

openfyde 适配orange pi 5 序列流程

(ft.orange pi 5 pro)

现状介绍

- ◆ Orangepi5 序列
- ◆ Rk3588 (标红已适配)
 - ◆ 5/5b/cm5/5 pro
- ◆ Rk3588s
 - ◆ 5 plus/max/ultra

主要流程

- ◆ loaders
 - ◆ idbloader.img uboot.itb rkspi_loader.img
- ◆ Device tree
- ◆ Uboot script
- ◆ mkrelease.sh

Loaders (1/n)

- ◆ git clone <https://github.com/orangepi-xunlong/orangepi-build>
- ◆ ./build.sh
- ◆ 选择uboot,
- ◆ 选择对应的板子
 - ◆ 比如orangepi cm5/pro/max/ultra

Orange Pi building script, <http://www.orangepi.org>

Please choose a Board.

Choose an option

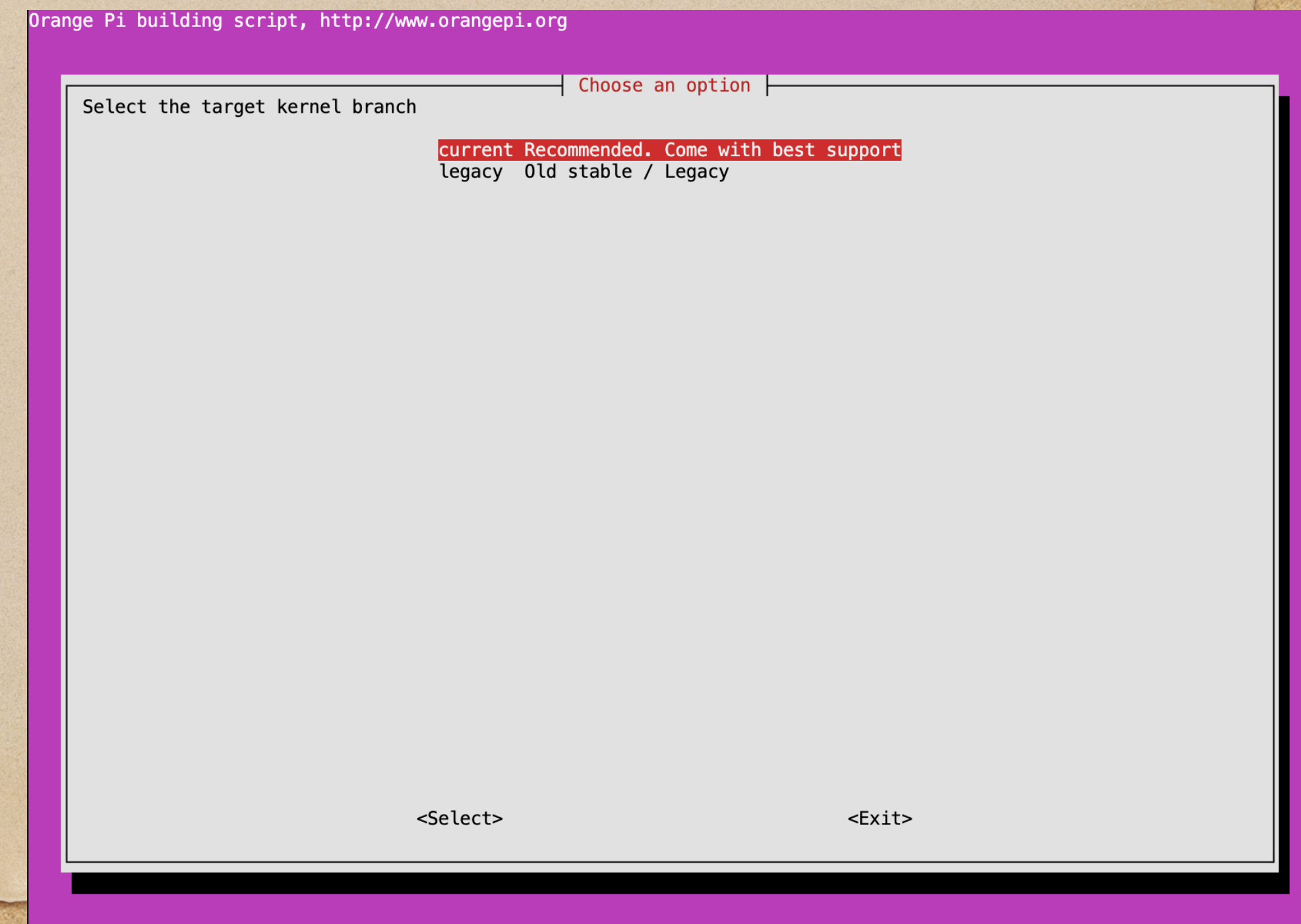
orangepi3	Allwinner H6 quad core 1GB/2GB RAM GBE WiFi/BT eMMC USB3
orangepi3-lts	Allwinner H6 quad core 2GB RAM GBE WiFi/BT-AW859A eMMC USB3
orangepizero2	Allwinner H616 quad core 512MB/1GB RAM WiFi/BT GBE SPI
orangepizero3	Allwinner H618 quad core 1GB/1.5GB/2GB/4GB RAM WiFi/BT GBE SPI
orangepizero2w	Allwinner H618 quad core 1GB/1.5GB/2GB/4GB RAM WiFi/BT SPI
orangepi4	Rockchip RK3399 hexa core 4GB RAM GBE eMMC USB3 USB-C WiFi/BT
orangepi4-lts	Rockchip RK3399 hexa core 4GB RAM GBE eMMC USB3 USB-C WiFi/BT
orangepi800	Rockchip RK3399 hexa core 4GB RAM GBE eMMC USB3 USB-C WiFi/BT VGA
orangepi5	Rockchip RK3588S octa core 4-16GB RAM GBE USB3 USB-C NVMe
orangepicm5	Rockchip RK3588S octa core 4-16GB RAM GBE USB3 USB-C
orangepicm5-tablet	Rockchip RK3588S octa core 4-16GB RAM USB3 USB-C WiFi/BT
orangepi5b	Rockchip RK3588S octa core 4-16GB RAM GBE USB3 USB-C WiFi/BT eMMC
orangepi5pro	Rockchip RK3588S octa core 4-16GB RAM GBE USB3 WiFi/BT NVMe eMMC
orangepi5max	Rockchip RK3588 octa core 4-16GB RAM 2.5GBE USB3 WiFi/BT NVMe eMMC
orangepi5ultra	Rockchip RK3588 octa core 4-16GB RAM 2.5GBE USB3 WiFi/BT NVMe eMMC
orangepi5plus	Rockchip RK3588 octa core 4-32GB RAM 2.5GBE USB3 USB-C WiFi/BT NVMe eMMC
orangepicm4	Rockchip RK3566 quad core 2-8GB RAM GBE eMMC USB3 NVMe WiFi/BT
orangepi3b	Rockchip RK3566 quad core 2-8GB RAM GBE eMMC USB3 NVMe WiFi/BT
orangepirv	Starfive JH7110 quad core 2-8GB RAM GBE USB3 NVMe WiFi/BT

