Stateless Codec Control Reference

The Stateless Codec control class is intended to support stateless decoder and encoders (i.e. hardware accelerators).

These drivers are typically supported by the :ref:`stateless_decoder`, and deal with parsed pixel formats such as V4L2_PIX_FMT_H264_SLICE.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 12); *backlink*

Unknown interpreted text role "ref".

Stateless Codec Control ID

`V4L2_CID_CODEC_STATELESS_CLASS (class)`
: The Stateless Codec class descriptor.

`V4L2_CID_STATELESS_H264_SPS (struct)`
: Specifies the sequence parameter set (as extracted from the bitstream) for the associated H264 slice data. This includes the necessary parameters for configuring a stateless hardware decoding pipeline for H264. The bitstream parameters are defined according to :ref:`h264`, section 7.4.2.1.1 "Sequence Parameter Set Data Semantics". For further documentation, refer to the above specification, unless there is an explicit comment stating otherwise.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 26); *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)ext-ctrls-codec-stateless.rst, line 35)

Unknown directive type "c:type".

```
.. c:type:: v4l2_ctrl_h264_sps
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 41)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{1.2cm}|p{8.6cm}|p{7.5cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 43)

Unknown directive type "flat-table".

```
.. flat-table:: struct v4l2_ctrl_h264_sps
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - __u8
      - ``profile_idc``
      -
    * - __u8
      - ``constraint_set_flags``
      - See :ref:`Sequence Parameter Set Constraints Set Flags <h264_sps_constraints_set_flags>`
    * - __u8
      - ``level_idc``
      -
```

```
      * - __u8
        - ``seq_parameter_set_id``
        -
      * - __u8
        - ``chroma_format_idc``
        -
      * - __u8
        - ``bit_depth_luma_minus8``
        -
      * - __u8
        - ``bit_depth_chroma_minus8``
        -
      * - __u8
        - ``log2_max_frame_num_minus4``
        -
      * - __u8
        - ``pic_order_cnt_type``
        -
      * - __u8
        - ``log2_max_pic_order_cnt_lsb_minus4``
        -
      * - __u8
        - ``max_num_ref_frames``
        -
      * - __u8
        - ``num_ref_frames_in_pic_order_cnt_cycle``
        -
      * - __s32
        - ``offset_for_ref_frame[255]``
        -
      * - __s32
        - ``offset_for_non_ref_pic``
        -
      * - __s32
        - ``offset_for_top_to_bottom_field``
        -
      * - __u16
        - ``pic_width_in_mbs_minus1``
        -
      * - __u16
        - ``pic_height_in_map_units_minus1``
        -
      * - __u32
        - ``flags``
        - See :ref:`Sequence Parameter Set Flags <h264_sps_flags>`
```

Sequence Parameter Set Constraints Set Flags

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 111)

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)ext-ctrls-codec-stateless.rst, line 113)

Unknown directive type "flat-table".

```
.. flat-table::
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - ``V4L2_H264_SPS_CONSTRAINT_SET0_FLAG``
      - 0x00000001
      -
    * - ``V4L2_H264_SPS_CONSTRAINT_SET1_FLAG``
      - 0x00000002
      -
    * - ``V4L2_H264_SPS_CONSTRAINT_SET2_FLAG``
      - 0x00000004
      -
    * - ``V4L2_H264_SPS_CONSTRAINT_SET3_FLAG``
```

```
      - 0x00000008
      -
    * - ``V4L2_H264_SPS_CONSTRAINT_SET4_FLAG``
      - 0x00000010
      -
    * - ``V4L2_H264_SPS_CONSTRAINT_SET5_FLAG``
      - 0x00000020
      -
```

Sequence Parameter Set Flags

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 141)

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)ext-ctrls-codec-stateless.rst, line 143)

Unknown directive type "flat-table".

```
.. flat-table::
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - ``V4L2_H264_SPS_FLAG_SEPARATE_COLOUR_PLANE``
      - 0x00000001
      -
    * - ``V4L2_H264_SPS_FLAG_QPPRIME_Y_ZERO_TRANSFORM_BYPASS``
      - 0x00000002
      -
    * - ``V4L2_H264_SPS_FLAG_DELTA_PIC_ORDER_ALWAYS_ZERO``
      - 0x00000004
      -
    * - ``V4L2_H264_SPS_FLAG_GAPS_IN_FRAME_NUM_VALUE_ALLOWED``
      - 0x00000008
      -
    * - ``V4L2_H264_SPS_FLAG_FRAME_MBS_ONLY``
      - 0x00000010
      -
    * - ``V4L2_H264_SPS_FLAG_MB_ADAPTIVE_FRAME_FIELD``
      - 0x00000020
      -
    * - ``V4L2_H264_SPS_FLAG_DIRECT_8X8_INFERENCE``
      - 0x00000040
      -
```

V4L2_CID_STATELESS_H264_PPS (struct)

Specifies the picture parameter set (as extracted from the bitstream) for the associated H264 slice data. This includes the necessary parameters for configuring a stateless hardware decoding pipeline for H264. The bitstream parameters are defined according to :ref:`h264`, section 7.4.2.2 "Picture Parameter Set RBSP Semantics". For further documentation, refer to the above specification, unless there is an explicit comment stating otherwise.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 171); *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)ext-ctrls-codec-stateless.rst, line 180)

Unknown directive type "c:type".

```
.. c:type:: v4l2_ctrl_h264_pps
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 186)

Unknown directive type "flat-table".

```
.. flat-table:: struct v4l2_ctrl_h264_pps
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - __u8
      - ``pic_parameter_set_id``
      -
    * - __u8
      - ``seq_parameter_set_id``
      -
    * - __u8
      - ``num_slice_groups_minus1``
      -
    * - __u8
      - ``num_ref_idx_l0_default_active_minus1``
      -
    * - __u8
      - ``num_ref_idx_l1_default_active_minus1``
      -
    * - __u8
      - ``weighted_bipred_idc``
      -
    * - __s8
      - ``pic_init_qp_minus26``
      -
    * - __s8
      - ``pic_init_qs_minus26``
      -
    * - __s8
      - ``chroma_qp_index_offset``
      -
    * - __s8
      - ``second_chroma_qp_index_offset``
      -
    * - __u16
      - ``flags``
      - See :ref:`Picture Parameter Set Flags <h264_pps_flags>`
```

Picture Parameter Set Flags

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 239)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{9.8cm}|p{1.0cm}|p{6.5cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 241)

Unknown directive type "flat-table".

```
.. flat-table::
    :header-rows:  0
    :stub-columns: 0
    :widths:       10 1 4

    * - ``V4L2_H264_PPS_FLAG_ENTROPY_CODING_MODE``
      - 0x0001
      -
    * - ``V4L2_H264_PPS_FLAG_BOTTOM_FIELD_PIC_ORDER_IN_FRAME_PRESENT``
      - 0x0002
      -
```

```
      * - ``V4L2_H264_PPS_FLAG_WEIGHTED_PRED``
        - 0x0004
        -
      * - ``V4L2_H264_PPS_FLAG_DEBLOCKING_FILTER_CONTROL_PRESENT``
        - 0x0008
        -
      * - ``V4L2_H264_PPS_FLAG_CONSTRAINED_INTRA_PRED``
        - 0x0010
        -
      * - ``V4L2_H264_PPS_FLAG_REDUNDANT_PIC_CNT_PRESENT``
        - 0x0020
        -
      * - ``V4L2_H264_PPS_FLAG_TRANSFORM_8X8_MODE``
        - 0x0040
        -
      * - ``V4L2_H264_PPS_FLAG_SCALING_MATRIX_PRESENT``
        - 0x0080
        - ``V4L2_CID_STATELESS_H264_SCALING_MATRIX``
          must be used for this picture.
```

`V4L2_CID_STATELESS_H264_SCALING_MATRIX (struct)`

Specifies the scaling matrix (as extracted from the bitstream) for the associated H264 slice data. The bitstream parameters are defined according to :ref:`h264`, section 7.4.2.1.1.1 "Scaling List Semantics". For further documentation, refer to the above specification, unless there is an explicit comment stating otherwise.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 277); *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)ext-ctrls-codec-stateless.rst, line 284)

Unknown directive type "c:type".

```
.. c:type:: v4l2_ctrl_h264_scaling_matrix
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 290)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{0.6cm}|p{4.8cm}|p{11.9cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 292)

Unknown directive type "flat-table".

