
| 45 |         { .name = _name, .id = _id, .type = _type }
|    |         ^~~
| /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work-shared/ebisu/kernel-
source/drivers/clk/renesas/renesas-cpg-mssr.h:54:9: note: in expansion of macro 'DEF_BASE'
| 54 |         DEF_BASE(_name, _id, CLK_TYPE_DIV6P1, _parent, .offset = _offset)
|    |         ^~~~~~
| /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work-shared/ebisu/kernel-
source/drivers/clk/renesas/r8a77970-cpg-mssr.c:105:9: note: in expansion of macro 'DEF_DIV6P1'
| 105 |         DEF_DIV6P1("post",      R8A77970_CLK_POST,  CLK_PLL1_DIV4, 0x08c),
|    |         ^~~~~~
| /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work-shared/ebisu/kernel-
source/scripts/Makefile.build:288: recipe for target 'drivers/clk/renesas/r8a77970-cpg-mssr.o' failed
| /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work-shared/ebisu/kernel-
source/scripts/Makefile.build:551: recipe for target 'drivers/clk/renesas' failed
| /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work-shared/ebisu/kernel-
source/scripts/Makefile.build:551: recipe for target 'drivers/clk' failed
| make[3]: *** [drivers/clk/renesas/r8a77970-cpg-mssr.o] Error 1
```

This issue happen because r8a7* files in the folder **work-shared/ebisu/kernel-source/include/dt-bindings/clock/** were not updated So to fix this issue, we can copy r8a7* files from linux-renesas bsp 5.10.41

After fixed above issue, an new issue occurs:

issue:

```
| /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work-shared/ebisu/kernel-
source/drivers/clk/renesas/rcar-gen3-cpg.c: In function 'cpg_pll_clk_recalc_rate':
| /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work-shared/ebisu/kernel-
source/drivers/clk/renesas/rcar-gen3-cpg.c:72:16: error: implicit declaration of function 'clk_readl' [-Werror
=implicit-function-declaration]
|     72 |         val = (clk_readl(pll_clk->pllcr_reg) & CPG_PLLCR_STC_MASK);
|         |             ^~~~~~
| /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work-shared/ebisu/kernel-
source/drivers/clk/renesas/rcar-gen3-cpg.c: In function 'cpg_pll_clk_set_rate':
| /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work-shared/ebisu/kernel-
source/drivers/clk/renesas/rcar-gen3-cpg.c:115:9: error: implicit declaration of function 'clk_writel'; did yo
u mean 'up_write'? [-Werror=implicit-function-declaration]
|    115 |         clk_writel(val, pll_clk->pllcr_reg);
|         |         ^~~~~~
|         |         up_write
| CC      drivers/clk/rockchip/clk-px30.o
| ccl: some warnings being treated as errors
| /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work-shared/ebisu/kernel-
source/scripts/Makefile.build:288: recipe for target 'drivers/clk/renesas/rcar-gen3-cpg.o' failed
| /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work-shared/ebisu/kernel-
source/scripts/Makefile.build:551: recipe for target 'drivers/clk/renesas' failed
```

This issue happen because the file **work-shared/ebisu/kernel-source/include/linux/clk-provider.h** was not updated. We can refer to the file in linux-renesas bsp 5.10.41 or update following commit d1eb06af17e8840ba00d5e1bf4d47360d41f0d6e, github.com/renesas-rcar/linux-bsp

Then build linux-renesas and core-image-weston again, boot board and check, the issue I mentioned at the beginning has been fixed. The **pvrsvkm**, **adsp** and **rcar-dmac** can be load as following:

```
[ 18.804154] pvrsvkm fd000000.gsx: Found 2 OPP points.
[ 18.809540] pvrsvkm fd000000.gsx: opp[1/2]: (300000000 Hz, 820000 uV)
[ 18.827699] pvrsvkm fd000000.gsx: opp[2/2]: (600000000 Hz, 820000 uV)
[ 20.491861] adsp ec800000.adsp: assigned reserved memory node linux,adsp@57000000
[ 20.596544] adsp ec800000.adsp: virt_addr=00000000eb9c2096 phy_addr=0x57000000 size=16777216
```

I atached log after fixed issue in this note.

Best regards,
Tai Nguyen

#16 - 11/23/2022 10:13 AM - Tai Nguyen

Hello all,

I update status for this task:

The check point "ADSP base was created" in boot log still failed. The log is following:

```
[ 19.773527] XF-IPC: failed to get adsp local memory itcm0
[ 19.779161] adsp: probe of ec800000.adsp failed with error -2
[ 19.785727] XF: IPC layer initialization failed: -19
```

The log failed occur at file *build/tmp/work/ebisu-poky-linux/kernel-module-xtensa-hifi/1.0-r0/RTM8RC0000ZNA2DS00JFL3E/src/xf-rcar.c* (line 638):

