Physical Devices

Vulkan: Overall Block Diagram

Vulkan: a More Typical (and Simplified) Block Diagram

Querying the Number of Physical Devices

Vulkan: Identifying the Physical Devices

Which Physical Device to Use, I
for( unsigned int i = 0; i < vpdmp.memoryHeapCount; i++ )
fprintf( FpDebug, "\n%d Memory Heaps:
", vpdmp.memoryHeapCount );
for( unsigned int i = 0; i < vpdmp.memoryTypeCount; i++ )
fprintf( FpDebug, "\n%d Memory Types:
", vpdmp.memoryTypeCount );

vkGetPhysicalDeviceMemoryProperties( PhysicalDevice, OUT &vpdmp );
VkPhysicalDeviceMemoryProperties vpdmp;

else if( integratedSelect >= 0 )
discreteSelect = i;
else
which = -1;

if( ( vmh.flags & VK_MEMORY_HEAP_DEVICE_LOCAL_BIT ) != 0 )
    fprintf( FpDebug, " DeviceLocal" );
else if( ( vmh.flags & VK_MEMORY_HEAP_HOST_VISIBLE_BIT ) != 0 )
    fprintf( FpDebug, " HostVisible" );
else if( ( vmh.flags & VK_MEMORY_HEAP_HOST_CACHED_BIT ) != 0 )
    fprintf( FpDebug, " HostCached" );
else if( ( vmh.flags & VK_MEMORY_HEAP_HOST_COHERENT_BIT ) != 0 )
    fprintf( FpDebug, " HostCoherent" );
else if( ( vmh.flags & VK_MEMORY_HEAP_DEVICE_LOCAL_BIT ) != 0 )
    fprintf( FpDebug, " DeviceLocal" );

if( discreteSelect >= 0 )
    PhysicalDevice = physicalDevices[discreteSelect];
else
    PhysicalDevice = physicalDevices[integratedSelect];

return VK_SHOULD_EXIT;

Realize this is a bit complex, but it's a way of integrating and discretely selecting physical devices in the context of physical device features.
uint32_t count = -1;
vkGetPhysicalDeviceQueueFamilyProperties(IN PhysicalDevice, &count, OUT (VkQueueFamilyProperties *)nullptr);
fprintf(FpDebug, "Found %d Queue Families:
", count);
VkQueueFamilyProperties *vqfp = new VkQueueFamilyProperties[count];
vkGetPhysicalDeviceQueueFamilyProperties(IN PhysicalDevice, &count, OUT vqfp);
for(unsigned int i = 0; i < count; i++) {
    fprintf(FpDebug, "\t%d: queueCount = %2d  ;   ", i, vqfp[i].queueCount);
    if((vqfp[i].queueFlags & VK_QUEUE_GRAPHICS_BIT) != 0)
        fprintf(FpDebug, " Graphics");
    if((vqfp[i].queueFlags & VK_QUEUE_COMPUTE_BIT) != 0)
        fprintf(FpDebug, " Compute ");
    if((vqfp[i].queueFlags & VK_QUEUE_TRANSFER_BIT) != 0)
        fprintf(FpDebug, " Transfer");
    fprintf(FpDebug, "\n");
}

Asking About the Physical Device's Queue Families

Found 3 Queue Families:
0: Queue Family Count = 16  ;   Graphics Compute Transfer
1: Queue Family Count =  2  ;   Transfer
2: Queue Family Count =  8  ;   Compute Transfer

Here's What I Got on the A6000's