```
.. flat-table:: struct v4l2_ctrl_h264_scaling_matrix
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - __u8
      - ``scaling_list_4x4[6][16]``
      - Scaling matrix after applying the inverse scanning process.
        Expected list order is Intra Y, Intra Cb, Intra Cr, Inter Y,
        Inter Cb, Inter Cr. The values on each scaling list are
        expected in raster scan order.
    * - __u8
      - ``scaling_list_8x8[6][64]``
      - Scaling matrix after applying the inverse scanning process.
        Expected list order is Intra Y, Inter Y, Intra Cb, Inter Cb,
        Intra Cr, Inter Cr. The values on each scaling list are
        expected in raster scan order.
```

V4L2_CID_STATELESS_H264_SLICE_PARAMS (struct)

Specifies the slice parameters (as extracted from the bitstream) for the associated H264 slice data. This includes the necessary parameters for configuring a stateless hardware decoding pipeline for H264. The bitstream parameters are defined according to :ref:`h264`, section 7.4.3 "Slice Header Semantics". For further documentation, refer to the above specification, unless there is an explicit comment stating otherwise.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 311); *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)ext-ctrls-codec-stateless.rst, line 319)

Unknown directive type "c:type".

```
.. c:type:: v4l2_ctrl_h264_slice_params
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 325)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{4.0cm}|p{5.9cm}|p{7.4cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 327)

Unknown directive type "flat-table".

```
.. flat-table:: struct v4l2_ctrl_h264_slice_params
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - __u32
      - ``header_bit_size``
      - Offset in bits to slice_data() from the beginning of this slice.
    * - __u32
      - ``first_mb_in_slice``
      -
    * - __u8
      - ``slice_type``
      -
    * - __u8
      - ``colour_plane_id``
      -
    * - __u8
      - ``redundant_pic_cnt``
      -
    * - __u8
      - ``cabac_init_idc``
      -
    * - __s8
      - ``slice_qp_delta``
      -
    * - __s8
      - ``slice_qs_delta``
      -
    * - __u8
      - ``disable_deblocking_filter_idc``
      -
    * - __s8
      - ``slice_alpha_c0_offset_div2``
      -
    * - __s8
```

```
      - ``slice_beta_offset_div2``
      -
    * - __u8
      - ``num_ref_idx_l0_active_minus1``
      - If num_ref_idx_active_override_flag is not set, this field must be
        set to the value of num_ref_idx_l0_default_active_minus1
    * - __u8
      - ``num_ref_idx_l1_active_minus1``
      - If num_ref_idx_active_override_flag is not set, this field must be
        set to the value of num_ref_idx_l1_default_active_minus1
    * - __u8
      - ``reserved``
      - Applications and drivers must set this to zero.
    * - struct :c:type:`v4l2_h264_reference`
      - ``ref_pic_list0[32]``
      - Reference picture list after applying the per-slice modifications
    * - struct :c:type:`v4l2_h264_reference`
      - ``ref_pic_list1[32]``
      - Reference picture list after applying the per-slice modifications
    * - __u32
      - ``flags``
      - See :ref:`Slice Parameter Flags <h264_slice_flags>`
```

Slice Parameter Set Flags

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 394)

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)ext-ctrls-codec-stateless.rst, line 396)

Unknown directive type "flat-table".

```
.. flat-table::
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - ``V4L2_H264_SLICE_FLAG_DIRECT_SPATIAL_MV_PRED``
      - 0x00000001
      -
    * - ``V4L2_H264_SLICE_FLAG_SP_FOR_SWITCH``
      - 0x00000002
      -
```

V4L2_CID_STATELESS_H264_PRED_WEIGHTS (struct)

Prediction weight table defined according to :ref:`h264`, section 7.4.3.2 "Prediction Weight Table Semantics". The prediction weight table must be passed by applications under the conditions explained in section 7.3.3 "Slice header syntax".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 409); *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)ext-ctrls-codec-stateless.rst, line 415)

Unknown directive type "c:type".

```
.. c:type:: v4l2_ctrl_h264_pred_weights
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 421)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{4.9cm}|p{4.9cm}|p{7.5cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 423)

Unknown directive type "flat-table".

```
.. flat-table:: struct v4l2_ctrl_h264_pred_weights
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - __u16
      - ``luma_log2_weight_denom``
      -
    * - __u16
      - ``chroma_log2_weight_denom``
      -
    * - struct :c:type:`v4l2_h264_weight_factors`
      - ``weight_factors[2]``
      - The weight factors at index 0 are the weight factors for the reference
        list 0, the one at index 1 for the reference list 1.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 443)

Unknown directive type "c:type".

```
.. c:type:: v4l2_h264_weight_factors
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 449)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{1.0cm}|p{4.5cm}|p{11.8cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 451)

Unknown directive type "flat-table".

```
.. flat-table:: struct v4l2_h264_weight_factors
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - __s16
      - ``luma_weight[32]``
      -
    * - __s16
      - ``luma_offset[32]``
      -
    * - __s16
      - ``chroma_weight[32][2]``
      -
    * - __s16
      - ``chroma_offset[32][2]``
      -
```

Picture Reference

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 475)

Unknown directive type "c:type".

```
.. c:type:: v4l2_h264_reference
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 477)

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)ext-ctrls-codec-stateless.rst, line 479)

Unknown directive type "flat-table".

```
.. flat-table:: struct v4l2_h264_reference
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - __u8
      - ``fields``
      - Specifies how the picture is referenced. See :ref:`Reference Fields <h264_ref_fields>`
    * - __u8
      - ``index``
      - Index into the :c:type:`v4l2_ctrl_h264_decode_params`.dpb array.
```

Reference Fields

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 499)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{5.4cm}|p{0.8cm}|p{11.1cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 501)

Unknown directive type "flat-table".

```
.. flat-table::
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - ``V4L2_H264_TOP_FIELD_REF``
      - 0x1
      - The top field in field pair is used for short-term reference.
    * - ``V4L2_H264_BOTTOM_FIELD_REF``
      - 0x2
      - The bottom field in field pair is used for short-term reference.
    * - ``V4L2_H264_FRAME_REF``
      - 0x3
      - The frame (or the top/bottom fields, if it's a field pair)
        is used for short-term reference.
```

V4L2_CID_STATELESS_H264_DECODE_PARAMS (struct)

Specifies the decode parameters (as extracted from the bitstream) for the associated H264 slice data. This includes the necessary parameters for configuring a stateless hardware decoding pipeline for H264. The bitstream parameters are defined according to :ref:`h264`. For further documentation, refer to the above specification, unless there is an explicit comment stating otherwise.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 522); *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)ext-ctrls-codec-stateless.rst, line 530)

Unknown directive type "c:type".

```
.. c:type:: v4l2_ctrl_h264_decode_params
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 536)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{4.0cm}|p{5.9cm}|p{7.4cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 538)

Unknown directive type "flat-table".

```
.. flat-table:: struct v4l2_ctrl_h264_decode_params
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - struct :c:type:`v4l2_h264_dpb_entry`
      - ``dpb[16]``
      -
    * - __u16
      - ``nal_ref_idc``
      - NAL reference ID value coming from the NAL Unit header
    * - __u16
      - ``frame_num``
      -
    * - __s32
      - ``top_field_order_cnt``
      - Picture Order Count for the coded top field
    * - __s32
      - ``bottom_field_order_cnt``
      - Picture Order Count for the coded bottom field
    * - __u16
      - ``idr_pic_id``
      -
    * - __u16
      - ``pic_order_cnt_lsb``
      -
    * - __s32
      - ``delta_pic_order_cnt_bottom``
      -
    * - __s32
      - ``delta_pic_order_cnt0``
      -
    * - __s32
      - ``delta_pic_order_cnt1``
      -
    * - __u32
      - ``dec_ref_pic_marking_bit_size``
      - Size in bits of the dec_ref_pic_marking() syntax element.
    * - __u32
```

```
      - ``pic_order_cnt_bit_size``
      - Combined size in bits of the picture order count related syntax
        elements: pic_order_cnt_lsb, delta_pic_order_cnt_bottom,
        delta_pic_order_cnt0, and delta_pic_order_cnt1.
    * - __u32
      - ``slice_group_change_cycle``
      -
    * - __u32
      - ``reserved``
      - Applications and drivers must set this to zero.
    * - __u32
      - ``flags``
      - See :ref:`Decode Parameters Flags <h264_decode_params_flags>`
```

Decode Parameters Flags

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 603)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{8.3cm}|p{2.1cm}|p{6.9cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 605)

Unknown directive type "flat-table".