<Select>

<Exit>

Loaders (2/n)

- ◆ 选择current
- ◆ 等待编译（第一次会初始化环境比较久）
 - ◆ 如有命令not found, 则下载



Loaders (3/3)

- ◆ 编译完成后

```
0+0 records in
0+0 records out
0 bytes copied, 4.4779e-05 s, 0.0 kB/s
Warning: The resulting partition is not properly aligned for best performance
Warning: The resulting partition is not properly aligned for best performance
592+0 records in
592+0 records out
303104 bytes (303 kB, 296 KiB) copied, 0.000761438 s, 398 MB/s
3197+0 records in
3197+0 records out
1636864 bytes (1.6 MB, 1.6 MiB) copied, 0.00378095 s, 433 MB/s
[ o.k. ] Building deb [ linux-u-boot-current-orangepi5pro_1.0.4_arm64.deb ]
[ o.k. ] U-boot build done [ @host ]
[ o.k. ] Target directory [ /mnt/data0/orangepi-build/output/debs/u-boot ]
[ o.k. ] File name [ linux-u-boot-current-orangepi5pro_1.0.4_arm64.deb ]
[ o.k. ] Runtime [ 0 min ]
[ o.k. ] Repeat Build Options [ sudo ./build.sh BOARD=orangepi5pro BRANCH=current BUILD_OPT=u-boot ]
yh0@yh0-MotherBoard-Series: /mnt/data0/orangepi-build$
```

```
yh0@yh0-MotherBoard-Series: /mnt/data0/orangepi-build$ ls u-boot/
v2017.09-rk3588
api          disk         Kbuild      README      u-boot.dtb
arch        doc          Kconfig     rkspi_loader.img u-boot.itb
bl31_0x00040000.bin Documentation lib        scripts     u-boot.its
bl31_0x000f0000.bin drivers      Licenses    snapshot.commit u-boot.lds
bl31_0xff100000.bin dts         MAINTAINERS spl        u-boot.map
board       env          Makefile    test        u-boot-nodtb.bin
cmd         examples    make.sh     tools
common      fs          net         tpl
config.mk   idbloader.img post        u-boot
configs     include    PREUPLOAD.cfg u-boot.cfg
```

- ◆ 将idbloader.img和u-boot.itb以及rkspi_loader.img拷贝到
cros_sdk下

```
4 directories, 12 files
yh0@yh0-MotherBoard-Series: /mnt/data0/r120$ tree src/overlays/overlay-orangepi5-openfyde/sys-boot/orangepi5-loaders/files/
src/overlays/overlay-orangepi5-openfyde/sys-boot/orangepi5-loaders/files/
├── orangepi5
│   ├── idbloader.img
│   ├── rkspi_loader.img
│   ├── rkspi_loader_sata.img
│   └── u-boot.itb
├── orangepi5b
│   ├── idbloader.img
│   ├── rkspi_loader.img
│   └── u-boot.itb
├── orangepi5plus
│   ├── idbloader.img
│   ├── rkspi_loader.img
│   └── u-boot.itb
└── orangepi5pro
    ├── idbloader.img
    ├── rkspi_loader.img
    └── u-boot.itb

4 directories, 13 files
yh0@yh0-MotherBoard-Series: /mnt/data0/r120$
```


