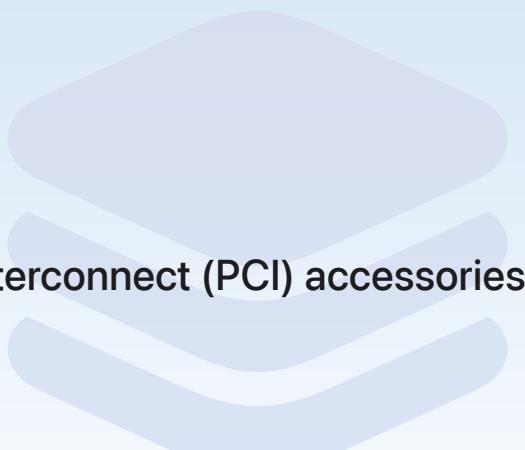


Framework

# PCI Driver Kit

Develop device drivers for Peripheral Component Interconnect (PCI) accessories.

DriverKit 19.0+ | macOS 11.1+



## Overview

Use the PCI Driver Kit framework to develop drivers that manage custom features on your Peripheral Component Interconnect (PCI) and PCI-Express hardware. When the system loads your custom PCI driver, it passes an [IOPCIDevice](#) object as the provider to your driver. Use that object to read and write the configuration and memory of your PCI hardware.

On macOS, use the [System Extensions](#) framework to install and upgrade your driver. On iPadOS, the system automatically discovers and upgrades drivers along with their host apps.

### Note

PCI Driver Kit is available on macOS for Intel and Apple Silicon devices, and on iPadOS for devices with an M-series chip.

## Topics

### Entitlements

`com.apple.developer.driverkit.transport.pci`

An array of PCI device descriptors that your custom driver supports.

### Samples

## DriverKit sample code

Explore projects that demonstrate how to write macOS device drivers with the DriverKit family of frameworks.

## Device Interface

### Creating Custom PCIe Drivers for Thunderbolt Devices

Create a DriverKit extension to support your Thunderbolt device's custom features.

## IOPCIDevice

A DriverKit provider object that manages access to your custom PCI hardware.

## Reference

### PCIDriverKit Enumerations

### PCIDriverKit Data Types

### PCIDriverKit Macros

## Macros

`kIOPCIACSCapabilitiesKey`

`kIOPCIAERCapabilitiesKey`

`kIOPCIExpressDeviceCapabilities2Key`

`kIOPCIExpressDeviceCapabilitiesKey`

`kIOPCIExpressLinkCapabilities2Key`

`kIOPCIExpressRootCapabilitiesKey`

`kIOPCIExpressSlotCapabilities2Key`

`kIOPCIFPBCapabilitiesKey`

`kIOPCIL1PMCapabilitiesKey`

`kIOPCIMSIMessageControlKey`

`kIOPCIMSIXMessageControlKey`

`kIOPCIPTMCapabilitiesKey`

`kIOPCIPowerManagementCapabilitiesKey`

## Enumeration Cases

kIOPCICapabilityIDAF  
kIOPCICapabilityIDEnhancedAllocation  
kIOPCICapabilityIDSATAConfiguration  
kIOPCIExpressCapabilityIDAMD  
kIOPCIExpressCapabilityIDATS  
kIOPCIExpressCapabilityIDAAlternateProtocol  
kIOPCIExpressCapabilityIDCAC  
kIOPCIExpressCapabilityIDDPA  
kIOPCIExpressCapabilityIDDPC  
kIOPCIExpressCapabilityIDDVSEC  
kIOPCIExpressCapabilityIDDataLinkFeature  
kIOPCIExpressCapabilityIDFRSQueueing  
kIOPCIExpressCapabilityIDHierarchyID  
kIOPCIExpressCapabilityIDLNR  
kIOPCIExpressCapabilityIDLaneMarginingRx  
kIOPCIExpressCapabilityIDMFVC  
kIOPCIExpressCapabilityIDMPCIe  
kIOPCIExpressCapabilityIDMRIOV  
kIOPCIExpressCapabilityIDMulticast  
kIOPCIExpressCapabilityIDNPEM  
kIOPCIExpressCapabilityIDPASID  
kIOPCIExpressCapabilityIDPL16GTs  
kIOPCIExpressCapabilityIDPL32GTs  
kIOPCIExpressCapabilityIDPMUX  
kIOPCIExpressCapabilityIDPRI

kIOPCIExpressCapabilityIDRCECEndpointAssociation  
kIOPCIExpressCapabilityIDRCInternalLinkCtrl  
kIOPCIExpressCapabilityIDRCLinkDeclaration  
kIOPCIExpressCapabilityIDReadinessTimeReporting  
kIOPCIExpressCapabilityIDResizableBAR  
kIOPCIExpressCapabilityIDRootComplexRegBlock  
kIOPCIExpressCapabilityIDSFI  
kIOPCIExpressCapabilityIDSPCIe  
kIOPCIExpressCapabilityIDSRIOV  
kIOPCIExpressCapabilityIDTPHRequester  
kIOPCIExpressCapabilityIDVC\_MFVCPresent  
kIOPCIExpressCapabilityIDVFResizableBAR  
kIOPCIExpressCapabilityIDVSEC  
kIOPCISlotStatusAttentionButtonPressed  
kIOPCISlotStatusCommandCompleted  
kIOPCISlotStatusDataLinkLayerStateChanged  
kIOPCISlotStatusElectromechanicalInterlockState  
kIOPCISlotStatusMRLSensorChanged  
kIOPCISlotStatusMRLSensorState  
kIOPCISlotStatusPowerFaultDetected  
kIOPCISlotStatusPresenceDetectChanged  
kIOPCISlotStatusPresenceDetectState