```
.. flat-table::
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - ``V4L2_H264_DECODE_PARAM_FLAG_IDR_PIC``
      - 0x00000001
      - That picture is an IDR picture
    * - ``V4L2_H264_DECODE_PARAM_FLAG_FIELD_PIC``
      - 0x00000002
      -
    * - ``V4L2_H264_DECODE_PARAM_FLAG_BOTTOM_FIELD``
      - 0x00000004
      -
    * - ``V4L2_H264_DECODE_PARAM_FLAG_PFRAME``
      - 0x00000008
      -
    * - ``V4L2_H264_DECODE_PARAM_FLAG_BFRAME``
      - 0x00000010
      -
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 630)

Unknown directive type "c:type".

```
.. c:type:: v4l2_h264_dpb_entry
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 636)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{1.0cm}|p{4.9cm}|p{11.4cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-

api) (media) (v4l) ext-ctrls-codec-stateless.rst, line 638)

Unknown directive type "flat-table".

```
.. flat-table:: struct v4l2_h264_dpb_entry
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - __u64
      - ``reference_ts``
      - Timestamp of the V4L2 capture buffer to use as reference, used
        with B-coded and P-coded frames. The timestamp refers to the
        ``timestamp`` field in struct :c:type:`v4l2_buffer`. Use the
        :c:func:`v4l2_timeval_to_ns()` function to convert the struct
        :c:type:`timeval` in struct :c:type:`v4l2_buffer` to a __u64.
    * - __u32
      - ``pic_num``
      -
    * - __u16
      - ``frame_num``
      -
    * - __u8
      - ``fields``
      - Specifies how the DPB entry is referenced. See :ref:`Reference Fields <h264_ref_fields>`
    * - __u8
      - ``reserved[5]``
      - Applications and drivers must set this to zero.
    * - __s32
      - ``top_field_order_cnt``
      -
    * - __s32
      - ``bottom_field_order_cnt``
      -
    * - __u32
      - ``flags``
      - See :ref:`DPB Entry Flags <h264_dpb_flags>`
```

DPB Entries Flags

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master) (Documentation) (userspace-api) (media) (v4l) ext-ctrls-codec-stateless.rst, line 684)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{7.7cm}|p{2.1cm}|p{7.5cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master) (Documentation) (userspace-api) (media) (v4l) ext-ctrls-codec-stateless.rst, line 686)

Unknown directive type "flat-table".

```
.. flat-table::
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - ``V4L2_H264_DPB_ENTRY_FLAG_VALID``
      - 0x00000001
      - The DPB entry is valid (non-empty) and should be considered.
    * - ``V4L2_H264_DPB_ENTRY_FLAG_ACTIVE``
      - 0x00000002
      - The DPB entry is used for reference.
    * - ``V4L2_H264_DPB_ENTRY_FLAG_LONG_TERM``
      - 0x00000004
      - The DPB entry is used for long-term reference.
    * - ``V4L2_H264_DPB_ENTRY_FLAG_FIELD``
      - 0x00000008
      - The DPB entry is a single field or a complementary field pair.
```

V4L2_CID_STATELESS_H264_DECODE_MODE (enum)

Specifies the decoding mode to use. Currently exposes slice-based and frame-based decoding but new modes might be added later on. This control is used as a modifier for V4L2_PIX_FMT_H264_SLICE pixel format. Applications that

support V4L2_PIX_FMT_H264_SLICE are required to set this control in order to specify the decoding mode that is expected for the buffer. Drivers may expose a single or multiple decoding modes, depending on what they can support.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 718)

Unknown directive type "c:type".

```
.. c:type:: v4l2_stateless_h264_decode_mode
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 724)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{7.4cm}|p{0.3cm}|p{9.6cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 726)

Unknown directive type "flat-table".

```
.. flat-table::
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - ``V4L2_STATELESS_H264_DECODE_MODE_SLICE_BASED``
      - 0
      - Decoding is done at the slice granularity.
        The OUTPUT buffer must contain a single slice.
        When this mode is selected, the ``V4L2_CID_STATELESS_H264_SLICE_PARAMS``
        control shall be set. When multiple slices compose a frame,
        use of ``V4L2_BUF_CAP_SUPPORTS_M2M_HOLD_CAPTURE_BUF`` flag
        is required.
    * - ``V4L2_STATELESS_H264_DECODE_MODE_FRAME_BASED``
      - 1
      - Decoding is done at the frame granularity,
        The OUTPUT buffer must contain all slices needed to decode the
        frame. The OUTPUT buffer must also contain both fields.
        This mode will be supported by devices that
        parse the slice(s) header(s) in hardware. When this mode is
        selected, the ``V4L2_CID_STATELESS_H264_SLICE_PARAMS``
        control shall not be set.
```

`V4L2_CID_STATELESS_H264_START_CODE (enum)`

Specifies the H264 slice start code expected for each slice. This control is used as a modifier for V4L2_PIX_FMT_H264_SLICE pixel format. Applications that support V4L2_PIX_FMT_H264_SLICE are required to set this control in order to specify the start code that is expected for the buffer. Drivers may expose a single or multiple start codes, depending on what they can support.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 762)

Unknown directive type "c:type".

```
.. c:type:: v4l2_stateless_h264_start_code
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 768)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{7.9cm}|p{0.4cm}|p{9.0cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 770)

Unknown directive type "flat-table".

```
.. flat-table::
    :header-rows:  0
    :stub-columns: 0
    :widths:       4 1 4

    * - ``V4L2_STATELESS_H264_START_CODE_NONE``
      - 0
      - Selecting this value specifies that H264 slices are passed
        to the driver without any start code. The bitstream data should be
        according to :ref:`h264` 7.3.1 NAL unit syntax, hence contains
        emulation prevention bytes when required.
    * - ``V4L2_STATELESS_H264_START_CODE_ANNEX_B``
      - 1
      - Selecting this value specifies that H264 slices are expected
        to be prefixed by Annex B start codes. According to :ref:`h264`
        valid start codes can be 3-bytes 0x000001 or 4-bytes 0x00000001.
```

`V4L2_CID_STATELESS_FWHT_PARAMS (struct)`

Specifies the FWHT (Fast Walsh Hadamard Transform) parameters (as extracted from the bitstream) for the associated FWHT data. This includes the necessary parameters for configuring a stateless hardware decoding pipeline for FWHT. This codec is specific to the vicodec test driver.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 799)

Unknown directive type "c:type".

```
.. c:type:: v4l2_ctrl_fwht_params
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 805)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{1.4cm}|p{3.9cm}|p{12.0cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 807)

Unknown directive type "flat-table".

```
.. flat-table:: struct v4l2_ctrl_fwht_params
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - __u64
      - ``backward_ref_ts``
      - Timestamp of the V4L2 capture buffer to use as backward reference, used
        with P-coded frames. The timestamp refers to the
        ``timestamp`` field in struct :c:type:`v4l2_buffer`. Use the
        :c:func:`v4l2_timeval_to_ns()` function to convert the struct
        :c:type:`timeval` in struct :c:type:`v4l2_buffer` to a __u64.
    * - __u32
      - ``version``
      - The version of the codec. Set to ``V4L2_FWHT_VERSION``.
    * - __u32
      - ``width``
      - The width of the frame.
    * - __u32
      - ``height``
      - The height of the frame.
```

```
    * - __u32
      - ``flags``
      - The flags of the frame, see :ref:`fwht-flags`.
    * - __u32
      - ``colorspace``
      - The colorspace of the frame, from enum :c:type:`v4l2_colorspace`.
    * - __u32
      - ``xfer_func``
      - The transfer function, from enum :c:type:`v4l2_xfer_func`.
    * - __u32
      - ``ycbcr_enc``
      - The Y'CbCr encoding, from enum :c:type:`v4l2_ycbcr_encoding`.
    * - __u32
      - ``quantization``
      - The quantization range, from enum :c:type:`v4l2_quantization`.
```

FWHT Flags

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 857)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{7.0cm}|p{2.3cm}|p{8.0cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 859)

Unknown directive type "flat-table".