uboot-script

◆ 根据需要设置dtb文件

boot.cmd M ●

```
src > overlays > overlay-orangepi5-openfyde > sys-boot > rk3588-uboot-script > files > boot.cmd
1  # Recompile with:
2  # mkimage -C none -A arm -T script -d /boot/boot.cmd /boot/boot.scr
3
4  # official orange pi 5 plus u-boot is not compiled with CONFIG_CMD_SCSI
5  # if scsi info; then
6  #   echo "It seems to be Orange Pi 5/5b."
7  #   setenv fdtfile rk3588s-orangepi-5.dtb
8  # else
9  #   echo "It seems to be Orange Pi 5 Plus."
10 #   setenv fdtfile rk3588-orangepi-5-plus.dtb
11 # fi
12 setenv fdtfile rk3588-orangepi-5-pro.dtb
13
```


mkrelease.sh

- ◆ 这里方便可以只将orangeπ5plus改成orangeπ5pro, 和之前添加的loaders下的目录名一致

src > overlays > overlay-orangepi5-openfyde > make-release-image > \$ orangeπ5_release.sh

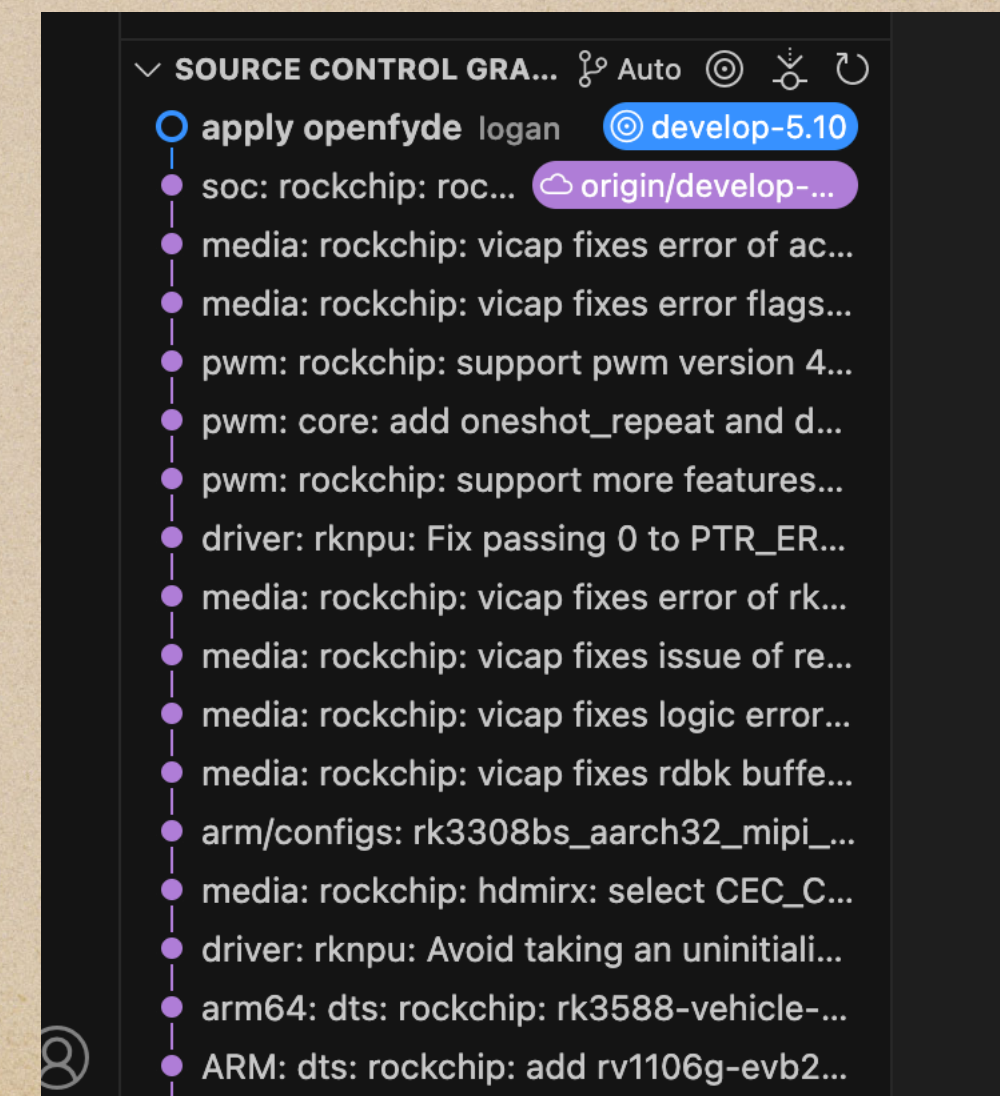
```
1  #!/bin/bash
2  #
3  shell_lines=295      # Adjust it if the script changes
4  version_string=r114
5  targetdir=orangeπ5-openfyde
6  TMPROOT=${TMPDIR:=./}
7  target=""
8  m2=""
9  TMP="$(mktemp -d ${TMPROOT}/XXXXXX)"
10
11  NVME_MAGIC='NVME'
12  SATA_MAGIC='SATA'
13  EMMC_MAGIC='EMMC'
14
15  BOARD_MAGIC=""
16  ORANGEPI5="orangeπ5"
17  ORANGEPI5B="orangeπ5b"
18  ORANGEPI5PLUS="orangeπ5plus"
19
20  declare -A BOARD_MAP=(
21      ["$ORANGEPI5"]="OP5 "
22      ["$ORANGEPI5B"]="OP5B"
23      ["$ORANGEPI5PLUS"]="OP5P"
24  )
25
26  board=""
27
```


