ioctl VIDIOC_REQBUFS

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\[linux-master][Documentation][userspace-api][media][v4l]vidioc-reqbufs.rst, line 2)

Unknown directive type "c:namespace".

```
.. c:namespace:: V4L
```

Name

VIDIOC_REQBUFS - Initiate Memory Mapping, User Pointer I/O or DMA buffer I/O

Synopsis

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

Unknown directive type "c:macro".

```
.. c:macro:: VIDIOC_REQBUFS
```

```
int ioctl(int fd, VIDIOC_REQBUFS, struct v4l2_requestbuffers *argp)
```

Arguments

`fd`

File descriptor returned by :c:func:`open()`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\[linux-master][Documentation][userspace-api][media][v4l]vidioc-reqbufs.rst, line 26); *backlink*

Unknown interpreted text role "c:func".

`argp`

Pointer to struct :c:type:`v4l2_requestbuffers`.

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

Unknown interpreted text role "c:type".

Description

This ioctl is used to initiate :ref:`memory mapped <mmap>`, :ref:`user pointer <userp>` or :ref:`DMABUF <dmabuf>` based I/O. Memory mapped buffers are located in device memory and must be allocated with this ioctl before they can be mapped into the application's address space. User buffers are allocated by applications themselves, and this ioctl is merely used to switch the driver into user pointer I/O mode and to setup some internal structures. Similarly, DMABUF buffers are allocated by applications through a device driver, and this ioctl only configures the driver into DMABUF I/O mode without performing any direct allocation.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\[linux-master][Documentation][userspace-api][media][v4l]vidioc-reqbufs.rst, line 34); *backlink*

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System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\[linux-master][Documentation][userspace-api][media][v4l]vidioc-reqbufs.rst, line 34); *backlink*

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System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\[linux-master][Documentation][userspace-api][media][v4l]vidioc-reqbufs.rst, line 34); *backlink*

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To allocate device buffers applications initialize all fields of the struct :c:type:`v4l2_requestbuffers` structure. They set the `type` field to the respective stream or buffer type, the `count` field to the desired number of buffers, `memory` must be set to the requested I/O method and the `reserved` array must be zeroed. When the ioctl is called with a pointer to this structure the driver will attempt to allocate the requested number of buffers and it stores the actual number allocated in the `count` field. It can be smaller than the number requested, even zero, when the driver runs out of free memory. A larger number is also possible when the driver requires more buffers to function correctly. For example video output requires at least two buffers, one displayed and one filled by the application.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\[linux-master][Documentation][userspace-api][media][v4l]vidioc-reqbufs.rst, line 45); *backlink*

Unknown interpreted text role "c:type".

When the I/O method is not supported the ioctl returns an `EINVAL` error code.

Applications can call :ref:`VIDIOC_REQBUFS` again to change the number of buffers. Note that if any buffers are still mapped or exported via DMABUF, then :ref:`VIDIOC_REQBUFS` can only succeed if the `V4L2_BUF_CAP_SUPPORTS_ORPHANED_BUFS` capability is set. Otherwise :ref:`VIDIOC_REQBUFS` will return the `EBUSY` error code. If `V4L2_BUF_CAP_SUPPORTS_ORPHANED_BUFS` is set, then these buffers are orphaned and will be freed when they are unmapped or when the exported DMABUF fds are closed. A `count` value of zero frees or orphans all buffers, after aborting or finishing any DMA in progress, an implicit :ref:`VIDIOC_STREAMOFF <VIDIOC_STREAMON>`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\[linux-master][Documentation][userspace-api][media][v4l]vidioc-reqbufs.rst, line 61); *backlink*

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System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\[linux-master][Documentation][userspace-api][media][v4l]vidioc-reqbufs.rst, line 61); *backlink*

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System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\[linux-master][Documentation][userspace-api][media][v4l]vidioc-reqbufs.rst, line 61); *backlink*

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System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\[linux-master][Documentation][userspace-api][media][v4l]vidioc-reqbufs.rst, line 61); *backlink*

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System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\[linux-master][Documentation][userspace-api][media][v4l]vidioc-reqbufs.rst, line 72)

Unknown directive type "c:type".

```
.. c:type:: v4l2_requestbuffers
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\[linux-master][Documentation][userspace-api][media][v4l]vidioc-reqbufs.rst, line 74)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{4.4cm}|p{4.4cm}|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]vidioc-reqbufs.rst, line 76)

Unknown directive type "flat-table".

