

OpenCore

Reference Manual (0.0~~2~~.3)

[2019.06.04]

6. Identifier
Type: plist string
Default value: Empty string
Description: Kext bundle identifier (e.g. `com.apple.driver.AppleHDA`) or `kernel` for kernel patch.
7. Limit
Type: plist integer
Default value: 0
Description: Maximum number of bytes to search for. Can be set to 0 to look through the whole kext or kernel.
8. Mask
Type: plist data
Default value: Empty data
Description: Data bitwise mask used during find comparison. Allows fuzzy search by ignoring not masked (set to zero) bits. Can be set to empty data to be ignored. Must equal to **Replace** in size otherwise.
9. MatchKernel
Type: plist string
Default value: Empty string
Description: Adds kernel driver to selected macOS version only. The selection happens based on prefix match with the kernel version, i.e. `16.7.0` will match macOS 10.12.6 and `16.` will match any macOS 10.12.x version.
10. Replace
Type: plist data
Default value: Empty data
Description: Replacement data of one or more bytes.
11. ReplaceMask
Type: plist data
Default value: Empty data
Description: Data bitwise mask used during replacement. Allows fuzzy replacement by updating masked (set to non-zero) bits. Can be set to empty data to be ignored. Must equal to **Replace** in size otherwise.
12. Skip
Type: plist integer
Default value: 0
Description: Number of found occurrences to be skipped before replacement is done.

6.6 Quirks Properties

1. AppleCpuPmCfgLock
Type: plist boolean
Default value: false
Description: Disables `PKG_CST_CONFIG_CONTROL (0xE2)` MSR modification in AppleIntelCPUPowerManagement.kext, commonly causing early kernel panic, when it is locked from writing.
Note: This option should avoided whenever possible. Modern firmwares provide **CFG Lock** setting, disabling which is much cleaner. More details about the issue can be found in [VerifyMsrE2](#) notes.
2. AppleXcpmCfgLock
Type: plist boolean
Default value: false
Description: Disables `PKG_CST_CONFIG_CONTROL (0xE2)` MSR modification in XNU kernel, commonly causing early kernel panic, when it is locked from writing (XCPM power management).
Note: This option should avoided whenever possible. Modern firmwares provide **CFG Lock** setting, disabling which is much cleaner. More details about the issue can be found in [VerifyMsrE2](#) notes.
3. [DisableIoMapper](#)
Type: [plist boolean](#)
Default value: [false](#)
Description: [Disables IOMapper support in XNU \(VT-d\), which may conflict with the firmware implementation.](#)

Note: This option is a preferred alternative to dropping DMAR ACPI table and disabling VT-d in firmware preferences, which does not break VT-d support in other systems in case they need it.

4. ExternalDiskIcons

Type: plist boolean

Default value: false

Description: Apply icon type patches to IOAHCIPort.kext to force internal disk icons for all AHCI disks.

Note: This option should avoided whenever possible. Modern firmwares usually have compatible AHCI controllers.

5. ThirdPartyTrim

Type: plist boolean

Default value: false

Description: Patch IOAHCIFamily.kext to force TRIM command support on AHCI SSDs.

Note: This option should avoided whenever possible. NVMe SSDs are compatible without the change. For AHCI SSDs on modern macOS version there is a dedicated built-in utility called **trimforce**.

6. XhciPortLimit

Type: plist boolean

Default value: false

Description: Patch various kexts (AppleUSBXHCI.kext, AppleUSBXHCIPCI.kext, IOUSBHostFamily.kext) to remove USB port count limit of 15 ports.

Note: This option should avoided whenever possible. USB port limit is imposed by the amount of used bits in locationID format and there is no possible way to workaround this without heavy OS modification. The only valid solution is to limit the amount of used ports to 15 (discarding some). More details can be found on AppleLife.ru.

7 Misc

7.1 Introduction

This section contains miscellaneous configuration entries for OpenCore behaviour that does not go to any other sections

7.2 Properties

1. Boot
Type: plist dict
Description: Apply boot configuration described in Boot Properties section below.
2. Debug
Type: plist dict
Description: Apply debug configuration described in Debug Properties section below.
3. Security
Type: plist dict
Description: Apply security configuration described in Security Properties section below.

7.3 Boot Properties

1. ConsoleMode
Type: plist string
Default value: Empty string
Description: Sets console output mode as specified with the WxH (e.g. 80x24) formatted string. Set to empty string not to change console mode. Set to **Max** to try to use largest available console mode.
2. ConsoleBehaviourOs
Type: plist string
Default value: Empty string
Description: Set console control behaviour upon operating system load.

Console control is a legacy protocol used for switching between text and graphics screen output. Some firmwares do not provide it, yet select operating systems require its presence, which is what **ConsoleControl** UEFI protocol is for.

When console control is available, OpenCore can be made console control aware, and and set different modes for the operating system booter (**ConsoleBehaviourOs**), which normally runs in graphics mode, and its own user interface (**ConsoleBehaviourUi**), which normally runs in text mode. Possible behaviours, set as values of these options, include:

- Empty string — Do not modify console control mode.
- **Text** — Switch to text mode.
- **Graphics** — Switch to graphics mode.
- **ForceText** — Switch to text mode and preserve it (requires **ConsoleControl**).
- **ForceGraphics** — Switch to graphics mode and preserve it (require **ConsoleControl**).

Hints:

- Unless empty works, firstly try to set **ConsoleBehaviourOs** to **Graphics** and **ConsoleBehaviourUi** to **Text**.
- On APTIO IV (Haswell and earlier) it is usually enough to have **ConsoleBehaviourOs** set to **Graphics** and **ConsoleBehaviourUi** set to **ForceText** to avoid visual glitches.
- On APTIO V (Broadwell and newer) **ConsoleBehaviourOs** set to **ForceGraphics** and **ConsoleBehaviourUi** set to **TextForceText** usually works [best](#).
- [On Apple firmwares ConsoleBehaviourOs set to Graphics and ConsoleBehaviourUi set to Text is supposed to work best](#).

Note: **IgnoreTextInGraphics** may need to be enabled for select firmware implementations.

3. ConsoleBehaviourUi
Type: plist string
Default value: Empty string