Device tree (1/n)

- ◆ 创建打补丁的环境
- ◆ git clone <https://github.com/rockchip-linux/kernel> --branch develop-5.10
- ◆ for i in /target_dir/r120/openfyde/overlays/foundation-rk3588/chipset-rk3588/sys-kernel/chromeos-kernel-5_10/files/*.patch; do patch -p1 < \$i; done 应用一下 openfyde 的内核 patch

```
◆ patching file drivers/net/wireless/rockchip_wlan/rtl8852bu/core/rtw_sta_mgt.c
patching file drivers/net/wireless/rockchip_wlan/rtl8852bu/os_dep/linux/ioctl_mp.c
patching file drivers/net/wireless/rockchip_wlan/rtl8852bu/phl/phl_sound.c
patching file drivers/net/wireless/rockchip_wlan/rtl8852be/phl/hal_g6/hal_api_mac.c
patching file drivers/net/wireless/rockchip_wlan/rtl8852be/phl/hal_g6/rtl8852b/pci/rtl8852be_halinit.c
patching file drivers/net/wireless/rockchip_wlan/rtl8852be/phl/hal_g6/test/mp/hal_test_mp_efuse.c
patching file drivers/net/wireless/rockchip_wlan/rtl8852bu/phl/hal_g6/hal_api_mac.c
patching file drivers/net/wireless/rockchip_wlan/rtl8852bu/phl/hal_g6/phy/bb/halbb_la_mode.c
patching file drivers/net/wireless/rockchip_wlan/rtl8852bu/phl/hal_g6/test/mp/hal_test_mp_efuse.c
patching file drivers/gpu/drm/panel/panel-innolux-afj101-ba2131.c
patching file drivers/gpu/drm/panel/panel-jadard-jd9365da-h3.c
patching file include/linux/mm.h
patching file drivers/rknpu/include/rknpu_drv.h
patching file drivers/rknpu/include/rknpu_gem.h
patching file drivers/rknpu/include/rknpu_ioctl.h
patching file drivers/rknpu/include/rknpu_iommu.h
patching file drivers/rknpu/include/rknpu_job.h
patching file drivers/rknpu/include/rknpu_mem.h
patching file drivers/rknpu/rknpu_devfreq.c
patching file drivers/rknpu/rknpu_drv.c
patching file drivers/rknpu/rknpu_gem.c
patching file drivers/rknpu/rknpu_iommu.c
patching file drivers/rknpu/rknpu_job.c
patching file drivers/rknpu/rknpu_mem.c
patching file drivers/rknpu/rknpu_reset.c
patching file arch/arm64/boot/dts/rockchip/rk3588s-tablet-12c.dtsi
patching file drivers/misc/redriver/pi3dpx1207c.c
patching file arch/arm64/boot/dts/rockchip/rk3588s-tablet-12c-linux.dts
patching file drivers/gpu/drm/panel/panel-fydetab.c
patching file arch/arm64/boot/dts/rockchip/rk3588s-12c.dtsi
yh0@yh0-MotherBoard-Series:/mnt/data0/kernel$
```

- ◆ 把刚才的 patch 提交



Device tree (2/n)

- ◆ git clone <https://github.com/orangepi-xunlong/linux-orangepi/>
--branch orange-pi-5.10-rk35xx
- ◆ 将orangepi5 pro的dts和dtbo挑选出来，这里只是示意

```
yh0@yh0-MotherBoard-Series: /mnt/data0/linux-orangepi/arch/arm64/boot/dts/rockchip$ ls rk3588s-orangepi-5-pro*  
rk3588s-orangepi-5-pro-camera1.dtsi rk3588s-orangepi-5-pro-camera2.dtsi rk3588s-orangepi-5-pro.dts  
vh0@vh0-MotherBoard-Series: /mnt/data0/linux-orangepi/arch/arm64/boot/dts/rockchip$
```


Device tree (3/3)

- ◆ 拷贝之前的dts和dtsi到rockchip-linux的内核环境
- ◆ 修改makefile, 增加orangepi5pro的dts

```
286 dtb=$(CONFIG_ARCH_ROCKCHIP) += rk3588s-khadas-edge2.dtb
287 dtb=$(CONFIG_ARCH_ROCKCHIP) += rk3588s-nanopi-r6c.dtb
288 dtb=$(CONFIG_ARCH_ROCKCHIP) += rk3588s-nanopi-r6s.dtb
289 dtb=$(CONFIG_ARCH_ROCKCHIP) += rk3588s-orangepi-5.dtb
290 dtb=$(CONFIG_ARCH_ROCKCHIP) += rk3588s-orangepi-5b.dtb
291 dtb=$(CONFIG_ARCH_ROCKCHIP) += rk3588s-orangepi-5-pro.dtb
292 dtb=$(CONFIG_ARCH_ROCKCHIP) += rk3588s-radxa-cm5-10.dtb
293 dtb=$(CONFIG_ARCH_ROCKCHIP) += rk3588s-rock-5a.dtb
294 dtb=$(CONFIG_ARCH_ROCKCHIP) += rk3588s-tablet-12c-linux.dtb
295 dtb=$(CONFIG_ARCH_ROCKCHIP) += rk3588s-firefly-itx-3588i.dtb
```