```
mmio = platform_get_resource(pdev, IORESOURCE_MEM, 3);
if (!mmio) {
    pr_err("failed to get adsp local memory itcm0");
    return -ENOENT;
}
```

It can't get resource so I try to find why this issue happen.

First I found that there is a module failed: **ipmmu**, it related to manage memory so I think it might the cause of issue.

The **ipmmu** was fix with following info:

- File driver/iommu/ipmmu-vm5a.c difference with linux-bsp of renesas while this file is maintenance by renesas so I replace file of linux 5.15.45 by the file of linux 5.10.41 (renesas bsp)

- The **tlb_flush_leaf** of struct **iommu_flush_ops** was removed at commit fefe8527a1e0e... (linux 5.15.45) so I also remove it in file **ipmmu-vm5a.c**

- CONFIG_IPMMU_VM5A_CTX_NUM is no declare in linux 5.15.45, So I assign it to 8 (following linux 5.15.45 and check the definition of that macro in linux 5.10.41)

After fixed, the ipmmu can load:

```
[ 0.133085] iommu: Default domain type: Translated
[ 0.133131] iommu: DMA domain TLB invalidation policy: strict mode
[ 0.134310] ipmmu-vm5a e67b0000.iommu: IPMMU context 0 is reserved
```

But the issue of ADSP still happen.

Then I try insmod the module **xtensa-hifi.ko** (adsp module) and get the following log:

```
root@ebisu:~# insmod /lib/modules/5.15.45-yocto-standard/extra/xtensa-hifi.ko
[ 270.457734] adsp ec800000.adsp: assigned reserved memory node linux,adsp@57000000
[ 270.465618] cma: cma_alloc: linux,adsp@57000000: alloc failed, req-size: 4096 pages, ret: -12
[ 270.474531] -----[ cut here ]-----
[ 270.479191] WARNING: CPU: 0 PID: 380 at mm/page_alloc.c:5358 __alloc_pages+0x5ac/0xbf0
[ 270.487171] Modules linked in: xtensa_hifi(O+) pvrsvkm(O) vspn(O) uio_pdrv_genirq ipv6
[ 270.495233] CPU: 0 PID: 380 Comm: insmod Tainted: G O 5.15.45-yocto-standard #1
[ 270.503868] Hardware name: Renesas Ebisu-4D board based on r8a77990 ES1.0 (DT)
[ 270.511105] pstate: 20000005 (nzCv daif -PAN -UAO -TCO -DIT -SSBS BTYPE=--)
[ 270.518084] pc : __alloc_pages+0x5ac/0xbf0
[ 270.522197] lr : __dma_direct_alloc_pages+0x17c/0x1e0
[ 270.527263] sp : ffff80000a94b4c0
[ 270.530580] x29: ffff80000a94b4c0 x28: 000000000000000c x27: 0000000000000000
[ 270.537735] x26: ffff80000a94b7a0 x25: ffff8000010226f8 x24: ffff00000a727010
[ 270.544889] x23: ffff80000811006c x22: ffff00000a727010 x21: 00000000ffffffff
[ 270.552043] x20: 00000000000000cc1 x19: 0000000001000000 x18: ffffffff00000000
[ 270.559198] x17: 393034203a657a69 x16: 732d716572202c64 x15: 0000028032e9daaa
[ 270.566352] x14: 00000000000000304 x13: 0000000000000000 x12: 0000000000000000
[ 270.573507] x11: 0000000000000000 x10: 00000000000000990 x9 : ffff80000a94b310
[ 270.580661] x8 : 0000000000000000 x7 : ffff00007fbd5140 x6 : 0000000000000000
[ 270.587814] x5 : 00000000000000001 x4 : ffff00001075e200 x3 : 0000000000000000
[ 270.594967] x2 : 0000000000000000 x1 : 0000000000000001 x0 : 00000000000000cc1
[ 270.602123] Call trace:
[ 270.604574] __alloc_pages+0x5ac/0xbf0
[ 270.608332] __dma_direct_alloc_pages+0x17c/0x1e0
[ 270.613044] dma_direct_alloc+0x70/0x310
[ 270.616974] dma_alloc_attrs+0x7c/0xe4
[ 270.620736] lx_adsp_probe+0x254/0x86c [xtensa_hifi]
[ 270.625733] platform_probe+0x6c/0xe0
```

