

Raspberry Pi - Support #728

Using Motion To Stream a Webcam with a Raspberry Pi on Arch

01/20/2016 09:56 AM - Daniel Curtis

Status:	Closed	Start date:	01/20/2016
Priority:	Normal	Due date:	
Assignee:	Daniel Curtis	% Done:	100%
Category:	Camera Server	Estimated time:	1.00 hour
Target version:	Arch Linux	Spent time:	6.00 hours

Description

This is a guide on how I created a video stream using a webcam attached to a Raspberry Pi Model B running Arch Linux.

Prepare the Environment

- Make sure the system is up to date:

```
sudo pacman -Syu
```

Get Webcam Information

- Install the v4l2 utilities:

```
sudo pacman -S v4l-utils
```

- Get the current resolutions and pixel format of the webcam:

```
v4l2-ctl -V
```

- **NOTE:** For more details use the following command:

```
v4l2-ctl --all
```

- Get a list of supported resolutions and pixel formats:

```
v4l2-ctl --list-formats-ext
```

- Set the resolution of the webcam to 352x288 (to make streaming a little faster):

```
v4l2-ctl --set-fmt-video=width=352,height=288,pixelformat=0
```

Install Motion

- Install motion:

```
sudo pacman -S motion
```

- Edit the motion config file:

```
nano /etc/motion/motion.conf
```

- And modify the following parameters:

```
daemon on
v4l2_palette 2
width 352
height 288
framerate 100
webcam_localhost off
control_localhost off
output_normal off
ffmpeg_cap_new off
ffmpeg_cap_motion off
webcam_motion off
webcam_maxrate 100
```

- Test start the motion server to check that everything is running properly:

```
sudo motion -n -c /etc/motion/motion.conf
```

- Ctrl+C to quit the server when done testing.

- Make the /run/motion directory:

```
mkdir /run/motion
```

- Start and enable the server at boot:

```
sudo systemctl enable motion
sudo systemctl start motion
```

- Open a web browser and go to <http://motion.example.com:8081> to view the video stream.
 - Open a web browser and go to <http://motion.example.com:8080> to view configuration information.

Install Nginx

- Install Nginx

```
sudo pacman -S nginx
```

- Start and enable nginx at boot:

```
sudo systemctl enable nginx
sudo systemctl start nginx
```

- Create a configuration directory to make managing individual server blocks easier

```
sudo mkdir /etc/nginx/conf.d
```

- Edit the main nginx config file:

```
sudo vi /etc/nginx/nginx.conf
```

- And strip down the config file and add the include statement at the end to make it easier to handle various server blocks:

```
worker_processes 1;
error_log /var/log/nginx-error.log;

events {
    worker_connections 1024;
}

http {
    include mime.types;
    default_type application/octet-stream;
    sendfile on;
    keepalive_timeout 65;

    # nginx may need to resolve domain names at run time
    resolver 192.168.1.1 ipv6=off;

    include /etc/nginx/conf.d/*.conf;
}
```

- Add a camera site server block:

```
sudo vi /etc/nginx/conf.d/camera.example.com.conf
```

- Add the following:

```
server {
    listen 80 default_server;
    server_name camera.example.com;
    access_log /var/log/camera.example.com.log;

    location / {
        proxy_pass http://localhost:8081/;
    }
}
```

Resources

- <http://www.lavrsen.dk/fo/wiki/bin/view/Motion/ConfigFileOptions>
- <http://www.lavrsen.dk/fo/wiki/bin/view/Motion/MotionGuideBasicFeatures>
- <http://pimylifeup.com/raspberry-pi-webcam-server/>
- <https://www.linux.com/learn/tutorials/780055-how-to-operate-linux-spycams-with-motion>

History

#1 - 01/20/2016 10:00 AM - Daniel Curtis

- Status changed from New to In Progress

- % Done changed from 0 to 50

#2 - 01/30/2016 07:43 PM - Daniel Curtis

- Status changed from In Progress to Resolved

- % Done changed from 50 to 100

#3 - 02/05/2016 11:48 AM - Daniel Curtis

- Description updated

#4 - 02/05/2016 12:18 PM - Daniel Curtis

- Description updated

#5 - 02/20/2016 07:43 PM - Daniel Curtis

- Status changed from Resolved to Closed

#6 - 09/05/2016 04:15 PM - Daniel Curtis

- Description updated

#7 - 09/05/2016 04:16 PM - Daniel Curtis

- Description updated

#8 - 01/02/2018 03:10 PM - william carinio

- Updated Motion Config

```
daemon on
process_id_file /var/run/motion/motion.pid
setup_mode off
log_level 6
log_type all
videodevice /dev/video0
v4l2_palette 2
input -1
norm 0
frequency 0
power_line_frequency -1
rotate 0
flip_axis none
width 1280
height 720
framerate 100
minimum_frame_time 0
netcam_keepalive off
netcam_tolerant_check off
rtsp_uses_tcp on
auto_brightness off
brightness 0
ffmpeg_bps 400000
saturation 0
hue 0
roundrobin_frames 1
roundrobin_skip 1
switchfilter off
threshold 1500
threshold_tune off
noise_level 32
noise_tune on
despeckle_filter EedD1
smart_mask_speed 0
lightswitch 0
minimum_motion_frames 1
pre_capture 0
post_capture 0
event_gap 60
max_movie_time 0
emulate_motion off
output_pictures off
output_debug_pictures off
quality 75
picture_type jpeg
ffmpeg_output_movies off
ffmpeg_output_debug_movies off
ffmpeg_bps 400000
ffmpeg_variable_bitrate 0
ffmpeg_video_codec mkv
ffmpeg_duplicate_frames true
timelapse_interval 0
timelapse_mode daily
timelapse_fps 30
```

```
timelapse_codec mpg
use_extpipe off
snapshot_interval 0
locate_motion_mode off
locate_motion_style box
text_right %Y-%m-%d\n%T-%q
text_changes off
text_event %Y%m%d%H%M%S
text_double off
ipv6_enabled off
stream_port 8081
stream_quality 50
stream_motion off
stream_maxrate 30
stream_localhost off
stream_limit 0
stream_auth_method 0
webcontrol_port 8080
webcontrol_localhost off
webcontrol_html_output on
webcontrol_parms 0
track_type 0
track_auto off
track_iomojo_id 0
track_step_angle_x 10
track_step_angle_y 10
track_move_wait 10
track_speed 255
track_stepsize 40
quiet on
```

#9 - 01/09/2018 03:38 PM - Daniel Curtis

- *Description updated*