- ◆ 将这些修改提交到stage之后, 然后git diff --staged即可得到patch增加到 openfyde/overlays/foundation-rk3588/chipset-rk3588/sys-kernel/chromeos-kernel-5_10/files/5.10.198/061-add-orangepi-5-pro.patch并在上层目录添加符号链接

```
016-fix-elf-for-arc.patch      036-fix-rkwifi-autopoweroff.patch      058-fix-panel-innolux.patch
017-fix-evb1-panel.patch      037-fix-gpu-wakelock.patch              059-update-rknpu-to-0.9.6.patch
019-docker-mode-driver.patch  038-disable-page-migration-of-mali.patch 060-fix-dp-upto-4k.patch
● yh0@yh0-MotherBoard-Series:/mnt/data0/kernel$ git diff --staged > ../r120/openfyde/overlays/foundation-rk3588/chipset-rk3588/sys-kernel/chromeos-kernel-5_10/files/5.10.198/061-add-orangepi-5-pro.patch
● yh0@yh0-MotherBoard-Series:/mnt/data0/kernel$ cd ../r120/openfyde/overlays/foundation-rk3588/chipset-rk3588/sys-kernel/chromeos-kernel-5_10/files/
● yh0@yh0-MotherBoard-Series:/mnt/data0/r120/openfyde/overlays/foundation-rk3588/chipset-rk3588/sys-kernel/chromeos-kernel-5_10/files$ ls
000-9-1-add-rockchip_wlan-8852be-8852bu.patch  022-fix-headset-jack.patch      046-fix-hdmi-dp-output.patch
000-9-add-rock5-orangepi-khadas.patch          023-fix-usbc-dual-role.patch    047-change-vops-for-boards.patch
```

ln: failed to create symbolic link '5.10.198/061-add-orangepi-5-pro.patch': file exists

- ◆ ● yh0@yh0-MotherBoard-Series:/mnt/data0/r120/openfyde/overlays/foundation-rk3588/chipset-rk3588/sys-kernel/chromeos-kernel-5_10/files\$ ln -s 5.10.198/061-add-orangepi-5-pro.patch 061-add-orangepi-5-pro.patch

整合 (1/n)

- ◆ 进入cros_sdk
- ◆ emerge-orangepi5-openfyde chromeos-kernel-5_10
- ◆ emerge-orangepi5-openfyde orangepi5-loaders
- ◆ emerge-orangepi5-openfyde rk3588-uboot-script
- ◆ 然后构建镜像, 再mkrelease即可移植成功

整合 (2/n)

◆ emerge-orangepi5-openfyde chromeos-kernel-5_10

```
tar: Write checkpoint 175000
tar: Write checkpoint 176000
tar: Write checkpoint 177000
tar: Write checkpoint 178000
tar: Write checkpoint 179000
tar: Write checkpoint 180000
13:54:13.620 >>> Done.

>>> 13:54:14.620 Installing (1 of 1) sys-kernel/chromeos-kernel-5_10-5.10.198::chipset-rk3588 to /build/orangepi5-openfyde/
* QA Notice: Symbolic link /lib/modules/5.10.198-fyde/source points to /build/orangepi5-openfyde/tmp/portage/sys-kernel/chromeos-kernel-5_10-5.10.198/work/chromeos-kernel-5_10-5.10.198 which does not exist.
* QA Notice: Symbolic link /lib/modules/5.10.198-fyde/build points to /build/orangepi5-openfyde/var/cache/portage/sys-kernel/chromeos-kernel-5_10 which does not exist.
* QA Notice: Symbolic link /usr/src/linux points to /build/orangepi5-openfyde/var/cache/portage/sys-kernel/chromeos-kernel-5_10 which does not exist.

>>> 13:54:20.552 Completed (1 of 1) sys-kernel/chromeos-kernel-5_10-5.10.198::chipset-rk3588 to /build/orangepi5-openfyde/

* Messages for package sys-kernel/chromeos-kernel-5_10-5.10.198 merged to /build/orangepi5-openfyde/:
* Log file: /build/orangepi5-openfyde/tmp/portage/logs/sys-kernel:chromeos-kernel-5_10-5.10.198:20241031-055028.log

* Could not find "/mnt/host/source/src/third_party/kernel/v5.10-rockchip".
* The CROS_WORKON_LOCALNAME for this ebuild should be updated
* to be relative to "/mnt/host/source/src/third_party".
* Using kernel config: /mnt/host/source/src/overlays/overlay-orangepi5-openfyde/kconfigs/orangepi5-5_10-def-r1
*   - enabling Enable ACPI AC config
*   - enabling binder IPC config
*   - disabling framebuffer console config
*   - enabling Enable IIO service config
*   - enabling Support running virtual machines with KVM config
*   - disabling Additional lock debug settings config
*   - enabling CDC MBIM driver config
*   - disabling Virtual KMS (Kernel Mode Setting) config
*   - enabling 802.1Q VLAN config
*   - enabling vTPM proxy support config
*   - disabling VT console config
```


整合 (3/n)

