WAGDY

Adding RPI-Play with CMake to our image

Steps:

1. **Go to the `pocky` directory.**

2. **Go to your desired layer.**
   We use `meta-IVI`, and we have already added it to the Bitbake layers. If you will create a new one, don't forget to add it using:

   ```
   bitbake-layers add-layer <layername>
   ```

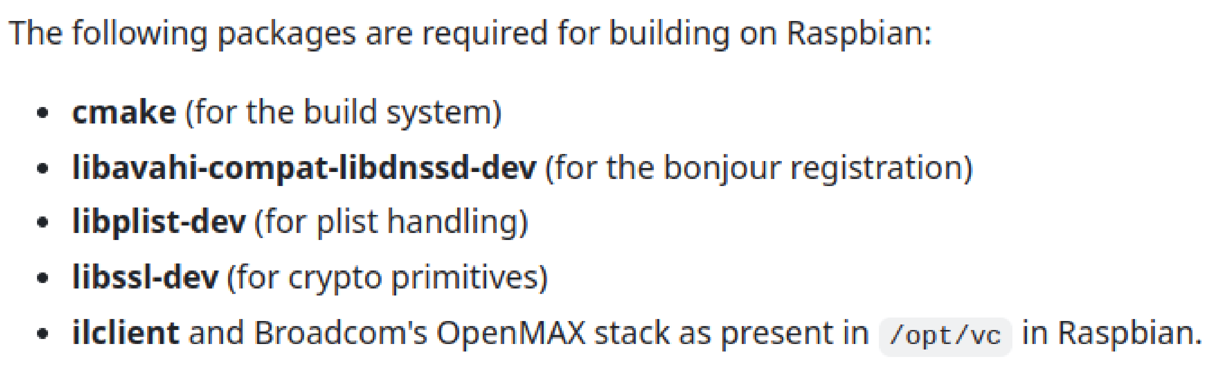
3. **Create a new directory called `recipes-info/rpiplay` inside your layer.**

4. **Reference the RPI-Play Official Repo:**
   You can find the RPI-Play repository here.

5. **Go to the `rpiplay` directory you created and start creating the recipe:**

   ```
   cd poky/meta-IVI/recipes-info/rpiplay
   recipetool create -o rpi-play.bb https://github.com/FD-/RPiPlay.git
   ```

6. **Handle dependencies:**
   If you Bitbake the recipe now, you will face dependency errors. Let's solve these by checking the repository. These dependencies include:



The following packages are required for building on Raspbian:

- **cmake** (for the build system)
- **libavahi-compat-libdnssd-dev** (for the bonjour registration)
- **libplist-dev** (for plist handling)
- **libssl-dev** (for crypto primitives)
- **ilclient** and Broadcom's OpenMAX stack as present in `/opt/vc` in Raspbian.

7. **Use this website** to search for each library and determine which layer it requires:
   Layer Index

8. **Edit the `rpi-play.bb` file to include dependencies:**
   Add this to the `DEPENDS` variable:

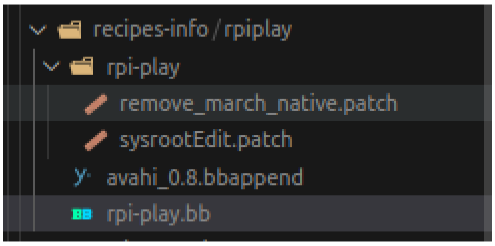
```
DEPENDS = "openssl avahi libplist userland gstreamer1.0 gstreamer1.0-plugins-base gstreamer1.0-plugins-good"
```

9. **Example `rpi-play.bb` file:**

```
LICENSE = "Unknown"
LIC_FILES_CHKSUM = "file://LICENSE;md5=1ebbd3e34237af26da5dc08a4e440464 \
                    file://lib/llhttp/LICENSE-MIT;md5=f5e274d60596dd59be0a1d1b19af7978 \
                    file://lib/playfair/LICENSE.md;md5=c7cd308b6eee08392fda2faed557d79a"

SRC_URI = "git://github.com/FD-/RPiPlay.git;protocol=https;branch=master \
           file://sysrootEdit.patch"

PV = "1.0+git${SRCPV}"
SRCREV = "64d0341ed3bef098c940c9ed0675948870a271f9"
S = "${WORKDIR}/git"

DEPENDS = "openssl avahi libplist userland gstreamer1.0 gstreamer1.0-plugins-base gstreamer1.0-plugins-good"

inherit cmake pkgconfig

TARGET_LDFLAGS      += "-Wl,--copy-dt-needed-entries"
EXTRA_OEMAKE:append  = 'LDFLAGS="${TARGET_LDFLAGS}"'
```

10. **Create a patch file inside the `rpi-play` directory:**
    - Create another directory called `rpi-play`.
    - Create a patch file named `sysrootEdit.patch`.

11. **File structure should be as follows:**



```
recipes-info / rpiplay
  rpi-play
    remove_march_native.patch
    sysrootEdit.patch
  avahi_0.8.bbappend
  rpi-play.bb
```

12. **Add the following data to the `sysrootEdit.patch` file:**

```
diff --git a/renderers/CMakeLists.txt b/renderers/CMakeLists.txt
index e561250..2524d3c 100755
--- a/renderers/CMakeLists.txt
```

```
+++ b/renderers/CMakeLists.txt
@@ -7,7 +7,7 @@ endif()

 if( CMAKE_SYSTEM_PROCESSOR MATCHES "(x86)|(X86)|(amd64)|(AMD64)" )
-    set( CMAKE_C_FLAGS "${CMAKE_C_FLAGS} -Ofast -march=native" )
+    set( CMAKE_C_FLAGS "${CMAKE_C_FLAGS} -Ofast -mcpu=cortex-a7 -mfpu=neon-vfpv4 -mfloat-abi=hard" )
 endif()

 set( RENDERER_LINK_LIBS "" )
 set( RENDERER_INCLUDE_DIRS "" )

 find_library( BRCM_GLES_V2 brcmGLESv2 HINTS ${CMAKE_SYSROOT}/usr/lib/ )
 find_library( BRCM_EGL brcmEGL HINTS ${CMAKE_SYSROOT}/usr/lib/ )
 find_library( OPENMAXIL openmaxil HINTS ${CMAKE_SYSROOT}/usr/lib/ )
 find_library( BCM_HOST bcm_host HINTS ${CMAKE_SYSROOT}/usr/lib/ )
 find_library( VCOS vcos HINTS ${CMAKE_SYSROOT}/usr/lib/ )
 find_library( VCHIQ_ARM vchiq_arm HINTS ${CMAKE_SYSROOT}/usr/lib/ )

 if( BRCM_GLES_V2 AND BRCM_EGL AND OPENMAXIL AND BCM_HOST AND VCOS AND VCHIQ_ARM )
    message( STATUS "Found OpenMAX libraries for Raspberry Pi" )
 include_directories( ${CMAKE_SYSROOT}/usr/include/
```

13. **Create another file called `avahi_0.8.bbappend` in the main directory of `rpi-play` and add the following content:**

```
PACKAGECONFIG += "libdns_sd"

do_install:append(){
install -m 0664 ${WORKDIR}/${PN}-${PV}/avahi-compat-libdns_sd/* ${D}/${includedir}/
}
```

14. **Finally, update the `userland_git.bb` file:** Add the following line at the end of the file (usually located at `poky/meta-raspberrypi/recipes-graphics/userland/userland_git.bb`):

    ```
    SYSROOT_DIRS:append=" ${prefix}/src"
    ```

15. Then bitbake the rpi-play and congrats 😃

    ```
    bitbake rpi-play
    ```