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

    * - ``V4L2_FWHT_FL_IS_INTERLACED``
      - 0x00000001
      - Set if this is an interlaced format.
    * - ``V4L2_FWHT_FL_IS_BOTTOM_FIRST``
      - 0x00000002
      - Set if this is a bottom-first (NTSC) interlaced format.
    * - ``V4L2_FWHT_FL_IS_ALTERNATE``
      - 0x00000004
      - Set if each 'frame' contains just one field.
    * - ``V4L2_FWHT_FL_IS_BOTTOM_FIELD``
      - 0x00000008
      - If V4L2_FWHT_FL_IS_ALTERNATE was set, then this is set if this 'frame' is the
        bottom field, else it is the top field.
    * - ``V4L2_FWHT_FL_LUMA_IS_UNCOMPRESSED``
      - 0x00000010
      - Set if the Y' (luma) plane is uncompressed.
    * - ``V4L2_FWHT_FL_CB_IS_UNCOMPRESSED``
      - 0x00000020
      - Set if the Cb plane is uncompressed.
    * - ``V4L2_FWHT_FL_CR_IS_UNCOMPRESSED``
      - 0x00000040
      - Set if the Cr plane is uncompressed.
    * - ``V4L2_FWHT_FL_CHROMA_FULL_HEIGHT``
      - 0x00000080
      - Set if the chroma plane has the same height as the luma plane,
        else the chroma plane is half the height of the luma plane.
    * - ``V4L2_FWHT_FL_CHROMA_FULL_WIDTH``
      - 0x00000100
      - Set if the chroma plane has the same width as the luma plane,
        else the chroma plane is half the width of the luma plane.
    * - ``V4L2_FWHT_FL_ALPHA_IS_UNCOMPRESSED``
      - 0x00000200
      - Set if the alpha plane is uncompressed.
    * - ``V4L2_FWHT_FL_I_FRAME``
      - 0x00000400
      - Set if this is an I-frame.
    * - ``V4L2_FWHT_FL_COMPONENTS_NUM_MSK``
      - 0x00070000
      - The number of color components minus one.
```

```
      * - ``V4L2_FWHT_FL_PIXENC_MSK``
        - 0x00180000
        - The mask for the pixel encoding.
      * - ``V4L2_FWHT_FL_PIXENC_YUV``
        - 0x00080000
        - Set if the pixel encoding is YUV.
      * - ``V4L2_FWHT_FL_PIXENC_RGB``
        - 0x00100000
        - Set if the pixel encoding is RGB.
      * - ``V4L2_FWHT_FL_PIXENC_HSV``
        - 0x00180000
        - Set if the pixel encoding is HSV.
```

V4L2_CID_STATELESS_VP8_FRAME (struct)

Specifies the frame parameters for the associated VP8 parsed frame data. This includes the necessary parameters for configuring a stateless hardware decoding pipeline for VP8. The bitstream parameters are defined according to :ref:`vp8`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 923); *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)ext-ctrls-codec-stateless.rst, line 928)

Unknown directive type "c:type".

```
.. c:type:: v4l2_ctrl_vp8_frame
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 934)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{7.0cm}|p{4.6cm}|p{5.7cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 936)

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)ext-ctrls-codec-stateless.rst, line 938)

Unknown directive type "flat-table".

```
.. flat-table:: struct v4l2_ctrl_vp8_frame
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - struct :c:type:`v4l2_vp8_segment`
      - ``segment``
      - Structure with segment-based adjustments metadata.
    * - struct :c:type:`v4l2_vp8_loop_filter`
      - ``lf``
      - Structure with loop filter level adjustments metadata.
    * - struct :c:type:`v4l2_vp8_quantization`
      - ``quant``
      - Structure with VP8 dequantization indices metadata.
    * - struct :c:type:`v4l2_vp8_entropy`
```

```
  - ``entropy``
  - Structure with VP8 entropy coder probabilities metadata.
* - struct :c:type:`v4l2_vp8_entropy_coder_state`
  - ``coder_state``
  - Structure with VP8 entropy coder state.
* - __u16
  - ``width``
  - The width of the frame. Must be set for all frames.
* - __u16
  - ``height``
  - The height of the frame. Must be set for all frames.
* - __u8
  - ``horizontal_scale``
  - Horizontal scaling factor.
* - __u8
  - ``vertical_scaling factor``
  - Vertical scale.
* - __u8
  - ``version``
  - Bitstream version.
* - __u8
  - ``prob_skip_false``
  - Indicates the probability that the macroblock is not skipped.
* - __u8
  - ``prob_intra``
  - Indicates the probability that a macroblock is intra-predicted.
* - __u8
  - ``prob_last``
  - Indicates the probability that the last reference frame is used
    for inter-prediction
* - __u8
  - ``prob_gf``
  - Indicates the probability that the golden reference frame is used
    for inter-prediction
* - __u8
  - ``num_dct_parts``
  - Number of DCT coefficients partitions. Must be one of: 1, 2, 4, or 8.
* - __u32
  - ``first_part_size``
  - Size of the first partition, i.e. the control partition.
* - __u32
  - ``first_part_header_bits``
  - Size in bits of the first partition header portion.
* - __u32
  - ``dct_part_sizes[8]``
  - DCT coefficients sizes.
* - __u64
  - ``last_frame_ts``
  - Timestamp for the V4L2 capture buffer to use as last reference frame, used
    with inter-coded frames. The timestamp refers to the ``timestamp`` field in
    struct :c:type:`v4l2_buffer`. Use the :c:func:`v4l2_timeval_to_ns()`
    function to convert the struct :c:type:`timeval` in struct
    :c:type:`v4l2_buffer` to a __u64.
* - __u64
  - ``golden_frame_ts``
  - Timestamp for the V4L2 capture buffer to use as last reference frame, used
    with inter-coded frames. The timestamp refers to the ``timestamp`` field in
    struct :c:type:`v4l2_buffer`. Use the :c:func:`v4l2_timeval_to_ns()`
    function to convert the struct :c:type:`timeval` in struct
    :c:type:`v4l2_buffer` to a __u64.
* - __u64
  - ``alt_frame_ts``
  - Timestamp for the V4L2 capture buffer to use as alternate reference frame, used
    with inter-coded frames. The timestamp refers to the ``timestamp`` field in
    struct :c:type:`v4l2_buffer`. Use the :c:func:`v4l2_timeval_to_ns()`
    function to convert the struct :c:type:`timeval` in struct
    :c:type:`v4l2_buffer` to a __u64.
* - __u64
  - ``flags``
  - See :ref:`Frame Flags <vp8_frame_flags>`
```

Frame Flags

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1032)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{9.8cm}|p{0.8cm}|p{6.7cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1034)

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)ext-ctrls-codec-stateless.rst, line 1036)

Unknown directive type "flat-table".

```
.. flat-table::
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - ``V4L2_VP8_FRAME_FLAG_KEY_FRAME``
      - 0x01
      - Indicates if the frame is a key frame.
    * - ``V4L2_VP8_FRAME_FLAG_EXPERIMENTAL``
      - 0x02
      - Experimental bitstream.
    * - ``V4L2_VP8_FRAME_FLAG_SHOW_FRAME``
      - 0x04
      - Show frame flag, indicates if the frame is for display.
    * - ``V4L2_VP8_FRAME_FLAG_MB_NO_SKIP_COEFF``
      - 0x08
      - Enable/disable skipping of macroblocks with no non-zero coefficients.
    * - ``V4L2_VP8_FRAME_FLAG_SIGN_BIAS_GOLDEN``
      - 0x10
      - Sign of motion vectors when the golden frame is referenced.
    * - ``V4L2_VP8_FRAME_FLAG_SIGN_BIAS_ALT``
      - 0x20
      - Sign of motion vectors when the alt frame is referenced.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1060)

Unknown directive type "c:type".

```
.. c:type:: v4l2_vp8_entropy_coder_state
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1062)

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)ext-ctrls-codec-stateless.rst, line 1064)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{1.0cm}|p{2.0cm}|p{14.3cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1066)

Unknown directive type "flat-table".

```
.. flat-table:: struct v4l2_vp8_entropy_coder_state
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - __u8
      - ``range``
      - coder state value for "Range"
    * - __u8
      - ``value``
      - coder state value for "Value"-
    * - __u8
      - ``bit_count``
      - number of bits left.
    * - __u8
      - ``padding``
      - Applications and drivers must set this to zero.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1084)

Unknown directive type "c:type".