- ◆ emerge-orangepi5-openfyde orangepi5-loaders

```
14:01:48.431 >>> Source compiled.
14:01:48.556 >>> Test phase [not enabled]: sys-boot/orangepi5-loaders-0.0.1-r2
* Running stacked hooks for pre_src_install
* tidy_setup ...
14:01:48.683
14:01:48.684 >>> Install sys-boot/orangepi5-loaders-0.0.1-r2 into /build/orangepi5-openfyde/tmp/portage/sys-boot/orangepi5-loaders-0.0.1-r2/image
14:01:48.742 >>> Completed installing sys-boot/orangepi5-loaders-0.0.1-r2 into /build/orangepi5-openfyde/tmp/portage/sys-boot/orangepi5-loaders-0.0.1-r2/image
14:01:48.743
* Running stacked hooks for post_src_install
* build_toolchain_catch ...
* coverage_logs ...
* No object files found with LLVM instrumented data.
* wrap_old_config_scripts ...
* Final size of build directory: 4 KiB
* Final size of installed tree: 16564 KiB (16.1 MiB)
14:01:48.778
* Generating license for sys-boot/orangepi5-loaders-0.0.1-r2 in /build/orangepi5-openfyde/tmp/portage/sys-boot/orangepi5-loaders-0.0.1-r2
14:01:49.187: INFO: Read licenses for sys-boot/orangepi5-loaders-0.0.1-r2: BSD-Google
14:01:49.187: INFO: sys-boot/orangepi5-loaders-0.0.1-r2: using stock|cust license(s) BSD-Google
tar: Write checkpoint 1000
tar: Write checkpoint 2000
tar: Write checkpoint 3000
tar: Write checkpoint 4000
14:01:49.438 >>> Done.

>>> 14:01:49.670 Installing (1 of 1) sys-boot/orangepi5-loaders-0.0.1-r2::orangepi5-openfyde to /build/orangepi5-openfyde/

>>> 14:01:51.066 Completed (1 of 1) sys-boot/orangepi5-loaders-0.0.1-r2::orangepi5-openfyde to /build/orangepi5-openfyde/

>>> Using system located in ROOT tree /build/orangepi5-openfyde/
(cr) (release-R120-15662.B/(285d3f08...)) v0@v0-MotherBoard-Series /mnt/host/source/src/scripts $ emerge-orangepi5-openfyde
```


整合 (4/n)

◆ emerge-orangepi5-openfyde rk3588-uboot-script

```
Created: Thu Oct 31 14:03:13 2024
Image Type: ARM Linux Script (uncompressed)
Data Size: 4254 Bytes = 4.15 KiB = 0.00 MiB
Load Address: 00000000
Entry Point: 00000000
Contents:
  Image 0: 4246 Bytes = 4.15 KiB = 0.00 MiB
14:03:13.304 >>> Source compiled.
14:03:13.432 >>> Test phase [not enabled]: sys-boot/rk3588-uboot-script-0.0.1-r7
* Running stacked hooks for pre_src_install
* tidy_setup ...
14:03:13.558
14:03:13.560 >>> Install sys-boot/rk3588-uboot-script-0.0.1-r7 into /build/orangepi5-openfyde/tmp/portage/sys-boot/rk3588-uboot-script-0.0.1-r7/image
14:03:13.607 >>> Completed installing sys-boot/rk3588-uboot-script-0.0.1-r7 into /build/orangepi5-openfyde/tmp/portage/sys-boot/rk3588-uboot-script-0.0.1-r7/image
14:03:13.608
* Running stacked hooks for post_src_install
* build_toolchain_catch ...
* coverage_logs ...
* No object files found with LLVM instrumented data.
* wrap_old_config_scripts ...
* Final size of build directory: 20 KiB
* Final size of installed tree: 24 KiB
14:03:13.641
* Generating license for sys-boot/rk3588-uboot-script-0.0.1-r7 in /build/orangepi5-openfyde/tmp/portage/sys-boot/rk3588-uboot-script-0.0.1-r7
14:03:14.044: INFO: Read licenses for sys-boot/rk3588-uboot-script-0.0.1-r7: BSD-Google
14:03:14.044: INFO: sys-boot/rk3588-uboot-script-0.0.1-r7: using stock|cust license(s) BSD-Google
14:03:14.228 >>> Done.

>>> 14:03:14.449 Installing (1 of 1) sys-boot/rk3588-uboot-script-0.0.1-r7::orangepi5-openfyde to /build/orangepi5-openfyde/

>>> 14:03:15.788 Completed (1 of 1) sys-boot/rk3588-uboot-script-0.0.1-r7::orangepi5-openfyde to /build/orangepi5-openfyde/

>>> Using system located in R00T tree /build/orangepi5-openfyde/
(cr) (release-R120-15662.B/(285d3f08...)) yh0@yh0-MotherBoard-Series /mnt/host/source/src/scripts $ █
```


整合 (5/n)