```
[ 270.629411] really_probe.part.0+0x9c/0x310
[ 270.633604] __driver_probe_device+0x98/0x144
[ 270.637971] driver_probe_device+0xc8/0x15c
[ 270.642162] __driver_attach+0xfc/0x190
[ 270.646006] bus_for_each_dev+0x70/0xd0
[ 270.649850] driver_attach+0x28/0x34
[ 270.653433] bus_add_driver+0x108/0x1f0
[ 270.657277] driver_register+0x7c/0x130
[ 270.661121] __platform_driver_probe+0x5c/0x120
[ 270.665662] xf_ipc_init+0x2c/0xeb4 [xtensa_hifi]
[ 270.670382] xtensa_proxy_init+0x128/0x218 [xtensa_hifi]
[ 270.675711] do_one_initcall+0x50/0x1b0
[ 270.679558] do_init_module+0x44/0x234
[ 270.683321] load_module+0x207c/0x25fc
[ 270.687078] __do_sys_finit_module+0xa4/0xf0
[ 270.691358] __arm64_sys_finit_module+0x24/0x30
[ 270.695899] invoke_syscall+0x48/0x114
[ 270.699660] el0_svc_common.constprop.0+0xd4/0xfc
[ 270.704374] do_el0_svc+0x2c/0x94
[ 270.707695] el0_svc+0x28/0x80
[ 270.710761] el0t_64_sync_handler+0xa8/0x130
[ 270.715040] el0t_64_sync+0x1a0/0x1a4
[ 270.718710] ---[ end trace 5f1e1dd504a14336 ]---
[ 270.723783] adsp ec800000.adsp: virt_addr=0000000000000000 phy_addr=0x00000000 size=16777216
[ 270.750977] XF-IPC: failed to get adsp local memory itcm0
[ 270.756939] adsp: probe of ec800000.adsp failed with error -2
[ 270.763839] XF: IPC layer initialization failed: -19
insmod: ERROR: could not insert module /lib/modules/5.15.45-yocto-standard/extra/xtensa-hifi.ko: No such device
root@ebisu:~#
```

I see that the **cma_alloc** for adsp module failed. So I try extending the memory region of adsp from 16Mb to 32Mb, and reduce region of cma in file *kernel-source/arch/arm64/boot/dts/renesas/r8a77990-es10-ebisu.dts*:

```
/* For Audio DSP */
adsp_reserved: linux,adsp@57000000 {
    compatible = "shared-dma-pool";
    reusable;
    reg = <0x00000000 0x57000000 0x0 0x02000000>; --> change size from 0x01000000 to 0x02000000
};

/* global autoconfigured region for contiguous allocations */
linux,cma@59000000 {
    compatible = "shared-dma-pool";
    reusable;
    reg = <0x00000000 0x59000000 0x0 0x0f000000>; --> change addr from 0x58000000 to 0x59000000
, size from 0x10000000 to 0x0f000000
    linux,cma-default;
};
```

Then I build and boot again. The size of memory region changed as expected but the issue still happen:

Starting kernel ...

```
[ 0.000000] Booting Linux on physical CPU 0x0000000000 [0x410fd034]
[ 0.000000] Linux version 5.15.45-yocto-standard (oe-user@oe-host) (aarch64-poky-linux-gcc (GCC) 11.2.0, GNU
U ld (GNU Binutils) 2.38.20220313) #1 SMP PREEMPT Tue Nov 22 11:27:03 UTC 2022
[ 0.000000] Machine model: Renesas Ebisu-4D board based on r8a77990 ES1.0
[ 0.000000] efi: UEFI not found.
[ 0.000000] Reserved memory: created CMA memory pool at 0x0000000057000000, size 32 MiB
[ 0.000000] OF: reserved mem: initialized node linux,adsp@57000000, compatible id shared-dma-pool
[ 0.000000] Reserved memory: created CMA memory pool at 0x0000000059000000, size 240 MiB
[ 0.000000] OF: reserved mem: initialized node linux,cma@59000000, compatible id shared-dma-pool
[ 0.000000] Reserved memory: created CMA memory pool at 0x0000000068000000, size 64 MiB
[ 0.000000] OF: reserved mem: initialized node linux,multimedia@68000000, compatible id shared-dma-pool
....
root@ebisu:~# insmod /lib/modules/5.15.45-yocto-standard/extra/xtensa-hifi.ko
[ 62.627048] adsp ec800000.adsp: assigned reserved memory node linux,adsp@57000000
[ 62.635046] cma: cma_alloc: linux,adsp@57000000: alloc failed, req-size: 8192 pages, ret: -12
```

Als. continue investigate and fix issue

BRs,

#17 - 11/25/2022 05:07 PM - Tai Nguyen

- File `boot_log_H3_Linux5.15.45_Nov_25.txt` added

Dear all,

I update status of this task:

As described at note#15 and investigate in internet I found that the issue **cma alloc failed** can happen by update of files: **kernel-source/mm/cma.c**, **kernel-source/mm/cma.h** using **spinlock** to use **mutex**. It can happen in some evaluation board have small RAM size.

So I try building kernel, image for H3 salvator, and then I can successfully load the **xtensa-hifi.ko** module. **All check points for ADSP also passed.** I executed some test items: **ALSA Playback DAI0, ALSA Playback DAI1, API 2_RENDERER, API VOLOUME_UPDATE**, and the result is OK.
--> So I think the issue **cma alloc failed** is the cause of issue of ADSP at note#15

I attached log of H3.

Image, dtb, rootfs for H3 can be found at `/shsv/Android/Supplier/TaiNguyen/BSP_5.15.45/deploy_5.15.45_Nov25_H3`

Next Als:

- Run all test ADSP on H3 with CI to confirm the porting of ADSP in kernel 5.15.45, poky 4.0.1
- Fix issue cma alloc failed in E3

Best regards,

Tai Nguyen

#18 - 11/30/2022 10:32 AM - Tai Nguyen

Dear all,

I'm excuting the test for ADSP after porting to Linux5.15.45 H3 and there are 2 issues:

- ADSP ALSA: the log of abnormal cases is differ with Yv5.9.
In kernel 5.15.45, the log is:

```
arecord: set_params:1416: Unable to install hw params
```

while in Yv5.9.0, the log is:

```
arecord: set_params:1405: Unable to install hw params:
```

- ADSP API: The scripts support testing (CI and manual) use script util-linux on evaluation board (command script) to log the output but when I build the Yocto, it lacks of this utility.

But the output is OK if I listen directly with headphones.
I trying to fix 2 above issues.

About the issue "cma alloc failed" on Ebisu 4d, I have not found a way to fix it yet.

Best regards,
Tai Nguyen

#19 - 12/01/2022 06:17 PM - Tai Nguyen

Dear all,

I update status of this task:

1. ADSP ALSA: the log of abnormal cases is differ with Yv5.9

I still not found the root cause but it seems acceptable since these cases are abnormal. Maybe the log code of 2 kernels are differ
The ALSA ADSP result of E3-4d and H3-salvator failed with the same behavior mentioned above. It only difference in case abnormal, others are OK

ADSP API: The scripts support testing (CI and manual) use script util-linux on evaluation board (command script) to log the output but when I build the Yocto, it lacks of this utility.

The script utility can be found at *build/tmp/deploy/rpm/cortexa53/util-linux-script-2.37.4-r0.cortexa53.rpm*, we can use command: **rpm -i util-linux-script-2.37.4-r0.cortexa53.rpm** to install on board.

The API ADSP result is PASS all in both E3-4d and H3-salvator

I also know the cause of the issue "cma alloc failed" on Ebisu 4d.
The macro **TARGET_BOARD_E3** should define to 1 when build for E3 board. At Yv5.9.0, the **do_configure** job will change the default value of macro in file *build/tmp/work/ebisu-poky-linux/kernel-module-xtensa-hifi/1.0-r0/RTM8RC0000ZNA2DS00JFL3E/Kbuild*
Default is:

```
ccflags-y += -DTARGET_BOARD_E3=0
```

But in the linux-5.15.45, poky 4.0.1, it no change value of **TARGET_BOARD_E3** so it will lead to using code of Salvator(H3/M3/M3N) for Ebisu at file: *build/tmp/work/ebisu-poky-linux/kernel-module-xtensa-hifi/1.0-r0/RTM8RC0000ZNA2DS00JFL3E/src/xf-rca.c*
Salvator has 4 regions memory for ADSP while Ebisu only has 2 so it failed when allocate more than 2 regions memory on Ebisu board

I trying to find why the job **do_configure** don't redefine when build for Ebisu board.

Best regards,

#20 - 12/02/2022 01:59 PM - Tai Nguyen

- File *ALSA_reference_log_poky4.0.1.zip* added
- % Done changed from 70 to 80

Dear all,

I found the root cause of issues of ALSA. They are not the problem and they happen since the updated of **alsa-utils**. There are 3 difference points between Yv5.9.0 and current ported version (Linux5.15.45, poky 4.0.1), tentatively call "ported version":

1. Difference in log of all ALSA items

- in Yv5.9.0 log is:
aplay: set_params:1405: Unable to install hw params:
- in ported version log is:
aplay: set_params:1416: Unable to install hw params:
The root cause is file *alsa-utils/1.2.6-r0/alsa-utils-1.2.6/aplay/aplay.c* was updated and the number "1405, 1416" is the line where notify the log in the file.

2. Difference in log of items: Playback_DAI0 and Capture_DAI0

- in Yv5.9.0 log is:
aplay: main:828: audio open error: No such file or directory
arecord: main:828: audio open error: No such file or directory
- in ported version log is:
aplay: main:831: audio open error: No such file or directory
arecord: main:831: audio open error: No such file or directory
The root cause is file *alsa-utils/1.2.6-r0/alsa-utils-1.2.6/aplay/aplay.c* was updated and the number "828, 831" is the line where notify the log in the file.

3. Difference in log of items: PlaybackVolume, CaptureVolume, PlaybackOutRate, CaptureInRate, PlaybackOutChannel, PlaybackEQZControl, CaptureEQZControl, PlaybackEQZRoute, CaptureEQZRoute

- in Yv5.9.0 log is:
amixer: Cannot find the given element from control hw:0
- in ported version log is:
amixer: Cannot find the given element from control sysdefault:0
The root cause is the version of **alsa-utils** in ported version is 1.2.6 while in Yv5.9.0, **alsa-utils** version 1.2.1 and in the file: *alsa-utils/1.2.6-r0/alsa-utils-1.2.6/amixer/amixer.c*, if version > 1.2.5, it will use "sysdefault" instead of "hw" so this is the cause of difference.

