

64 bit kernel migration for Rpi3 using linux kernel 5.10.31

repo branch:

```
repo init -u https://code.rdkcentral.com/r/manifests -b dunfell -m rdkv-nosrc.xml
repo sync -j `nproc` --no-clone-bundle --no-tags
```

1.) changes in meta-raspberrypi:

step1 : please add [linux-raspberrypi_5.10.bb](#) file in following path `/meta-raspberrypi/recipes-kernel/linux/`

step2: please change `LIC_FILES_CHKSUM` = "[file://COPYING;md5=6bc538ed5bd9a7fc9398086aedcd7e46](#)" in `/meta-raspberrypi/recipes-kernel/linux/linux-raspberrypi.inc`

step3: please set `PREFERRED_VERSION_linux-raspberrypi` ??= "5.10.%" in `meta-raspberrypi/conf/machine/include/rpi-default-versions.inc`

2.) changes in meta-cmf-raspberrypi:

step1: please add [arch-armv8.inc](#) file in following path `meta-cmf-raspberrypi/conf/machine/include/arm`

step2: please add [multilib.conf](#) file in following path `meta-cmf-raspberrypi/conf/machine/`

step3: please change [raspberrypi-rdk-hybrid-generic.conf](#) file in following path `meta-cmf-raspberrypi/conf/machine/`

step4: please change [tune-cortexa53.inc](#) file in the following path `meta-cmf-raspberrypi/conf/machine/include/`

step5: please add below changes in `layer.conf` file in the following path `meta-cmf-raspberrypi/conf/layer.conf`

```
-include include/rdk-bbmask-##RDK_FLAVOR##-platform.in
+include include/rdk-bbmask-rdkv-platform.in
```

please add it in `BBMASK` := "`|meta-rdk-video/recipes-extended/ctrlm/*`" in `meta-cmf-raspberrypi/conf/include/rdk-bbmask-rdkv-platform.inc`

step6: please change `wpe-webkit_%`.bbappend file as per the [wpe-webkit.txt](#) in the following path `meta-cmf-raspberrypi/recipes-wpe/wpe-webkit/`

3.) changes in meta-cmf-video:

step1: please add below changes in `iarm-event-sender_git.bbappend` file in the following path `meta-cmf-video/recipes-extended/sys_mon_tools/`

```
+#DEPENDS += "${@bb.utils.contains('DISTRO_FEATURES', 'ctrlm', 'ctrlm-headers', '', d)}
```

4.) changes in meta-rdk-ext:

step1: please add changes in [wpe-webkit.inc](#) in the following path `meta-rdk-ext/recipes-extended/wpe-webkit`

5.) changes in meta-rdk-restricted:

step1: please add below changes in [servicemanager_git.bb](#) in the following path `meta-rdk-restricted/recipes-qt/servicemanager`

```
+#DEPENDS += "${@bb.utils.contains('DISTRO_FEATURES', 'ctrlm', 'ctrlm-headers', '', d)}
```

6.) changes in meta-rdk-video:

step1: please add below changes [rdk-services_git.bb](#) in the following path `meta-rdk-video/recipes-extended/rdk-services/`

```
-DEPENDS += "wpeframework-clientlibraries devicesettings iarmbus iarmmgrs tts storagemanager nopoll audiocapturemgr hdmicec ctrlm-headers"
+DEPENDS += "wpeframework-clientlibraries devicesettings iarmbus iarmmgrs tts storagemanager nopoll audiocapturemgr hdmicec"
```

step2: please change [wpeframework_1.0.bb](#) file as give here in the following path `meta-rdk-video/recipes-extended/rdk-services/`

and please rename [wpeframework.service.in](#) as lib32-wpeframework.service in the following path *meta-rdk-video/recipes-extended/rdkservices/wpeframework/*

step3: please add below changes in [iarm-event-sender_git.bb](#) file in the following path *meta-rdk-video/recipes-extended/sys_mon_tools/*

```
-CFLAGS += "${@bb.utils.contains('DISTRO_FEATURES', 'ctrlm', '-DCTRLM_ENABLED', '', d)}"
```

```
+#CFLAGS += "${@bb.utils.contains('DISTRO_FEATURES', 'ctrlm', '-DCTRLM_ENABLED', '', d)}"
```

7.) changes in openembedded-core:

step1: please change [python3-pyobject_3.34.0.bb](#) file as given here in the following *openembedded-core/meta/recipes-devtools/python/*

note : at the time build error: please add [libcairo-gobject.so.2](#) from *build-raspberrypi-rdk-hybrid/tmp/work/armv7vet2hf-neon-vfpv4-rdkmllib32-linux-gnueabi/lib32-cairo/1.16.0-r0/image/usr/lib/*[libcairo-gobject.so.2](#) to *openembedded-core/meta/recipes-devtools/python/files/*[libcairo-gobject.so.2](#)

step2: please change [gstreamer1.0-plugins-good_1.16.3.bb](#) file as given here in the following *openembedded-core/meta/recipes-multimedia/gstreamer/*

note : at the time build error: please add [libcairo-gobject.so.2](#) from *build-raspberrypi-rdk-hybrid/tmp/work/armv7vet2hf-neon-vfpv4-rdkmllib32-linux-gnueabi/lib32-cairo/1.16.0-r0/image/usr/lib/*[libcairo-gobject.so.2](#) to *openembedded-core/meta/recipes-multimedia/gstreamer/gstreamer1.0-plugins-good/*[libcairo-gobject.so.2](#)

