

Common API Elements

Programming a V4L2 device consists of these steps:

- Opening the device
- Changing device properties, selecting a video and audio input, video standard, picture brightness a. o.
- Negotiating a data format
- Negotiating an input/output method
- The actual input/output loop
- Closing the device

In practice most steps are optional and can be executed out of order. It depends on the V4L2 device type, you can read about the details in [ref`devices`](#). In this chapter we will discuss the basic concepts applicable to all devices.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\[linux-master] [Documentation] [userspace-api] [media] [v4l]common.rst, line 23); [backlink](#)

Unknown interpreted text role "ref".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\[linux-master] [Documentation] [userspace-api] [media] [v4l]common.rst, line 29)

Unknown directive type "toctree".

```
.. toctree::
    :maxdepth: 1

    open
    querycap
    app-pri
    video
    audio
    tuner
    standard
    dv-timings
    control
    extended-controls
    ext-ctrls-camera
    ext-ctrls-flash
    ext-ctrls-image-source
    ext-ctrls-image-process
    ext-ctrls-codec
    ext-ctrls-codec-stateless
    ext-ctrls-jpeg
    ext-ctrls-dv
    ext-ctrls-rf-tuner
    ext-ctrls-fm-tx
    ext-ctrls-fm-rx
    ext-ctrls-detect
    ext-ctrls-colorimetry
    fourcc
    format
    planar-apis
    selection-api
    crop
    streaming-par
```