```
.. c:type:: v4l2_vp8_segment
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1086)

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)ext-ctrls-codec-stateless.rst, line 1088)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{1.2cm}|p{4.0cm}|p{12.1cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1090)

Unknown directive type "flat-table".

```
.. flat-table:: struct v4l2_vp8_segment
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - __s8
      - ``quant_update[4]``
      - Signed quantizer value update.
    * - __s8
      - ``lf_update[4]``
      - Signed loop filter level value update.
    * - __u8
      - ``segment_probs[3]``
      - Segment probabilities.
    * - __u8
      - ``padding``
      - Applications and drivers must set this to zero.
    * - __u32
      - ``flags``
      - See :ref:`Segment Flags <vp8_segment_flags>`
```

Segment Flags

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1119)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{10cm}|p{1.0cm}|p{6.3cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1121)

Unknown directive type "flat-table".

```
.. flat-table::
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - ``V4L2_VP8_SEGMENT_FLAG_ENABLED``
      - 0x01
      - Enable/disable segment-based adjustments.
    * - ``V4L2_VP8_SEGMENT_FLAG_UPDATE_MAP``
      - 0x02
      - Indicates if the macroblock segmentation map is updated in this frame.
    * - ``V4L2_VP8_SEGMENT_FLAG_UPDATE_FEATURE_DATA``
      - 0x04
      - Indicates if the segment feature data is updated in this frame.
    * - ``V4L2_VP8_SEGMENT_FLAG_DELTA_VALUE_MODE``
      - 0x08
      - If is set, the segment feature data mode is delta-value.
        If cleared, it's absolute-value.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1144)

Unknown directive type "c:type".

```
.. c:type:: v4l2_vp8_loop_filter
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1146)

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)ext-ctrls-codec-stateless.rst, line 1148)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{1.5cm}|p{3.9cm}|p{11.9cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1150)

Unknown directive type "flat-table".

```
.. flat-table:: struct v4l2_vp8_loop_filter
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2
```

```
      * - __s8
        - ``ref_frm_delta[4]``
        - Reference adjustment (signed) delta value.
      * - __s8
        - ``mb_mode_delta[4]``
        - Macroblock prediction mode adjustment (signed) delta value.
      * - __u8
        - ``sharpness_level``
        - Sharpness level
      * - __u8
        - ``level``
        - Filter level
      * - __u16
        - ``padding``
        - Applications and drivers must set this to zero.
      * - __u32
        - ``flags``
        - See :ref:`Loop Filter Flags <vp8_loop_filter_flags>`
```

Loop Filter Flags

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1178)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{7.0cm}|p{1.2cm}|p{9.1cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1180)

Unknown directive type "flat-table".

```
.. flat-table::
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - ``V4L2_VP8_LF_ADJ_ENABLE``
      - 0x01
      - Enable/disable macroblock-level loop filter adjustment.
    * - ``V4L2_VP8_LF_DELTA_UPDATE``
      - 0x02
      - Indicates if the delta values used in an adjustment are updated.
    * - ``V4L2_VP8_LF_FILTER_TYPE_SIMPLE``
      - 0x04
      - If set, indicates the filter type is simple.
        If cleared, the filter type is normal.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1196)

Unknown directive type "c:type".

```
.. c:type:: v4l2_vp8_quantization
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1198)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{1.5cm}|p{3.5cm}|p{12.3cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-

api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1200)

Unknown directive type "flat-table".

```
.. flat-table:: struct v4l2_vp8_quantization
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - __u8
      - ``y_ac_qi``
      - Luma AC coefficient table index.
    * - __s8
      - ``y_dc_delta``
      - Luma DC delta vaue.
    * - __s8
      - ``y2_dc_delta``
      - Y2 block DC delta value.
    * - __s8
      - ``y2_ac_delta``
      - Y2 block AC delta value.
    * - __s8
      - ``uv_dc_delta``
      - Chroma DC delta value.
    * - __s8
      - ``uv_ac_delta``
      - Chroma AC delta value.
    * - __u16
      - ``padding``
      - Applications and drivers must set this to zero.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1227)

Unknown directive type "c:type".

```
.. c:type:: v4l2_vp8_entropy
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1229)

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)ext-ctrls-codec-stateless.rst, line 1231)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{1.5cm}|p{5.8cm}|p{10.0cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1233)

Unknown directive type "flat-table".

```
.. flat-table:: struct v4l2_vp8_entropy
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - __u8
      - ``coeff_probs[4][8][3][11]``
      - Coefficient update probabilities.
    * - __u8
      - ``y_mode_probs[4]``
      - Luma mode update probabilities.
```

```
        * - __u8
          - ``uv_mode_probs[3]``
          - Chroma mode update probabilities.
        * - __u8
          - ``mv_probs[2][19]``
          - MV decoding update probabilities.
        * - __u8
          - ``padding[3]``
          - Applications and drivers must set this to zero.
```

V4L2_CID_STATELESS_MPEG2_SEQUENCE (struct)

Specifies the sequence parameters (as extracted from the bitstream) for the associated MPEG-2 slice data. This includes fields matching the syntax elements from the sequence header and sequence extension parts of the bitstream as specified by :ref:`mpeg2part2`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1257); *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)ext-ctrls-codec-stateless.rst, line 1262)

Unknown directive type "c:type".

```
.. c:type:: v4l2_ctrl_mpeg2_sequence
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1268)

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)ext-ctrls-codec-stateless.rst, line 1270)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{1.4cm}|p{6.5cm}|p{9.4cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1272)

Unknown directive type "flat-table".

```
.. flat-table:: struct v4l2_ctrl_mpeg2_sequence
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - __u16
      - ``horizontal_size``
      - The width of the displayable part of the frame's luminance component.
    * - __u16
      - ``vertical_size``
      - The height of the displayable part of the frame's luminance component.
    * - __u32
      - ``vbv_buffer_size``
      - Used to calculate the required size of the video buffering verifier,
        defined (in bits) as: 16 * 1024 * vbv_buffer_size.
    * - __u16
      - ``profile_and_level_indication``
```

```
      - The current profile and level indication as extracted from the
        bitstream.
    * - __u8
      - ``chroma_format``
      - The chrominance sub-sampling format (1: 4:2:0, 2: 4:2:2, 3: 4:4:4).
    * - __u8
      - ``flags``
      - See :ref:`MPEG-2 Sequence Flags <mpeg2_sequence_flags>`.
```

MPEG-2 Sequence Flags

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1302)

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)ext-ctrls-codec-stateless.rst, line 1304)

Unknown directive type "flat-table".

```
.. flat-table::
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - ``V4L2_MPEG2_SEQ_FLAG_PROGRESSIVE``
      - 0x01
      - Indication that all the frames for the sequence are progressive instead
        of interlaced.
```

V4L2_CID_STATELESS_MPEG2_PICTURE (struct)

Specifies the picture parameters (as extracted from the bitstream) for the associated MPEG-2 slice data. This includes fields matching the syntax elements from the picture header and picture coding extension parts of the bitstream as specified by :ref:`mpeg2part2`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1319); *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)ext-ctrls-codec-stateless.rst, line 1324)

Unknown directive type "c:type".

```
.. c:type:: v4l2_ctrl_mpeg2_picture
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1330)

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)ext-ctrls-codec-stateless.rst, line 1332)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{1.0cm}|p{5.6cm}|p{10.7cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1334)

Unknown directive type "flat-table".

```
.. flat-table:: struct v4l2_ctrl_mpeg2_picture
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - __u64
      - ``backward_ref_ts``
      - Timestamp of the V4L2 capture buffer to use as backward reference, used
        with B-coded and P-coded frames. The timestamp refers to the
        ``timestamp`` field in struct :c:type:`v4l2_buffer`. Use the
        :c:func:`v4l2_timeval_to_ns()` function to convert the struct
        :c:type:`timeval` in struct :c:type:`v4l2_buffer` to a __u64.
    * - __u64
      - ``forward_ref_ts``
      - Timestamp for the V4L2 capture buffer to use as forward reference, used
        with B-coded frames. The timestamp refers to the ``timestamp`` field in
        struct :c:type:`v4l2_buffer`. Use the :c:func:`v4l2_timeval_to_ns()`
        function to convert the struct :c:type:`timeval` in struct
        :c:type:`v4l2_buffer` to a __u64.
    * - __u32
      - ``flags``
      - See :ref:`MPEG-2 Picture Flags <mpeg2_picture_flags>`.
    * - __u8
      - ``f_code[2][2]``
      - Motion vector codes.
    * - __u8
      - ``picture_coding_type``
      - Picture coding type for the frame covered by the current slice
        (V4L2_MPEG2_PIC_CODING_TYPE_I, V4L2_MPEG2_PIC_CODING_TYPE_P or
        V4L2_MPEG2_PIC_CODING_TYPE_B).
    * - __u8
      - ``picture_structure``
      - Picture structure (1: interlaced top field, 2: interlaced bottom field,
        3: progressive frame).
    * - __u8
      - ``intra_dc_precision``
      - Precision of Discrete Cosine transform (0: 8 bits precision,
        1: 9 bits precision, 2: 10 bits precision, 3: 11 bits precision).
    * - __u8
      - ``reserved[5]``
      - Applications and drivers must set this to zero.
```