```
line 1161:         error("Cannot find the given element from control %s\n", card);
and line 1812:
#if defined(SND_LIB_VER) && SND_LIB_VER(1, 2, 5) <= SND_LIB_VERSION
    sprintf(card, "sysdefault:%i", i);
#else
    sprintf(card, "hw:%i", i);
#endif
```

After find the root cause, I modified the golden log (reference log, please check the attached zip file) of ALSA and check the output again, the result is OK all items

Best regards,

#21 - 12/05/2022 03:53 PM - Tai Nguyen

Hello all,

I found the cause of remain issue described at note#19: *the task **do_configure** doesn't change the value of **TARGET_BOARD_E3** to 1 when build for E3 board*

Root cause:

From release 3.4 (honister) of yocto, the ':' character replaces the use of '_' character to refer to an override and we are using yocto 4.0.1 (kirstone) which inherited from honister.

so in the file: *meta-renesas/meta-rcar-gen3/recipes-kernel/kernel-module-adsp/kernel-module-xtensa-hifi.bb*
at the line 26:

```
25 # Enable build target for E3 board
26 do_configure:prepend_r8a77990() {
27     sed -i 's|-DTARGET_BOARD_E3=0|-DTARGET_BOARD_E3=1|g' ${S}/Kbuild
28 }
```

The prepend function for r8a77990 will not be applied.

How to fix:

Modify line 26 of above file following:

from: **do_configure:prepend_r8a77990(){**

becomes: **do_configure:prepend:r8a77990(){**

Result when build with E3 board:

- task **run.do_configure** before fixing:

```
# line: 1, file: autogenerated
do_configure() {
    base_do_configure
}
```

- task **run.do_configure** after fixing:

```
# line: 1, file: autogenerated
do_configure() {
    sed -i 's|-DTARGET_BOARD_E3=0|-DTARGET_BOARD_E3=1|g' /data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work/ebisu-poky-linux/kernel-module-xtensa-hifi/1.0-r0/RTM8RC0000ZNA2DS00JFL3E/Kbuild
    base_do_configure
}
```

The prepend function only works with E3 (r8a77990) as expected. I checked it by building for board H3 salvator.

Best regards,

Tai Nguyen

#22 - 12/07/2022 05:15 PM - Tai Nguyen

- File patch_ADSP.zip added
- % Done changed from 80 to 90

Hello all,

I update patches file for porting adsp. I will update guideline later.

Best regards,
Tai Nguyen

#23 - 12/08/2022 03:42 PM - Tai Nguyen

Dear all,

I update guideline build ADSP with kernel 5.15.45:

1. Prepare packages

```
- mkdir Porting_ADSP
- cd Porting_ADSP
- git clone poky, meta-renesas, meta-openembedded from local server or online (os member only clone from local server)
- cd ../Porting_ADSP/meta-renesas
- sh meta-rcar-gen3/docs/sample/copyscript/copy_proprietary_softwares.sh /shsv/RCarSW/rvc_git_repo/yocto/_YOC
TO_IMAGES_/Gen3/v5.9.0/binaries_dir_PT3
- source poky/oe-init-build-env
- prepare conf file following yocto build guideline.
- prepare patches files, I prepare patches at folder Porting_ADSP
```

2. Apply patches for meta-renesas and poky

• patch for meta-renesas:

```
- cd Porting_ADSP/meta-renesas
- patch -p1 < ../patch_META-RENEASAS_xtensa-hifi_bb.patch
```

• patch for poky:

```
- cd Porting_ADSP/poky
- patch -p1 < ../patch_POKY_scripts_postinst-intercepts.patch
```

3. Modify file meta-renesas/meta-rcar-gen3/recipes-kernel/linux/linux-renesas_5.10.bb to build without check out from git

```
#SRC_URI = "${RENEASAS_BSP_URL};nocheckout=1;branch=${BRANCH};protocol=https"
S = "/data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work-shared/ebisu/kern
el-source"
LINUX_VERSION ?= "5.15.45"
PV = "${LINUX_VERSION}"
#LINUX_VERSION ?= "5.10.41"
#PV = "${LINUX_VERSION}+git${SRCPV}"
PR = "r1"
```

and remove following lines in file linux-renesas_5.10.bb:

```
file://0003-ADSP-remove-HDMI-support-from-rcar-sound.patch \
file://0004-ADSP-integrate-ADSP-sound-for-H3-M3-M3N-board.patch \
file://0005-ADSP-add-build-for-ADSP-sound-driver.patch \
```

```
file://0006-ADSP-integrate-ADSP-sound-for-E3-board.patch \
```

4. Unpack packages, run following command:

```
- bitbake linux-renesas -fc unpack
- bitbake kernel-module-vspmif -fc unpack
- bitbake kernel-module-vsp2driver -fc unpack
- bitbake kernel-module-mmngr -fc unpack
- bitbake kernel-module-mmngrbuf -fc unpack
- bitbake kernel-module-gles -fc unpack
```

5. Apply patch for kernel-modules:

```
- move to tmp/work/ebisu-poky-linux/kernel-module-gles/1.0-r0/rogue_km
- patch -p0 < ../../../../../../patch_KERNEL_MODULE_gles.patch
- move to tmp/work/ebisu-poky-linux/kernel-module-vsp2driver/1.0-r0/git
- patch -p1 < ../../../../../../patch_KERNEL_MODULE_vsp2driver.patch
- move to tmp/work/ebisu-poky-linux/kernel-module-vspmif/1.0-r0/git/
- patch -p1 < ../../../../../../patch_KERNEL_MODULE_vspmif.patch
- move to tmp/work/ebisu-poky-linux/kernel-module-mmngr/1.0-r0/git/
- patch -p1 < ../../../../../../patch_KERNEL_MODULE_mmngr.patch
- move to tmp/work/ebisu-poky-linux/kernel-module-mmngrbuf/1.0-r0/git/
- patch -p1 < ../../../../../../patch_KERNEL_MODULE_mmngrbuf.patch
```

6. Build

```
- bitbake linux-renesas -fc compile
- tar the linux kernel package, then copy linux kernel after tar to tmp/work-shared/ebisu/kernel-source/
e.g. cp /shsv/Android/Supplier/TaiNguyen/MMP_2022/ADSP/linux-5.15.45/* ./tmp/work-shared/ebisu/kernel-source/
-rf
- move to tmp/work-shared/ebisu/kernel-source/
- patch -p0 < ../../../../../../patch_KERNEL_defconfig.patch
- patch -p0 < ../../../../../../patch_KERNEL_add-build-for-ADSP-sound-driver_Linux_5_15_45.patch
- patch -p0 < ../../../../../../patch_KERNEL_driver_clk_renesas.patch
- patch -p0 < ../../../../../../patch_KERNEL_drivers_iommu.patch
- patch -p0 < ../../../../../../patch_KERNEL_driver_soc_renesas.patch
- patch -p0 < ../../../../../../patch_KERNEL_dts_renesas.patch
- patch -p0 < ../../../../../../patch_KERNEL_include_dt-bindings.patch
- patch -p0 < ../../../../../../patch_KERNEL_include_linux.patch
- bitbake linux-renesas -fc compile
- Disable "-fcf-protection" in the file: (check note#11)
build/tmp/work/x86_64-linux/gcc-cross-aarch64/11.2.0-r0/gcc-11.2.0/build.x86_64-linux.aarch64-poky-linux/libcc
1/Makefile. comment line 254 in the file: #CET_HOST_FLAGS = -fcf-protection
- bitbake linux-renesas -fc compile
- bitbake linux-renesas
- bitbake core-image-weston
```


#24 - 12/08/2022 04:05 PM - Tai Nguyen

Dear all,

I finished execute IT for ADSP ported in kernel 5.15.45, board H3. The result is OK for all items
Please check Gitlab CI pipeline: https://gitlab.rvc.renesas.com/RSS2/gen3_audiodsp/-/pipelines/126240 and
https://gitlab.rvc.renesas.com/RSS2/gen3_audiodsp/-/pipelines/126224
Output of testing at: \\rvc-vnas-01\SoftIP\20_user\mmp_ci\ADSP_CI\it_ci\output\H3_#126240

Best regards,
Tai Nguyen

#25 - 12/12/2022 08:50 AM - Tu Trinh (RCMW)

Dear Tai-san,

Thanks so much for your effort. Good result.
I have some questions as below:

1. About [#163175#note-11](#): Error of "CET_HOST_FLAGS = -fcf-protection" occurred on E3, right? How about H3?
2. About [#163175#note-11](#) and [#163175#note-12](#): On Ubuntu 20.04, I haven't had same issue. Look like something went wrong on Ubuntu < 20.04, right?
3. About [#163175#note-23](#): Can you share these patch files?
And Because there are many issues and many patch files. Have you checked step by step as guideline?

BRs,
Tu Trinh

#26 - 12/12/2022 01:21 PM - Tai Nguyen

Hello Tu-san,

About [#163175#note-11](#): Error of "CET_HOST_FLAGS = -fcf-protection" occurred on E3, right? How about H3?

In my case, H3 and E3 use the same folder:
build/tmp/work/x86_64-linux/gcc-cross-aarch64/11.2.0-r0/gcc-11.2.0/build.x86_64-linux.aarch64-poky-linux/libcc1/ So for now, I can't confirm the answer. I will check it later.
Don't you have this issue when building for H3?

About [#163175#note-11](#) and [#163175#note-12](#): On Ubuntu 20.04, I haven't had same issue. Look like something went wrong on Ubuntu < 20.04, right?

I think so. I can only build in Ubuntu 18.04 so I can't confirm in Ubuntu 20.04 but from my investigation and because you and Na-san don't have these issues so I think it related to the version of Ubuntu

About [#163175#note-23](#): Can you share these patch files?

I updated patches at note#22. Patches of vspmfif, vsp2, mmngr, mmngrbuf I got from <http://172.29.143.164:8080/issues/168568> and only changed their name to a unified group name.

And Because there are many issues and many patch files. Have you checked step by step as guideline?

I checked the patches by re-build for E3 and recorded the steps at note#23. Please check it.

Best regards,
Tai Nguyen

#27 - 12/12/2022 01:42 PM - Tu Trinh (RCMW)

Dear Tai-san,

I just want to recorded clear information, no need to re-setup. Thanks so much.

BRs,
Tu Trinh

#28 - 12/22/2022 10:38 AM - Tai Nguyen

- % Done changed from 90 to 100

#29 - 02/07/2023 05:16 PM - Tai Nguyen

Dear all,

- Note for build sdk with poky4.0.1, linux 5.15.45 *
- Build sdk use command: **bitbake core-image-weston-sdk -c populate_sdk**
Some error may occur:

1: Not found the option '-fcf-protection'. This issue is same with issue at #note-11

--> **W/A** is disable "-fcf-protection" in the file:

/data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work/x86_64-linux/gcc-crosssdk-x86_64-pokysdk-linux/11.2.0-r0/gcc-11.2.0/build.x86_64-linux.x86_64-pokysdk-linux/libcc1/Makefile

2. ERROR: core-image-weston-sdk-1.0-r0 do_populate_sdk: The postinstall intercept hook 'update_gtk_icon_cache' failed

Issue occur because the variable *libdir_native* was not assigned to right location

--> **W/A** to fix this issue: add this command: *libdir_native=/usr/lib* to file

"/data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/poky/scripts/postinst-intercepts/update_gtk_icon_cache"
after that, code is:

