

Wyze Camera Experiments

Experiments with Wyze Cameras.

2023-12-05

Notes

Testing on a Wyze Cam v2, model numner WYZEC2.

Preparing the SD Card

Downloaded openmiko_firmware.bin, renamed it to boot.bin, and copied it to the root of a freshly VFAT formatted SD card.

Also on the card, created the following file:

```
/config/overlay/etc/hostname
```

```
puck
```

Used the scripts included in the utilities/ directory to create wpa_supplicant.conf and openmiko.conf files, which were also copied to the /config/overlay/etc/ directory on the SD card.

```
/config/overlay/etc/wpa_supplicant.conf
```

```
ctrl_interface=/var/run/wpa_supplicant
```

```
ctrl_interface_group=0
```

```
ap_scan=1
```

```
bgscan="simple:30:-45:300"
```

```
network={
```

```
    ssid="K"
```

```
    scan_ssid=0
```

```
    key_mgmt=WPA-PSK
```

```
    pairwise=CCMP TKIP
```

```
    group=CCMP TKIP WEP104 WEP40
```

```
    psk="[REDACTED]"
```

```
    priority=2
```

```
}
```

```
/config/overlay/etc/openmiko.conf
```

```
ENABLE_DEBUG=0
```

```
# Starts ffmpeg on startup recording from the v4l2rtspserver
```

```
ENABLE_RECORDING=0
```

```
# Start the micropython based api
```

```
ENABLE_API=1
```

```
# Use a swapfile on the sdcard
```

```
ENABLE_SWAP=1
```

```
# Use this setting if swapfile is a dedicated partition
SWAPFILE=/dev/mmcblk0p1
# Set partition to use for mounting at /sdcard
SD_PARTITION=/dev/mmcblk0p2
SD_FILESYSTEM=vfat
# Enable MJPEG over HTTP
ENABLE_MJPEG_OVER_HTTP=0
MJPEG_FPS=15
# Script that detects nighttime/daytime and turns on IR LEDs
ENABLE_AUTONIGHT=1
AUTONIGHT_PARAMS="-j 3 -w 3 -1 1200000 -2 930000,14,10 -3 3000,17,8"
# Set alternate videocapture settings file
# VIDEO_CAPTURE_SETTINGS=/etc/videocapture_settings_1_encoder.json
# Set enable audio (is currently buggy, use at your own risk!)
ENABLE_AUDIO=0
# Make sure these settings match the /etc/videocapture_settings.json file
VIDEO_DEV_1=/dev/video3
VIDEO_DEV_2=/dev/video4
VIDEO_DEV_3=/dev/video5
# Use 8189fs for WyzeCam V2. For the WyzeCam Pan and Dafang use 8189es
WIFI_MODULE=8189fs
# Disables LEDs on the camera
DISABLE_LEDS=0
# Enable Logging
ENABLE_LOGGING=0
```

Flashing Wyze Cam

- Insert the SD card into the Wyze Cam.
- Hold down the button, plug in the power, wait about 3 seconds for the blue and white LEDs to light (and stay lit), and let go of the button.
- The camera should be ready to SSH in to when the amber LED blinks at a rate of about half a second.

Playback

VLC `rtsp://10.0.0.122:8554/video3_unicast`

SSH

You can SSH in to a camera with `ssh root@10.0.0.122`. The default password is `root`.

