

# VkDeviceMemory

VkDevice

VkBuffer

```
void vkGetBufferMemoryRequirements(  
    VkDevice device,  
    VkBuffer buffer,  
    VkMemoryRequirements* pMemoryRequirements  
);
```

VkImage

```
void vkGetImageMemoryRequirements(  
    VkDevice device,  
    VkImage image,  
    VkMemoryRequirements* pMemoryRequirements  
);
```

```
typedef struct VkMemoryRequirements {  
    VkDeviceSize size;  
    VkDeviceSize alignment;  
    uint32_t memoryTypeBits;  
} VkMemoryRequirements;
```

The bit positions represent the indices in `VkPhysicalDeviceMemoryProperties::memoryTypes`.

## VkMemoryAllocateInfo

```
sType = VK_STRUCTURE_TYPE_MEMORY_ALLOCATE_INFO;  
pNext = nullptr;  
allocationSize;  
memoryTypeIndex;
```

index in `VkPhysicalDeviceMemoryProperties::memoryTypes`

```
VkResult vkAllocateMemory(  
    VkDevice device,  
    const VkMemoryAllocateInfo* pAllocateInfo,  
    const VkAllocationCallbacks* pAllocator,  
    VkDeviceMemory* pMemory  
);
```

```
VkResult vkBindBufferMemory(  
    VkDevice device,  
    VkBuffer buffer,  
    VkDeviceMemory memory,  
    VkDeviceSize memoryOffset  
);
```

```
VkResult vkBindImageMemory(  
    VkDevice device,  
    VkImage image,  
    VkDeviceMemory memory,  
    VkDeviceSize memoryOffset  
);
```

```
VkResult vkMapMemory(  
    VkDevice device,  
    VkDeviceMemory memory,  
    VkDeviceSize offset,  
    VkDeviceSize size,  
    VkMemoryMapFlags flags, // 0  
    void** ppData  
);
```

```
void vkFreeMemory(  
    VkDevice device,  
    VkDeviceMemory memory,  
    const VkAllocationCallbacks* pAllocator  
);
```