8.) Changes in bblayers.conf

Source commmand

MACHINE=raspberrypi-rdk-hybrid source meta-cmf-raspberrypi/setup-environment

in *build-raspberrypi-rdk-hybrid/conf/* please comment as below for bblayers.conf

```
#BBLAYERS += "${RDKROOT}/meta-rdk-voice-sdk"
```

9.)Start build with prefix lib32:

example if the target is `bitbake rdk-generic-hybrid-image` then it must be **bitbake lib32-rdk-generic-hybrid-image**

Errors list while generating Image for rpi3 and resolutions:

1.) [do_image_wic](#)

```

1.13.bb:do_populate_sysroot', 'virtual:native:/home/bbarla704/64bit_32_userspace/openembedded-core/meta/recipes-extended/bc/bc_1.07.1.bb:
do_populate_sysroot', '/home/bbarla704/64bit_32_userspace/openembedded-core/meta/recipes-kernel/kmod/depmodwrapper-cross_1.0.bb:
do_populate_sysroot', 'virtual:native:/home/bbarla704/64bit_32_userspace/openembedded-core/meta/recipes-devtools/opkg/opkg_0.4.2.bb:
do_populate_sysroot', '/home/bbarla704/64bit_32_userspace/openembedded-core/meta/recipes-devtools/binutils/binutils-cross_2.34.bb:
do_populate_sysroot', '/home/bbarla704/64bit_32_userspace/openembedded-core/meta/recipes-core/glibc/cross-localedef-native_2.31.bb:
do_populate_sysroot']
| NOTE: Installed into sysroot: ['rpi-config']
| NOTE: Skipping as already exists in sysroot: ['bison-native', 'opkg-utils-native', 'quilt-native', 'pseudo-native', 'patch-native', 'pigz-native', 'lib32-
qemuwrapper-cross', 'dosfstools-native', 'lzop-native', 'ldconfig-native', 'qemuwrapper-cross', 'update-rc.d-native', 'mtools-native', 'parted-native', 'gptfdisk-
native', 'linux-raspberrypi', 'bmap-tools-native', 'libgcc', 'makedevs-native', 'kmod-native', 'xz-native', 'kern-tools-native', 'gcc-cross-aarch64', 'pbzip2-native',
'bc-native', 'depmodwrapper-cross', 'opkg-native', 'binutils-cross-aarch64', 'cross-localedef-native', 'systemd-systemctl-native', 'gnu-config-native',
'automake-native', 'autoconf-native', 'texinfo-dummy-native', 'flex-native', 'libtool-native', 'gettext-minimal-native', 'perl-native', 'qemu-native', 'gdk-pixbuf-
native', 'shared-mime-info-native', 'attr-native', 'shadow-native', 'zlib-native', 'pkgconfig-native', 'lzo-native', 'readline-native', 'util-linux-native', 'ncurses-
native', 'popt-native', 'python3-native', 'python3-six-native', 'python3-setuptools-native', 'glibc', 'linux-libc-headers', 'debianutils-native', 'openssl-native', 'gtk-
doc-native', 'gmp-native', 'mpfr-native', 'libmpc-native', 'bzip2-native', 'libsolv-native', 'libarchive-native', 'm4-native', 'gdbm-native', 'db-native', 'glib-2.0-
native', 'libjpeg-turbo-native', 'meson-native', 'libpng-native', 'ninja-native', 'gobject-introspection-native', 'libxml2-native', 'intltool-native', 'libpcre2-native',
'libcap-ng-native', 'sqlite3-native', 'libffi-native', 'libns12-native', 'libtirpc-native', 'unzip-native', 'cmake-native', 'expat-native', 'e2fsprogs-native', 'libpcre-
native', 'gettext-native', 're2c-native', 'libxml-parser-perl-native', 'curl-native']
| DEBUG: Python function extend_recipe_sysroot finished
| DEBUG: Executing shell function do_image_wic
| INFO: Creating image(s)...
|
| WARNING: bootloader config not specified, using defaults
|
| ERROR: Malformed boot file entry: Image;
|
| WARNING: exit code 1 from a shell command.
| ERROR: Execution of '/home/bbarla704/64bit_32_userspace/build-raspberrypi-rdk-hybrid/tmp/work/raspberrypi_rdk_hybrid-rdcmllib32-linux-gnueabi/lib32-
rdk-generic-hybrid-image/1.0-r0/temp/run.do_image_wic.403389' failed with exit code 1:
| INFO: Creating image(s)...
|
| WARNING: bootloader config not specified, using defaults
|
| ERROR: Malformed boot file entry: Image;
|
| WARNING: exit code 1 from a shell command.
|
| ERROR: Task (virtual:multilib:lib32:/home/bbarla704/64bit_32_userspace/meta-rdk/recipes-core/images/rdk-generic-hybrid-image.bb:do_image_wic) failed
with exit code '1'
NOTE: Tasks Summary: Attempted 6996 tasks of which 6987 didn't need to be rerun and 1 failed.
NOTE: Writing buildhistory
NOTE: Writing buildhistory took: 5 secondsSummary: 1 task failed:
  virtual:multilib:lib32:/home/bbarla704/64bit_32_userspace/meta-rdk/recipes-core/images/rdk-generic-hybrid-image.bb:do_image_wic
Summary: There were 74 WARNING messages shown.
Summary: There was 1 ERROR message shown, returning a non-zero exit code.

```