MPEG-2 Picture Flags

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1380)

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)ext-ctrls-codec-stateless.rst, line 1382)

Unknown directive type "flat-table".

```
.. flat-table::
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - ``V4L2_MPEG2_PIC_FLAG_TOP_FIELD_FIRST``
```

```
      - 0x00000001
      - If set and it's an interlaced stream, top field is output first.
    * - ``V4L2_MPEG2_PIC_FLAG_FRAME_PRED_DCT``
      - 0x00000002
      - If set only frame-DCT and frame prediction are used.
    * - ``V4L2_MPEG2_PIC_FLAG_CONCEALMENT_MV``
      - 0x00000004
      -  If set motion vectors are coded for intra macroblocks.
    * - ``V4L2_MPEG2_PIC_FLAG_Q_SCALE_TYPE``
      - 0x00000008
      - This flag affects the inverse quantization process.
    * - ``V4L2_MPEG2_PIC_FLAG_INTRA_VLC``
      - 0x00000010
      - This flag affects the decoding of transform coefficient data.
    * - ``V4L2_MPEG2_PIC_FLAG_ALT_SCAN``
      - 0x00000020
      - This flag affects the decoding of transform coefficient data.
    * - ``V4L2_MPEG2_PIC_FLAG_REPEAT_FIRST``
      - 0x00000040
      - This flag affects the decoding process of progressive frames.
    * - ``V4L2_MPEG2_PIC_FLAG_PROGRESSIVE``
      - 0x00000080
      - Indicates whether the current frame is progressive.
```

`V4L2_CID_STATELESS_MPEG2_QUANTISATION (struct)`

Specifies quantisation matrices, in zigzag scanning order, for the associated MPEG-2 slice data. This control is initialized by the kernel to the matrices default values. If a bitstream transmits a user-defined quantisation matrices load, applications are expected to use this control. Applications are also expected to set the control loading the default values, if the quantisation matrices need to be reset, for instance on a sequence header. This process is specified by section 6.3.7. "Quant matrix extension" of the specification.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1426)

Unknown directive type "c:type".

```
.. c:type:: v4l2_ctrl_mpeg2_quantisation
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1428)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{0.8cm}|p{8.0cm}|p{8.5cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1430)

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)ext-ctrls-codec-stateless.rst, line 1436)

Unknown directive type "flat-table".

```
.. flat-table:: struct v4l2_ctrl_mpeg2_quantisation
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - __u8
      - ``intra_quantiser_matrix[64]``
      - The quantisation matrix coefficients for intra-coded frames, in zigzag
        scanning order. It is relevant for both luma and chroma components,
        although it can be superseded by the chroma-specific matrix for
```

```
      non-4:2:0 YUV formats.
    * - __u8
      - ``non_intra_quantiser_matrix[64]``
      - The quantisation matrix coefficients for non-intra-coded frames, in
        zigzag scanning order. It is relevant for both luma and chroma
        components, although it can be superseded by the chroma-specific matrix
        for non-4:2:0 YUV formats.
    * - __u8
      - ``chroma_intra_quantiser_matrix[64]``
      - The quantisation matrix coefficients for the chominance component of
        intra-coded frames, in zigzag scanning order. Only relevant for
        non-4:2:0 YUV formats.
    * - __u8
      - ``chroma_non_intra_quantiser_matrix[64]``
      - The quantisation matrix coefficients for the chrominance component of
        non-intra-coded frames, in zigzag scanning order. Only relevant for
        non-4:2:0 YUV formats.
```

V4L2_CID_STATELESS_VP9_COMPRESSED_HDR (struct)

Stores VP9 probabilities updates as parsed from the current compressed frame header. A value of zero in an array element means no update of the relevant probability. Motion vector-related updates contain a new value or zero. All other updates contain values translated with inv_map_table[] (see 6.3.5 in :ref:`vp9`).

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1471); *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)ext-ctrls-codec-stateless.rst, line 1477)

Unknown directive type "c:type".

```
.. c:type:: v4l2_ctrl_vp9_compressed_hdr
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1479)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{1cm}|p{4.8cm}|p{11.4cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1481)

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)ext-ctrls-codec-stateless.rst, line 1483)

Unknown directive type "flat-table".

```
.. flat-table:: struct v4l2_ctrl_vp9_compressed_hdr
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - __u8
      - ``tx_mode``
      - Specifies the TX mode. See :ref:`TX Mode <vp9_tx_mode>` for more details.
    * - __u8
```

```
      - ``tx8[2][1]``
      - TX 8x8 probabilities delta.
    * - __u8
      - ``tx16[2][2]``
      - TX 16x16 probabilities delta.
    * - __u8
      - ``tx32[2][3]``
      - TX 32x32 probabilities delta.
    * - __u8
      - ``coef[4][2][2][6][6][3]``
      - Coefficient probabilities delta.
    * - __u8
      - ``skip[3]``
      - Skip probabilities delta.
    * - __u8
      - ``inter_mode[7][3]``
      - Inter prediction mode probabilities delta.
    * - __u8
      - ``interp_filter[4][2]``
      - Interpolation filter probabilities delta.
    * - __u8
      - ``is_inter[4]``
      - Is inter-block probabilities delta.
    * - __u8
      - ``comp_mode[5]``
      - Compound prediction mode probabilities delta.
    * - __u8
      - ``single_ref[5][2]``
      - Single reference probabilities delta.
    * - __u8
      - ``comp_ref[5]``
      - Compound reference probabilities delta.
    * - __u8
      - ``y_mode[4][9]``
      - Y prediction mode probabilities delta.
    * - __u8
      - ``uv_mode[10][9]``
      - UV prediction mode probabilities delta.
    * - __u8
      - ``partition[16][3]``
      - Partition probabilities delta.
    * - __u8
      - ``mv.joint[3]``
      - Motion vector joint probabilities delta.
    * - __u8
      - ``mv.sign[2]``
      - Motion vector sign probabilities delta.
    * - __u8
      - ``mv.classes[2][10]``
      - Motion vector class probabilities delta.
    * - __u8
      - ``mv.class0_bit[2]``
      - Motion vector class0 bit probabilities delta.
    * - __u8
      - ``mv.bits[2][10]``
      - Motion vector bits probabilities delta.
    * - __u8
      - ``mv.class0_fr[2][2][3]``
      - Motion vector class0 fractional bit probabilities delta.
    * - __u8
      - ``mv.fr[2][3]``
      - Motion vector fractional bit probabilities delta.
    * - __u8
      - ``mv.class0_hp[2]``
      - Motion vector class0 high precision fractional bit probabilities delta.
    * - __u8
      - ``mv.hp[2]``
      - Motion vector high precision fractional bit probabilities delta.
```

TX Mode

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1565)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{6.5cm}|p{0.5cm}|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)ext-ctrls-codec-stateless.rst, line 1567)

Unknown directive type "flat-table".

```
.. flat-table::
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - ``V4L2_VP9_TX_MODE_ONLY_4X4``
      - 0
      - Transform size is 4x4.
    * - ``V4L2_VP9_TX_MODE_ALLOW_8X8``
      - 1
      - Transform size can be up to 8x8.
    * - ``V4L2_VP9_TX_MODE_ALLOW_16X16``
      - 2
      - Transform size can be up to 16x16.
    * - ``V4L2_VP9_TX_MODE_ALLOW_32X32``
      - 3
      - transform size can be up to 32x32.
    * - ``V4L2_VP9_TX_MODE_SELECT``
      - 4
      - Bitstream contains the transform size for each block.
```

See section '7.3.1 Tx mode semantics' of the :ref:`vp9` specification for more details.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1588); *backlink*

Unknown interpreted text role "ref".

