Compressed Formats

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\[linux-master][Documentation][userspace-api][media][v4l]pixfmt-compressed.rst, line 14)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{5.8cm}|p{1.2cm}|p{10.3cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\[linux-master][Documentation][userspace-api][media][v4l]pixfmt-compressed.rst, line 16)

Unknown directive type "cssclass".

```
.. cssclass:: longtable
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\[linux-master][Documentation][userspace-api][media][v4l]pixfmt-compressed.rst, line 18)

Unknown directive type "flat-table".

```
.. flat-table:: Compressed Image Formats
    :header-rows:  1
    :stub-columns: 0
    :widths:       3 1 4

    * - Identifier
      - Code
      - Details
    * .. _V4L2-PIX-FMT-JPEG:

      - ``V4L2_PIX_FMT_JPEG``
      - 'JPEG'
      - TBD. See also :ref:`VIDIOC_G_JPEGCOMP <VIDIOC_G_JPEGCOMP>`,
        :ref:`VIDIOC_S_JPEGCOMP <VIDIOC_G_JPEGCOMP>`.
    * .. _V4L2-PIX-FMT-MPEG:

      - ``V4L2_PIX_FMT_MPEG``
      - 'MPEG'
      - MPEG multiplexed stream. The actual format is determined by
        extended control ``V4L2_CID_MPEG_STREAM_TYPE``, see
        :ref:`mpeg-control-id`.
    * .. _V4L2-PIX-FMT-H264:

      - ``V4L2_PIX_FMT_H264``
      - 'H264'
      - H264 Access Unit.
        The decoder expects one Access Unit per buffer.
        The encoder generates one Access Unit per buffer.
        If :ref:`VIDIOC_ENUM_FMT` reports ``V4L2_FMT_FLAG_CONTINUOUS_BYTESTREAM``
        then the decoder has no requirements since it can parse all the
        information from the raw bytestream.
    * .. _V4L2-PIX-FMT-H264-NO-SC:

      - ``V4L2_PIX_FMT_H264_NO_SC``
      - 'AVC1'
      - H264 video elementary stream without start codes.
    * .. _V4L2-PIX-FMT-H264-MVC:

      - ``V4L2_PIX_FMT_H264_MVC``
      - 'M264'
      - H264 MVC video elementary stream.
    * .. _V4L2-PIX-FMT-H264-SLICE:

      - ``V4L2_PIX_FMT_H264_SLICE``
      - 'S264'
      - H264 parsed slice data, including slice headers, either with or
        without the start code, as extracted from the H264 bitstream.
        This format is adapted for stateless video decoders that implement an
        H264 pipeline with the :ref:`stateless_decoder`.
```

```
    This pixelformat has two modifiers that must be set at least once
    through the ``V4L2_CID_STATELESS_H264_DECODE_MODE``
    and ``V4L2_CID_STATELESS_H264_START_CODE`` controls.
    In addition, metadata associated with the frame to decode are
    required to be passed through the ``V4L2_CID_STATELESS_H264_SPS``,
    ``V4L2_CID_STATELESS_H264_PPS``,
    ``V4L2_CID_STATELESS_H264_SCALING_MATRIX``,
    ``V4L2_CID_STATELESS_H264_SLICE_PARAMS`` and
    ``V4L2_CID_STATELESS_H264_DECODE_PARAMS`` controls.  See the
    :ref:`associated Codec Control IDs <v4l2-codec-stateless-h264>`.
    Exactly one output and one capture buffer must be provided for use
    with this pixel format. The output buffer must contain the
    appropriate number of macroblocks to decode a full
    corresponding frame to the matching capture buffer.

    The syntax for this format is documented in :ref:`h264`, section
    7.3.2.8 "Slice layer without partitioning RBSP syntax" and the following
    sections.