```
#!/bin/sh
#
# SPDX-License-Identifier: MIT
#
# Post-install intercept for gtk-icon-cache.bbclass

set -e
```

```
# Update native pixbuf loaders
libdir_native=/usr/lib
$STAGING_DIR_NATIVE/${libdir_native}/gdk-pixbuf-2.0/gdk-pixbuf-query-loaders --update-cache

for icondir in $D/usr/share/icons/*/ ; do
    if [ -d $icondir ] ; then
        gtk-update-icon-cache -fqt $icondir
    fi
done
```

3: ERROR: core-image-weston-sdk-1.0-r0 do_populate_sdk: The postinstall intercept hook 'update_udev_hwdb' failed

Issue occur because the variables *D* and *UDEVADM* are not assigned to the right location

--> **W/A**: add 2 lines code below to the file:

"data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/poky/scripts/postinst-intercepts/update_udev_hwdb"

```
D=/data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work/salvator_x-poky-linux
x/core-image-weston-sdk/1.0-r0/sdk/image/usr/local/oe-sdk-hardcoded-buildpath/sysroots/cortexa57-cortexa53-pok
y-linux
UDEVADM="/bin/udevadm"
```

after that, the file is following:

```
#!/bin/sh
#
# SPDX-License-Identifier: MIT
#

set -e

case "${PREFERRED_PROVIDER_udev}" in
    systemd)
        UDEV_EXTRA_ARGS="--usr"
        UDEVLIBDIR="${rootlibexedir}"
        UDEVADM="${base_bindir}/udevadm"
        ;;

    *)
        UDEV_EXTRA_ARGS=""
        UDEVLIBDIR="${sysconfdir}"
        UDEVADM="${bindir}/udevadm"
        ;;
esac
```

```
rm -f ${D}${UDEVLIBDIR}/udev/hwdb.bin
D=/data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45
_poky401/build/tmp/work/salvator_x-poky-linux/core-image-weston-sdk/1.0
-r0/sdk/image/usr/local/oe-sdk-hardcoded-buildpath/sysroots/cortexa57-cortexa53-poky-linux
UDEVADM="/bin/udevadm"
PSEUDO_UNLOAD=1 ${binprefix}qemuwrapper -L $D ${D}${UDEVADM} hwdb --update --root $D ${UDEV_EXTRA_ARGS} ||
    PSEUDO_UNLOAD=1 qemuwrapper -L $D ${D}${UDEVADM} hwdb --update --root $D ${UDEV_EXTRA_ARGS}
chown root:root ${D}${UDEVLIBDIR}/udev/hwdb.bin
```

4: ERROR: core-image-weston-sdk-1.0-r0 do_populate_sdk: The postinstall intercept hook 'update_gio_module_cache' failed

Issue occur because the variable *D* is not assigned to the right location

--> **W/A** : add following line in file:

"data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/poky/scripts/postinst-intercepts/update_gio_module_cache"