V4L2_CID_STATELESS_VP9_FRAME (struct)

Specifies the frame parameters for the associated VP9 frame decode request. This includes the necessary parameters for configuring a stateless hardware decoding pipeline for VP9. The bitstream parameters are defined according to :ref:`vp9`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1591); *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)ext-ctrls-codec-stateless.rst, line 1596)

Unknown directive type "c:type".

```
.. c:type:: v4l2_ctrl_vp9_frame
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1602)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{4.7cm}|p{5.5cm}|p{7.1cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1604)

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)ext-ctrls-codec-stateless.rst, line 1606)

Unknown directive type "flat-table".

```
.. flat-table:: struct v4l2_ctrl_vp9_frame
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - struct :c:type:`v4l2_vp9_loop_filter`
      - ``lf``
      - Loop filter parameters. See struct :c:type:`v4l2_vp9_loop_filter` for more details.
    * - struct :c:type:`v4l2_vp9_quantization`
      - ``quant``
      - Quantization parameters. See :c:type:`v4l2_vp9_quantization` for more details.
    * - struct :c:type:`v4l2_vp9_segmentation`
      - ``seg``
      - Segmentation parameters. See :c:type:`v4l2_vp9_segmentation` for more details.
    * - __u32
      - ``flags``
      - Combination of V4L2_VP9_FRAME_FLAG_* flags. See :ref:`Frame Flags<vp9_frame_flags>`.
    * - __u16
      - ``compressed_header_size``
      - Compressed header size in bytes.
    * - __u16
      - ``uncompressed_header_size``
      - Uncompressed header size in bytes.
    * - __u16
      - ``frame_width_minus_1``
      - Add 1 to get the frame width expressed in pixels. See section 7.2.3 in :ref:`vp9`.
    * - __u16
      - ``frame_height_minus_1``
      - Add 1 to get the frame height expressed in pixels. See section 7.2.3 in :ref:`vp9`.
    * - __u16
      - ``render_width_minus_1``
      - Add 1 to get the expected render width expressed in pixels. This is
        not used during the decoding process but might be used by HW scalers to
        prepare a frame that's ready for scanout. See section 7.2.4 in :ref:`vp9`.
    * - __u16
      - render_height_minus_1
      - Add 1 to get the expected render height expressed in pixels. This is
        not used during the decoding process but might be used by HW scalers to
        prepare a frame that's ready for scanout. See section 7.2.4 in :ref:`vp9`.
    * - __u64
      - ``last_frame_ts``
      - "last" reference buffer timestamp.
        The timestamp refers to the ``timestamp`` field in
        struct :c:type:`v4l2_buffer`. Use the :c:func:`v4l2_timeval_to_ns()`
        function to convert the struct :c:type:`timeval` in struct
        :c:type:`v4l2_buffer` to a __u64.
    * - __u64
      - ``golden_frame_ts``
      - "golden" reference buffer timestamp.
        The timestamp refers to the ``timestamp`` field in
        struct :c:type:`v4l2_buffer`. Use the :c:func:`v4l2_timeval_to_ns()`
        function to convert the struct :c:type:`timeval` in struct
        :c:type:`v4l2_buffer` to a __u64.
    * - __u64
      - ``alt_frame_ts``
      - "alt" reference buffer timestamp.
        The timestamp refers to the ``timestamp`` field in
        struct :c:type:`v4l2_buffer`. Use the :c:func:`v4l2_timeval_to_ns()`
        function to convert the struct :c:type:`timeval` in struct
        :c:type:`v4l2_buffer` to a __u64.
    * - __u8
      - ``ref_frame_sign_bias``
      - a bitfield specifying whether the sign bias is set for a given
        reference frame. See :ref:`Reference Frame Sign Bias<vp9_ref_frame_sign_bias>`
        for more details.
    * - __u8
      - ``reset_frame_context``
      - specifies whether the frame context should be reset to default values. See
        :ref:`Reset Frame Context<vp9_reset_frame_context>` for more details.
    * - __u8
      - ``frame_context_idx``
```

```
      - Frame context that should be used/updated.
    * - __u8
      - ``profile``
      - VP9 profile. Can be 0, 1, 2 or 3.
    * - __u8
      - ``bit_depth``
      - Component depth in bits. Can be 8, 10 or 12. Note that not all profiles
        support 10 and/or 12 bits depths.
    * - __u8
      - ``interpolation_filter``
      - Specifies the filter selection used for performing inter prediction. See
        :ref:`Interpolation Filter<vp9_interpolation_filter>` for more details.
    * - __u8
      - ``tile_cols_log2``
      - Specifies the base 2 logarithm of the width of each tile (where the
        width is measured in units of 8x8 blocks). Shall be less than or equal
        to 6.
    * - __u8
      - ``tile_rows_log2``
      - Specifies the base 2 logarithm of the height of each tile (where the
        height is measured in units of 8x8 blocks).
    * - __u8
      - ``reference_mode``
      - Specifies the type of inter prediction to be used. See
        :ref:`Reference Mode<vp9_reference_mode>` for more details. Note that
        this is derived as part of the compressed header parsing process and
        for this reason should have been part of
        :c:type: `v4l2_ctrl_vp9_compressed_hdr` optional control. It is safe to
        set this value to zero if the driver does not require compressed
        headers.
    * - __u8
      - ``reserved[7]``
      - Applications and drivers must set this to zero.
```

Frame Flags

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1719)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{10.0cm}|p{1.2cm}|p{6.1cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1721)

Unknown directive type "flat-table".

```
.. flat-table::
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - ``V4L2_VP9_FRAME_FLAG_KEY_FRAME``
      - 0x001
      - The frame is a key frame.
    * - ``V4L2_VP9_FRAME_FLAG_SHOW_FRAME``
      - 0x002
      - The frame should be displayed.
    * - ``V4L2_VP9_FRAME_FLAG_ERROR_RESILIENT``
      - 0x004
      - The decoding should be error resilient.
    * - ``V4L2_VP9_FRAME_FLAG_INTRA_ONLY``
      - 0x008
      - The frame does not reference other frames.
    * - ``V4L2_VP9_FRAME_FLAG_ALLOW_HIGH_PREC_MV``
      - 0x010
      - The frame can use high precision motion vectors.
    * - ``V4L2_VP9_FRAME_FLAG_REFRESH_FRAME_CTX``
      - 0x020
      - Frame context should be updated after decoding.
    * - ``V4L2_VP9_FRAME_FLAG_PARALLEL_DEC_MODE``
      - 0x040
      - Parallel decoding is used.
    * - ``V4L2_VP9_FRAME_FLAG_X_SUBSAMPLING``
```

```
      - 0x080
      - Vertical subsampling is enabled.
    * - ``V4L2_VP9_FRAME_FLAG_Y_SUBSAMPLING``
      - 0x100
      - Horizontal subsampling is enabled.
    * - ``V4L2_VP9_FRAME_FLAG_COLOR_RANGE_FULL_SWING``
      - 0x200
      - The full UV range is used.
```

Reference Frame Sign Bias

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1761)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{7.0cm}|p{1.2cm}|p{9.1cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1763)

Unknown directive type "flat-table".

```
.. flat-table::
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - ``V4L2_VP9_SIGN_BIAS_LAST``
      - 0x1
      - Sign bias is set for the last reference frame.
    * - ``V4L2_VP9_SIGN_BIAS_GOLDEN``
      - 0x2
      - Sign bias is set for the golden reference frame.
    * - ``V4L2_VP9_SIGN_BIAS_ALT``
      - 0x2
      - Sign bias is set for the alt reference frame.
```

Reset Frame Context

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1782)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{7.0cm}|p{1.2cm}|p{9.1cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1784)

Unknown directive type "flat-table".

```
.. flat-table::
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - ``V4L2_VP9_RESET_FRAME_CTX_NONE``
      - 0
      - Do not reset any frame context.
    * - ``V4L2_VP9_RESET_FRAME_CTX_SPEC``
      - 1
      - Reset the frame context pointed to by
        :c:type:`v4l2_ctrl_vp9_frame`.frame_context_idx.
    * - ``V4L2_VP9_RESET_FRAME_CTX_ALL``
      - 2
      - Reset all frame contexts.
```

See section '7.2 Uncompressed header semantics' of the :ref:`vp9` specification for more details.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1800); *backlink*

Unknown interpreted text role "ref".

`Interpolation Filter`

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1807)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{9.0cm}|p{1.2cm}|p{7.1cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1809)

Unknown directive type "flat-table".