- ◆ 构建镜像 `cros build-image --board=orangepi5-openfyde --noenable_rootfs_verification`

```
14:17:52.768 INFO : Unmounting image from /mnt/host/source/src/build/images/orangepi5-openfyde/R120-15662.71.0-d2024_10_31_141347-a1/stateful_dir and /mnt/host/source/src/build/images/oran
pi5-openfyde/R120-15662.71.0-d2024_10_31_141347-a1/rootfs_dir
14:17:52.769 INFO : Unmounting temporary rootfs /mnt/host/source/src/build/images/orangepi5-openfyde/R120-15662.71.0-d2024_10_31_141347-a1/rootfs_dir//build/rootfs.
Cleaning up /usr/local symlinks for /mnt/host/source/src/build/images/orangepi5-openfyde/R120-15662.71.0-d2024_10_31_141347-a1/stateful_dir/dev_image
14:17:52.922: INFO: run: sudo 'CROS_CACHEDIR=/mnt/host/source/.cache' 'PARALLEL_EMERGE_STATUS_FILE=/tmp/tmpzrbeilga/status_file' -- /mnt/host/source/chromite/scripts/cros_losetup attach /mnt/
st/source/src/build/images/orangepi5-openfyde/R120-15662.71.0-d2024_10_31_141347-a1/chromiumos_image.bin
14:17:52.983: INFO: run: cgrpt show -n /mnt/host/source/src/build/images/orangepi5-openfyde/R120-15662.71.0-d2024_10_31_141347-a1/chromiumos_image.bin
14:17:53.562: INFO: Detected artifacts meta for 2 DLCs.
14:17:53.562: INFO: Detected the following DLCs (scaled=False): sample-dlc, termina-dlc, termina-tools-dlc
14:17:53.681: INFO: Detected the following DLCs (scaled=True): fio-dlc, handwriting-am, handwriting-ar, handwriting-base, handwriting-be, handwriting-bg, handwriting-bn, handwriting-ca, handw
ting-cs, handwriting-da, handwriting-de, handwriting-el, handwriting-es, handwriting-et, handwriting-fa, handwriting-fi, handwriting-fil, handwriting-fr, handwriting-ga, handwriting-gu, handw
ting-hi, handwriting-hr, handwriting-hu, handwriting-hy, handwriting-id, handwriting-is, handwriting-it, handwriting-iw, handwriting-ja, handwriting-ka, handwriting-kk, handwriting-km, handwr
ing-kn, handwriting-ko, handwriting-lo, handwriting-lt, handwriting-lv, handwriting-ml, handwriting-mn, handwriting-mr, handwriting-ms, handwriting-mt, handwriting-my, handwriting-ne, handwri
ng-nl, handwriting-no, handwriting-or, handwriting-pa, handwriting-pl, handwriting-pt, handwriting-ro, handwriting-ru, handwriting-si, handwriting-sk, handwriting-sl, handwriting-sr, handwrit
g-sv, handwriting-ta, handwriting-te, handwriting-th, handwriting-ti, handwriting-tr, handwriting-uk, handwriting-ur, handwriting-vi, handwriting-zh, handwriting-zh-HK, pumpkin, scaled-dlc, s
een-ai, sr-bt-dlc, tts-bn-bd, tts-bn-bd-b, tts-cs-cz, tts-cs-cz-b, tts-da-dk, tts-da-dk-b, tts-de-de, tts-de-de-b, tts-el-gr, tts-el-gr-b, tts-en-au, tts-en-au-b, tts-en-gb, tts-en-gb-b, tts-
-us, tts-en-us-b, tts-es-es, tts-es-es-b, tts-es-us, tts-es-us-b, tts-fi-fi, tts-fi-fi-b, tts-fil-ph, tts-fil-ph-b, tts-fr-fr, tts-fr-fr-b, tts-hi-in, tts-hi-in-b, tts-hu-hu, tts-hu-hu-b, tts-
d-id, tts-id-id-b, tts-it-it, tts-it-it-b, tts-ja-jp, tts-ja-jp-b, tts-km-kh, tts-km-kh-b, tts-ko-kr, tts-ko-kr-b, tts-nb-no, tts-nb-no-b, tts-ne-np, tts-ne-np-b, tts-nl-nl, tts-nl-nl-b, tts-
-pl, tts-pl-pl-b, tts-pt-br, tts-pt-br-b, tts-si-lk, tts-si-lk-b, tts-sk-sk, tts-sk-sk-b, tts-sv-se, tts-sv-se-b, tts-th-th, tts-th-th-b, tts-tr-tr, tts-tr-tr-b, tts-uk-ua, tts-uk-ua-b, tts-v
vn, tts-vi-vn-b, tts-yue-hk, tts-yue-hk-b
14:17:54: NOTICE: Developer image created as chromiumos_image.bin
To copy the image to a USB key, use:
cros flash usb:// ../build/images/orangepi5-openfyde/R120-15662.71.0-d2024_10_31_141347-a1/chromiumos_image.bin
To flash the image to a Chrome OS device, use:
cros flash ${DUT_IP} ../build/images/orangepi5-openfyde/R120-15662.71.0-d2024_10_31_141347-a1/chromiumos_image.bin
Note that the device must be accessible over the network.
A base image will not work in this mode, but a test or dev image will.
To run the image in a virtual machine, use:
cros vm --start --image-path=../build/images/orangepi5-openfyde/R120-15662.71.0-d2024_10_31_141347-a1/chromiumos_image.bin --board=orangepi5-openfyde

(cr) (release-R120-15662.B/(285d3f08...)) yh0@yh0-MotherBoard-Series /mnt/host/source/src/scripts $
```


整合 (6/n)