* .. _V4L2-PIX-FMT-H263:

  - ``V4L2_PIX_FMT_H263``
  - 'H263'
  - H263 video elementary stream.
* .. _V4L2-PIX-FMT-MPEG1:

  - ``V4L2_PIX_FMT_MPEG1``
  - 'MPG1'
  - MPEG1 Picture. Each buffer starts with a Picture header, followed
    by other headers as needed and ending with the Picture data.
    If :ref:`VIDIOC_ENUM_FMT` reports ``V4L2_FMT_FLAG_CONTINUOUS_BYTESTREAM``
    then the decoder has no requirements since it can parse all the
    information from the raw bytestream.
* .. _V4L2-PIX-FMT-MPEG2:

  - ``V4L2_PIX_FMT_MPEG2``
  - 'MPG2'
  - MPEG2 Picture. Each buffer starts with a Picture header, followed
    by other headers as needed and ending with the Picture data.
    If :ref:`VIDIOC_ENUM_FMT` reports ``V4L2_FMT_FLAG_CONTINUOUS_BYTESTREAM``
    then the decoder has no requirements since it can parse all the
    information from the raw bytestream.
* .. _V4L2-PIX-FMT-MPEG2-SLICE:

  - ``V4L2_PIX_FMT_MPEG2_SLICE``
  - 'MG2S'
  - MPEG-2 parsed slice data, as extracted from the MPEG-2 bitstream.
    This format is adapted for stateless video decoders that implement a
    MPEG-2 pipeline with the :ref:`stateless_decoder`.
    Metadata associated with the frame to decode is required to be passed
    through the ``V4L2_CID_STATELESS_MPEG2_SEQUENCE`` and
    ``V4L2_CID_STATELESS_MPEG2_PICTURE`` controls.
    Quantisation matrices can optionally be specified through the
    ``V4L2_CID_STATELESS_MPEG2_QUANTISATION`` control.
    See the :ref:`associated Codec Control IDs <v4l2-codec-stateless-mpeg2>`.
    Exactly one output and one capture buffer must be provided for use with
    this pixel format. The output buffer must contain the appropriate number
    of macroblocks to decode a full corresponding frame to the matching
    capture buffer.
* .. _V4L2-PIX-FMT-MPEG4:

  - ``V4L2_PIX_FMT_MPEG4``
  - 'MPG4'
  - MPEG4 video elementary stream.
* .. _V4L2-PIX-FMT-XVID:

  - ``V4L2_PIX_FMT_XVID``
  - 'XVID'
  - Xvid video elementary stream.
* .. _V4L2-PIX-FMT-VC1-ANNEX-G:

  - ``V4L2_PIX_FMT_VC1_ANNEX_G``
  - 'VC1G'
  - VC1, SMPTE 421M Annex G compliant stream.
* .. _V4L2-PIX-FMT-VC1-ANNEX-L:

  - ``V4L2_PIX_FMT_VC1_ANNEX_L``
  - 'VC1L'
  - VC1, SMPTE 421M Annex L compliant stream.
* .. _V4L2-PIX-FMT-VP8:
```

  - ``V4L2_PIX_FMT_VP8``
  - 'VP80'
  - VP8 compressed video frame. The encoder generates one
    compressed frame per buffer, and the decoder requires one
    compressed frame per buffer.
* .. _V4L2-PIX-FMT-VP8-FRAME:

  - ``V4L2_PIX_FMT_VP8_FRAME``
  - 'VP8F'
  - VP8 parsed frame, including the frame header, as extracted from the container.
    This format is adapted for stateless video decoders that implement an
    VP8 pipeline with the :ref:`stateless_decoder`.
    Metadata associated with the frame to decode is required to be passed
    through the ``V4L2_CID_STATELESS_VP8_FRAME`` control.
    See the :ref:`associated Codec Control IDs <v4l2-codec-stateless-vp8>`.
    Exactly one output and one capture buffer must be provided for use with
    this pixel format. The output buffer must contain the appropriate number
    of macroblocks to decode a full corresponding frame to the matching
    capture buffer.

* .. _V4L2-PIX-FMT-VP9:

  - ``V4L2_PIX_FMT_VP9``
  - 'VP90'
  - VP9 compressed video frame. The encoder generates one
    compressed frame per buffer, and the decoder requires one
    compressed frame per buffer.
* .. _V4L2-PIX-FMT-VP9-FRAME:

  - ``V4L2_PIX_FMT_VP9_FRAME``
  - 'VP9F'
  - VP9 parsed frame, including the frame header, as extracted from the container.
    This format is adapted for stateless video decoders that implement a
    VP9 pipeline with the :ref:`stateless_decoder`.
    Metadata associated with the frame to decode is required to be passed
    through the ``V4L2_CID_STATELESS_VP9_FRAME`` and
    the ``V4L2_CID_STATELESS_VP9_COMPRESSED_HDR`` controls.
    See the :ref:`associated Codec Control IDs <v4l2-codec-stateless-vp9>`.
    Exactly one output and one capture buffer must be provided for use with
    this pixel format. The output buffer must contain the appropriate number
    of macroblocks to decode a full corresponding frame to the matching
    capture buffer.
* .. _V4L2-PIX-FMT-HEVC:

  - ``V4L2_PIX_FMT_HEVC``
  - 'HEVC'
  - HEVC/H.265 Access Unit.
    The decoder expects one Access Unit per buffer.
    The encoder generates one Access Unit per buffer.
    If :ref:`VIDIOC_ENUM_FMT` reports ``V4L2_FMT_FLAG_CONTINUOUS_BYTESTREAM``
    then the decoder has no requirements since it can parse all the
    information from the raw bytestream.
* .. _V4L2-PIX-FMT-HEVC-SLICE:

  - ``V4L2_PIX_FMT_HEVC_SLICE``
  - 'S265'
  - HEVC parsed slice data, as extracted from the HEVC bitstream.
    This format is adapted for stateless video decoders that implement a
    HEVC pipeline (using the :ref:`mem2mem` and :ref:`media-request-api`).
    This pixelformat has two modifiers that must be set at least once
    through the ``V4L2_CID_MPEG_VIDEO_HEVC_DECODE_MODE``
    and ``V4L2_CID_MPEG_VIDEO_HEVC_START_CODE`` controls.
    Metadata associated with the frame to decode is required to be passed
    through the following controls:
    ``V4L2_CID_MPEG_VIDEO_HEVC_SPS``,
    ``V4L2_CID_MPEG_VIDEO_HEVC_PPS``, and
    ``V4L2_CID_MPEG_VIDEO_HEVC_SLICE_PARAMS``.
    See the :ref:`associated Codec Control IDs <v4l2-mpeg-hevc>`.
    Buffers associated with this pixel format must contain the appropriate
    number of macroblocks to decode a full corresponding frame.

    .. note::

       This format is not yet part of the public kernel API and it
       is expected to change.
* .. _V4L2-PIX-FMT-FWHT:

  - ``V4L2_PIX_FMT_FWHT``
  - 'FWHT'
  - Video elementary stream using a codec based on the Fast Walsh Hadamard
    Transform. This codec is implemented by the vicodec ('Virtual Codec')

```
    driver. See the codec-fwht.h header for more details.
    :ref:`VIDIOC_ENUM_FMT` reports ``V4L2_FMT_FLAG_CONTINUOUS_BYTESTREAM``
    since the decoder can parse all the information from the raw bytestream.
* .. _V4L2-PIX-FMT-FWHT-STATELESS:

  - ``V4L2_PIX_FMT_FWHT_STATELESS``
  - 'SFWH'
  - Same format as V4L2_PIX_FMT_FWHT but requires stateless codec implementation.
    Metadata associated with the frame to decode is required to be passed
    through the ``V4L2_CID_STATELESS_FWHT_PARAMS`` control.
    See the :ref:`associated Codec Control ID <codec-stateless-fwht>`.
```