```
.. flat-table:: struct v4l2_requestbuffers
    :header-rows:  0
    :stub-columns: 0
    :widths:       1 1 2

    * - __u32
      - ``count``
      - The number of buffers requested or granted.
    * - __u32
      - ``type``
      - Type of the stream or buffers, this is the same as the struct
        :c:type:`v4l2_format` ``type`` field. See
        :c:type:`v4l2_buf_type` for valid values.
    * - __u32
      - ``memory``
      - Applications set this field to ``V4L2_MEMORY_MMAP``,
        ``V4L2_MEMORY_DMABUF`` or ``V4L2_MEMORY_USERPTR``. See
        :c:type:`v4l2_memory`.
    * - __u32
      - ``capabilities``
      - Set by the driver. If 0, then the driver doesn't support
        capabilities. In that case all you know is that the driver is
        guaranteed to support ``V4L2_MEMORY_MMAP`` and *might* support
        other :c:type:`v4l2_memory` types. It will not support any other
        capabilities.

        If you want to query the capabilities with a minimum of side-effects,
        then this can be called with ``count`` set to 0, ``memory`` set to
        ``V4L2_MEMORY_MMAP`` and ``type`` set to the buffer type. This will
        free any previously allocated buffers, so this is typically something
        that will be done at the start of the application.
    * - __u8
      - ``flags``
      - Specifies additional buffer management attributes.
        See :ref:`memory-flags`.
    * - __u8
      - ``reserved``\ [3]
      - Reserved for future extensions.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\[linux-master][Documentation][userspace-api][media][v4l]vidioc-reqbufs.rst, line 128)

Unknown directive type "tabularcolumns".

```
.. tabularcolumns:: |p{8.1cm}|p{2.2cm}|p{7.0cm}|
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\[linux-master][Documentation][userspace-api][media][v4l]vidioc-reqbufs.rst, line 130)

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]vidioc-reqbufs.rst, line 132)

Unknown directive type "flat-table".

```
.. flat-table:: V4L2 Buffer Capabilities Flags
    :header-rows:  0
    :stub-columns: 0
    :widths:       3 1 4

    * - ``V4L2_BUF_CAP_SUPPORTS_MMAP``
      - 0x00000001
      - This buffer type supports the ``V4L2_MEMORY_MMAP`` streaming mode.
    * - ``V4L2_BUF_CAP_SUPPORTS_USERPTR``
      - 0x00000002
      - This buffer type supports the ``V4L2_MEMORY_USERPTR`` streaming mode.
    * - ``V4L2_BUF_CAP_SUPPORTS_DMABUF``
      - 0x00000004
      - This buffer type supports the ``V4L2_MEMORY_DMABUF`` streaming mode.
    * - ``V4L2_BUF_CAP_SUPPORTS_REQUESTS``
      - 0x00000008
      - This buffer type supports :ref:`requests <media-request-api>`.
    * - ``V4L2_BUF_CAP_SUPPORTS_ORPHANED_BUFS``
      - 0x00000010
      - The kernel allows calling :ref:`VIDIOC_REQBUFS` while buffers are still
        mapped or exported via DMABUF. These orphaned buffers will be freed
        when they are unmapped or when the exported DMABUF fds are closed.
    * - ``V4L2_BUF_CAP_SUPPORTS_M2M_HOLD_CAPTURE_BUF``
      - 0x00000020
      - Only valid for stateless decoders. If set, then userspace can set the
        ``V4L2_BUF_FLAG_M2M_HOLD_CAPTURE_BUF`` flag to hold off on returning the
        capture buffer until the OUTPUT timestamp changes.
    * - ``V4L2_BUF_CAP_SUPPORTS_MMAP_CACHE_HINTS``
      - 0x00000040
      - This capability is set by the driver to indicate that the queue supports
        cache and memory management hints. However, it's only valid when the
        queue is used for :ref:`memory mapping <mmap>` streaming I/O. See
        :ref:`V4L2_BUF_FLAG_NO_CACHE_INVALIDATE <V4L2-BUF-FLAG-NO-CACHE-INVALIDATE>`,
        :ref:`V4L2_BUF_FLAG_NO_CACHE_CLEAN <V4L2-BUF-FLAG-NO-CACHE-CLEAN>` and
        :ref:`V4L2_MEMORY_FLAG_NON_COHERENT <V4L2-MEMORY-FLAG-NON-COHERENT>`.
```

Return Value

On success 0 is returned, on error -1 and the `errno` variable is set appropriately. The generic error codes are described at the :ref:`Generic Error Codes <gen-errors>` chapter.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\linux-master\Documentation\userspace-api\media\v4l\[linux-master][Documentation][userspace-api][media][v4l]vidioc-reqbufs.rst, line 175); *backlink*

Unknown interpreted text role "ref".

EINVAL
: The buffer type (`type` field) or the requested I/O method (`memory`) is not supported.