```
D=/data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work/salvator_x-poky-linux
x/core-image-weston-sdk/1.0-r0/sdk/image/usr/local/oe-sdk-hardcoded-buildpath/sysroots/cortexa57-cortexa53-pok
y-linux
```

after that, the file is following:

```
#!/bin/sh
#
# SPDX-License-Identifier: MIT
#

set -e
D=/data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45
_poky401/build/tmp/work/salvator_x-poky-linux/core-image-weston-sdk/1.0
-r0/sdk/image/usr/local/oe-sdk-hardcoded-buildpath/sysroots/cortexa57-cortexa53-poky-linux
PSEUDO_UNLOAD=1
${binprefix}qemuwrapper -L $D ${libexecdir}/${binprefix}gio-querymodules ${libdir}/gio/modules/

[ ! -e ${libdir}/gio/modules/giomodule.cache ] ||
    chown root:root ${libdir}/gio/modules/giomodule.cache
```

5: ERROR: core-image-weston-sdk-1.0-r0 do_populate_sdk: The postinstall intercept hook 'update_pixbuf_cache' failed
--> **W/A** : add following code in file:
"/data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/poky/scripts/postinst-intercepts/update_pixbuf_cache"

```
D=/data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work/salvator_x-poky-linux/core-image-weston-sdk/1.0-r0/sdk/image/usr/local/oe-sdk-hardcoded-buildpath/sysroots/cortexa57-cortexa53-poky-linux
```

after that, the file is following:

```
#!/bin/sh
#
# SPDX-License-Identifier: MIT
#

set -e
D=/data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45
_poky401/build/tmp/work/salvator_x-poky-linux/core-image-weston-sdk/1.0
-r0/sdk/image/usr/local/oe-sdk-hardcoded-buildpath/sysroots/cortexa57-cortexa53-poky-linux
export GDK_PIXBUF_MODULEDIR=${libdir}/gdk-pixbuf-2.0/2.10.0/loaders
export GDK_PIXBUF_FATAL_LOADER=1

PSEUDO_UNLOAD=1 ${binprefix}qemuwrapper -L $D ${libdir}/gdk-pixbuf-2.0/gdk-pixbuf-query-loaders \
    >${GDK_PIXBUF_MODULEDIR}/../loaders.cache && \
    sed -i -e "s:$D::g" ${GDK_PIXBUF_MODULEDIR}/../loaders.cache
```

6: ERROR: core-image-weston-sdk-1.0-r0 do_populate_sdk: The postinstall intercept hook 'update_font_cache' failed
--> **W/A** : add following lines in file:
"/data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/poky/scripts/postinst-intercepts/update_font_cache"

```
D=/data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/work/salvator_x-poky-linux/core-image-weston-sdk/1.0-r0/sdk/image/usr/local/oe-sdk-hardcoded-buildpath/sysroots/cortexa57-cortexa53-poky-linux
fontconfigcachedir=/var/cache/fontconfig/CACHEDIR.TAG
fontconfigcacheenv="FC_DEBUG=1"
```

after that, the file is following:

```
#!/bin/sh
#
# SPDX-License-Identifier: MIT
#

set -e
D=/data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45
_poky401/build/tmp/work/salvator_x-poky-linux/core-image-weston-sdk/1.0
-r0/sdk/image/usr/local/oe-sdk-hardcoded-buildpath/sysroots/cortexa57-cortexa53-poky-linux
fontconfigcachedir=/var/cache/fontconfig/CACHEDIR.TAG
```

```
fontconfigcacheenv="FC_DEBUG=1"
rm -f $D${fontconfigcachedir}/CACHEDIR.TAG

PSEUDO_UNLOAD=1
${binprefix}qemuwrapper -L $D -E ${fontconfigcacheenv} $D${libexecdir}/${binprefix}fc-cache --sysroot=$D --sy
stem-only ${fontconfigcacheparams}

chown -R root:root $D${fontconfigcachedir}
find $D -type f -name .uuid -exec chown root:root '{}' +
```

After modified, **bitbake core-image-weston-sdk -c populate_sdk** again.
Output script in the: "/data1/tainguyen/Build_YOCTO/Porting_ADSP/porting_kernel_5.15.45_poky401/build/tmp/deploy/sdk/"

Best regards,

Files			
boot_log_E3_Linux5.15.45poky401FixUIOAddSomeFiles.txt	76.2 KB	11/14/2022	Tai Nguyen
boot_log_E3_Linux5.15.45poky401FixUIOAddSomeFilesFixClock.txt	75.8 KB	11/16/2022	Tai Nguyen
boot_log_H3_Linux5.15.45_Nov_25.txt	89.7 KB	11/25/2022	Tai Nguyen
ALSA_reference_log_poky4.0.1.zip	12.1 KB	12/02/2022	Tai Nguyen
patch_ADSP.zip	124 KB	12/07/2022	Tai Nguyen