Misc.

```
# dmesg
[ 0.000000] Initializing cgroup subsys cpu
[ 0.000000] Initializing cgroup subsys cpuacct
[ 0.000000] Linux version 3.10.14 (root@a79fc9893cc9) (gcc version 4.7.4 (Buildroot 2016.02) ) #1
[ 0.000000] bootconsole [early0] enabled
[ 0.000000] CPU0 RESET ERROR PC:80207FE0
[ 0.000000] [<80207fe0>] __delay+0x0/0x10
[ 0.000000] CPU0 revision is: 00d00101 (Ingenic Xburst)
[ 0.000000] FPU revision is: 00b70000
[ 0.000000] cgu_get_rate, parent = 860160000, rate = 0, m = 0, n = 0, reg val = 0x000020ff
[ 0.000000] CCLK:860MHz L2CLK:430Mhz H0CLK:200MHz H2CLK:200Mhz PCLK:100Mhz
[ 0.000000] Determined physical RAM map:
[ 0.000000]   memory: 004f7000 @ 00010000 (usable)
[ 0.000000]   memory: 00079000 @ 00507000 (usable after init)
[ 0.000000] User-defined physical RAM map:
[ 0.000000]   memory: 06000000 @ 00000000 (usable)
[ 0.000000] Initrd not found or empty - disabling initrd
[ 0.000000] Zone ranges:
[ 0.000000]   Normal   [mem 0x00000000-0x05ffffff]
[ 0.000000] Movable zone start for each node
[ 0.000000] Early memory node ranges
[ 0.000000]   node    0: [mem 0x00000000-0x05ffffff]
[ 0.000000] On node 0 totalpages: 24576
[ 0.000000] free_area_init_node: node 0, pgdat 80503cf0, node_mem_map 81000000
[ 0.000000]   Normal zone: 192 pages used for memmap
[ 0.000000]   Normal zone: 0 pages reserved
[ 0.000000]   Normal zone: 24576 pages, LIFO batch:3
[ 0.000000] Primary instruction cache 32kB, 8-way, VIPT, linesize 32 bytes.
[ 0.000000] Primary data cache 32kB, 8-way, VIPT, no aliases, linesize 32 bytes
[ 0.000000] pls check processor_id[0x00d00101],sc_jz not support!
[ 0.000000] MIPS secondary cache 128kB, 8-way, linesize 32 bytes.
[ 0.000000] pcpu-alloc: s0 r0 d32768 u32768 alloc=1*32768
[ 0.000000] pcpu-alloc: [0] 0
[ 0.000000] Built 1 zonelists in Zone order, mobility grouping off. Total pages: 24384
[ 0.000000] Kernel command line: console=tty0 console=ttyS1,115200n8 mem=96M@0x0 ispmem=8M@0x60000
[ 0.000000] PID hash table entries: 512 (order: -1, 2048 bytes)
[ 0.000000] Dentry cache hash table entries: 16384 (order: 4, 65536 bytes)
[ 0.000000] Inode-cache hash table entries: 8192 (order: 3, 32768 bytes)
[ 0.000000] Memory: 91360k/98304k available (3877k kernel code, 6944k reserved, 1205k data, 484k i
[ 0.000000] SLUB: HWalign=32, Order=0-3, MinObjects=0, CPUs=1, Nodes=1
[ 0.000000] Preemptible hierarchical RCU implementation.
[ 0.000000] NR_IRQS:418
[ 0.000000] clockevents_config_and_register success.
[ 0.000024] Calibrating delay loop... 858.52 BogoMIPS (lpj=4292608)
[ 0.087752] pid_max: default: 32768 minimum: 301
[ 0.092734] Mount-cache hash table entries: 512
[ 0.097831] Initializing cgroup subsys debug
[ 0.102092] Initializing cgroup subsys freezer
[ 0.107912] devtmpfs: initialized
[ 0.112580] regulator-dummy: no parameters
[ 0.116894] NET: Registered protocol family 16
[ 0.136778] bio: create slab <bio-0> at 0
[ 0.143086] jz-dma jz-dma: JZ SoC DMA initialized
[ 0.148208] usbcore: registered new interface driver usbfs
[ 0.153749] usbcore: registered new interface driver hub
[ 0.159239] usbcore: registered new device driver usb
[ 0.164452] i2c-gpio i2c-gpio.1: using pins 57 (SDA) and 58 (SCL)
[ 0.170709] (null): set:249 hold:250 dev=100000000 h=500 l=500
[ 0.176837] gpio: Linux gpio interface v0.10
```

```

# lsmod
Module                Size  Used by    Tainted: G
v4l2loopback          22369  4
snd_aloop              12002  0
snd_pcm                68453  1 snd_aloop
snd_page_alloc         3810   1 snd_pcm
snd_timer              18670  1 snd_pcm
snd                    39168  3 snd_aloop,snd_pcm,snd_timer
sensor_jxf23           9136   1
tx_isp                 337860  3
sinfo                  12972  0
8189fs                 1114399 0

# cat /proc/cpuinfo
system type           : bull
machine               : Unknown
processor              : 0
cpu model              : Ingenic Xburst V0.1  FPU V0.0
BogoMIPS              : 858.52
wait instruction       : yes
microsecond timers     : no
tlb_entries            : 32
extra interrupt vector : yes
hardware watchpoint    : yes, count: 1, address/irw mask: [0x0fff]
isa                   : mips32r1
ASEs implemented       :
shadow register sets   : 1
kscratch registers     : 7
core                   : 0
VCED exceptions        : not available
VCEI exceptions        : not available

Hardware               : isvp
Serial                 : 00000000 00000000 00000000 00000000

```

```
# cat /proc/meminfo
MemTotal:          91844 kB
MemFree:           4200 kB
Buffers:           804 kB
Cached:            14236 kB
SwapCached:         0 kB
Active:            8768 kB
Inactive:          12384 kB
Active(anon):       1880 kB
Inactive(anon):     4384 kB
Active(file):       6888 kB
Inactive(file):     8000 kB
Unevictable:        0 kB
Mlocked:           0 kB
SwapTotal:         2097148 kB
SwapFree:          2097148 kB
Dirty:             8 kB
Writeback:          0 kB
AnonPages:         6132 kB
Mapped:            38068 kB
Shmem:             152 kB
Slab:              5980 kB
SReclaimable:      3168 kB
SUnreclaim:        2812 kB
KernelStack:       552 kB
PageTables:        476 kB
NFS_Unstable:       0 kB
Bounce:            0 kB
WritebackTmp:       0 kB
CommitLimit:       2143068 kB
Committed_AS:      197800 kB
VmallocTotal:      1048372 kB
VmallocUsed:        35532 kB
VmallocChunk:      999352 kB
```

Cameras

Puck

Hostname puck

IP 10.0.0.122

MAC C8:02:8F:82:A7:9A