◆ Mkrelease后

◆
yho@yh0-MotherBoard-Series: /mnt/data0/r120/openfyde/overlays/overlay-orangepi5-openfyde/make-release-image\$./make-release-image.sh ../src/build/images/orangepi5-openfyde/latest/chromiumos_image.bin
usage: ./make-release-image.sh chromiumos_image target
yho@yh0-MotherBoard-Series: /mnt/data0/r120/openfyde/overlays/overlay-orangepi5-openfyde/make-release-image\$./make-release-image.sh ../../../../src/build/images/orangepi5-openfyde/latest/chromiumos_image.bin out/orange-pi-5-pro.run
compressing image
tar: Write checkpoint 20000

◆
tar: Write checkpoint 660000
tar: Write checkpoint 680000
tar: Write checkpoint 700000
tar: Write checkpoint 720000
tar: Write checkpoint 740000
tar: Write checkpoint 760000
tar: Write checkpoint 780000
tar: Write checkpoint 800000
tar: Write checkpoint 820000
tar: Write checkpoint 840000
tar: Write checkpoint 860000
tar: Write checkpoint 880000
tar: Write checkpoint 900000
tar: Write checkpoint 920000
tar: Write checkpoint 940000
tar: Write checkpoint 960000
tar: Write checkpoint 980000
tar: Write checkpoint 1000000
Generated out/orange-pi-5-pro.run
yho@yh0-MotherBoard-Series: /mnt/data0/r120/openfyde/overlays/

PROBLEMS OUTPUT TERMINAL PORTS DEBUG CONSOLE

* Supported boards *

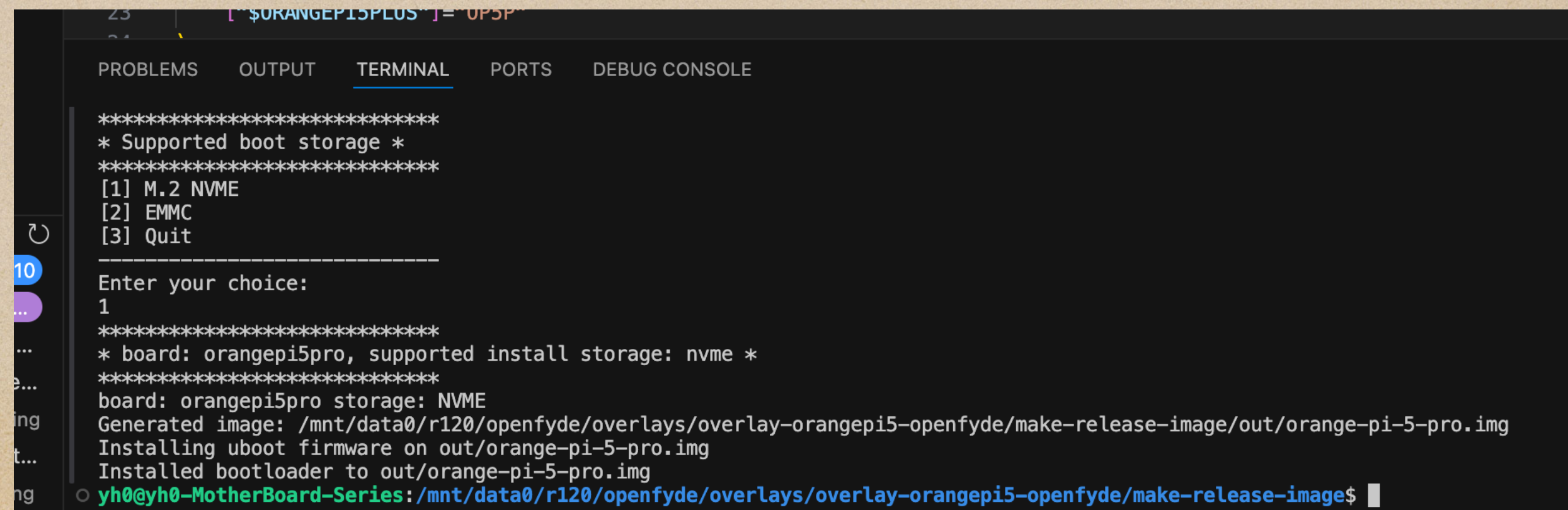
[1] orange pi 5
[2] orange pi 5b
[3] orange pi 5 plus
[4] Quit

Enter your choice:
█

◆ 运行这个脚本执行安装包选择, 选择之前改的orange5plus, m2和emmc一样, 根据需要生成系统镜像

整合 (7/7)

- ◆ 最后，把这个镜像根据需要刷入对应的tf卡/emmc/m.2磁盘即可。



```
23 [~$ORANGEPI5PLUS]=~$ORANGEPI5PLUS
24
PROBLEMS OUTPUT TERMINAL PORTS DEBUG CONSOLE
*****
* Supported boot storage *
*****
[1] M.2 NVME
[2] EMMC
[3] Quit
-----
Enter your choice:
1
*****
* board: orangepi5pro, supported install storage: nvme *
*****
board: orangepi5pro storage: NVME
Generated image: /mnt/data0/r120/openfyde/overlays/overlay-orangepi5-openfyde/make-release-image/out/orange-pi-5-pro.img
Installing u-boot firmware on out/orange-pi-5-pro.img
Installed bootloader to out/orange-pi-5-pro.img
○ yh0@yh0-MotherBoard-Series: /mnt/data0/r120/openfyde/overlays/overlay-orangepi5-openfyde/make-release-image$
```