```
.. flat-table::
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - ``V4L2_VP9_INTERP_FILTER_EIGHTTAP``
      - 0
      - Eight tap filter.
    * - ``V4L2_VP9_INTERP_FILTER_EIGHTTAP_SMOOTH``
      - 1
      - Eight tap smooth filter.
    * - ``V4L2_VP9_INTERP_FILTER_EIGHTTAP_SHARP``
      - 2
      - Eeight tap sharp filter.
    * - ``V4L2_VP9_INTERP_FILTER_BILINEAR``
      - 3
      - Bilinear filter.
    * - ``V4L2_VP9_INTERP_FILTER_SWITCHABLE``
      - 4
      - Filter selection is signaled at the block level.
```

See section '7.2.7 Interpolation filter semantics' of the :ref:`vp9` specification for more details.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1830); *backlink*

Unknown interpreted text role "ref".

`Reference Mode`

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1837)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{9.6cm}|p{0.5cm}|p{7.2cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1839)

Unknown directive type "flat-table".

```
.. flat-table::
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - ``V4L2_VP9_REFERENCE_MODE_SINGLE_REFERENCE``
      - 0
      - Indicates that all the inter blocks use only a single reference frame
        to generate motion compensated prediction.
    * - ``V4L2_VP9_REFERENCE_MODE_COMPOUND_REFERENCE``
      - 1
      - Requires all the inter blocks to use compound mode. Single reference
        frame prediction is not allowed.
    * - ``V4L2_VP9_REFERENCE_MODE_SELECT``
      - 2
      - Allows each individual inter block to select between single and
        compound prediction modes.
```

See section '7.3.6 Frame reference mode semantics' of the :ref:`vp9` specification for more details.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1857); *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)ext-ctrls-codec-stateless.rst, line 1859)

Unknown directive type "c:type".

```
.. c:type:: v4l2_vp9_segmentation
```

Encodes the quantization parameters. See section '7.2.10 Segmentation params syntax' of the :ref:`vp9` specification for more details.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1861); *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)ext-ctrls-codec-stateless.rst, line 1864)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{0.8cm}|p{5cm}|p{11.4cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1866)

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)ext-ctrls-codec-stateless.rst, line 1868)

Unknown directive type "flat-table".

```
.. flat-table:: struct v4l2_vp9_segmentation
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2
```

```
      * - __u8
        - ``feature_data[8][4]``
        - Data attached to each feature. Data entry is only valid if the feature
          is enabled. The array shall be indexed with segment number as the first dimension
          (0..7) and one of V4L2_VP9_SEG_* as the second dimension.
          See :ref:`Segment Feature IDs<vp9_segment_feature>`.
      * - __u8
        - ``feature_enabled[8]``
        - Bitmask defining which features are enabled in each segment. The value for each
          segment is a combination of V4L2_VP9_SEGMENT_FEATURE_ENABLED(id) values where id is
          one of V4L2_VP9_SEG_*. See :ref:`Segment Feature IDs<vp9_segment_feature>`.
      * - __u8
        - ``tree_probs[7]``
        - Specifies the probability values to be used when decoding a Segment-ID.
          See '5.15. Segmentation map' section of :ref:`vp9` for more details.
      * - __u8
        - ``pred_probs[3]``
        - Specifies the probability values to be used when decoding a
          Predicted-Segment-ID. See '6.4.14. Get segment id syntax'
          section of :ref:`vp9` for more details.
      * - __u8
        - ``flags``
        - Combination of V4L2_VP9_SEGMENTATION_FLAG_* flags. See
          :ref:`Segmentation Flags<vp9_segmentation_flags>`.
      * - __u8
        - ``reserved[5]``
        - Applications and drivers must set this to zero.
```

Segment feature IDs

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1905)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{6.0cm}|p{1cm}|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)ext-ctrls-codec-stateless.rst, line 1907)

Unknown directive type "flat-table".

```
.. flat-table::
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - ``V4L2_VP9_SEG_LVL_ALT_Q``
      - 0
      - Quantizer segment feature.
    * - ``V4L2_VP9_SEG_LVL_ALT_L``
      - 1
      - Loop filter segment feature.
    * - ``V4L2_VP9_SEG_LVL_REF_FRAME``
      - 2
      - Reference frame segment feature.
    * - ``V4L2_VP9_SEG_LVL_SKIP``
      - 3
      - Skip segment feature.
    * - ``V4L2_VP9_SEG_LVL_MAX``
      - 4
      - Number of segment features.
```

Segmentation Flags

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1932)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{10.6cm}|p{0.8cm}|p{5.9cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1934)

Unknown directive type "flat-table".

```
.. flat-table::
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - ``V4L2_VP9_SEGMENTATION_FLAG_ENABLED``
      - 0x01
      - Indicates that this frame makes use of the segmentation tool.
    * - ``V4L2_VP9_SEGMENTATION_FLAG_UPDATE_MAP``
      - 0x02
      - Indicates that the segmentation map should be updated during the
        decoding of this frame.
    * - ``V4L2_VP9_SEGMENTATION_FLAG_TEMPORAL_UPDATE``
      - 0x04
      - Indicates that the updates to the segmentation map are coded
        relative to the existing segmentation map.
    * - ``V4L2_VP9_SEGMENTATION_FLAG_UPDATE_DATA``
      - 0x08
      - Indicates that new parameters are about to be specified for each
        segment.
    * - ``V4L2_VP9_SEGMENTATION_FLAG_ABS_OR_DELTA_UPDATE``
      - 0x10
      - Indicates that the segmentation parameters represent the actual values
        to be used.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1959)

Unknown directive type "c:type".

```
.. c:type:: v4l2_vp9_quantization
```

Encodes the quantization parameters. See section '7.2.9 Quantization params syntax' of the VP9 specification for more details.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1964)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{0.8cm}|p{4cm}|p{12.4cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1966)

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)ext-ctrls-codec-stateless.rst, line 1968)

Unknown directive type "flat-table".

```
.. flat-table:: struct v4l2_vp9_quantization
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - __u8
```

```
      - ``base_q_idx``
      - Indicates the base frame qindex.
    * - __s8
      - ``delta_q_y_dc``
      - Indicates the Y DC quantizer relative to base_q_idx.
    * - __s8
      - ``delta_q_uv_dc``
      - Indicates the UV DC quantizer relative to base_q_idx.
    * - __s8
      - ``delta_q_uv_ac``
      - Indicates the UV AC quantizer relative to base_q_idx.
    * - __u8
      - ``reserved[4]``
      - Applications and drivers must set this to zero.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1989)

Unknown directive type "c:type".

```
.. c:type:: v4l2_vp9_loop_filter
```

This structure contains all loop filter related parameters. See sections '7.2.8 Loop filter semantics' of the :ref:`vp9` specification for more details.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1991); *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)ext-ctrls-codec-stateless.rst, line 1994)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{0.8cm}|p{4cm}|p{12.4cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 1996)

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)ext-ctrls-codec-stateless.rst, line 1998)

Unknown directive type "flat-table".

```
.. flat-table:: struct v4l2_vp9_loop_filter
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - __s8
      - ``ref_deltas[4]``
      - Contains the adjustment needed for the filter level based on the chosen
        reference frame.
    * - __s8
      - ``mode_deltas[2]``
      - Contains the adjustment needed for the filter level based on the chosen
        mode.
    * - __u8
      - ``level``
      - Indicates the loop filter strength.
```

```
      * - __u8
        - ``sharpness``
        - Indicates the sharpness level.
      * - __u8
        - ``flags``
        - Combination of V4L2_VP9_LOOP_FILTER_FLAG_* flags.
          See :ref:`Loop Filter Flags <vp9_loop_filter_flags>`.
      * - __u8
        - ``reserved[7]``
        - Applications and drivers must set this to zero.
```

Loop Filter Flags

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 2030)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{9.6cm}|p{0.5cm}|p{7.2cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\(linux-master)(Documentation)(userspace-api)(media)(v4l)ext-ctrls-codec-stateless.rst, line 2032)

Unknown directive type "flat-table".

```
.. flat-table::
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - ``V4L2_VP9_LOOP_FILTER_FLAG_DELTA_ENABLED``
      - 0x1
      - When set, the filter level depends on the mode and reference frame used
        to predict a block.
    * - ``V4L2_VP9_LOOP_FILTER_FLAG_DELTA_UPDATE``
      - 0x2
      - When set, the bitstream contains additional syntax elements that
        specify which mode and reference frame deltas are to be updated.
```