



# OpenCore

Reference Manual (~~0.7.9~~0.8.0)

[2022.03.08]

Older boards like ICH6 may not always have HPET setting in the firmware preferences, this option tries to force enable it.

2. **EnableVectorAcceleration**

**Type:** plist boolean

**Failsafe:** false

**Description:** Enable AVX vector acceleration of SHA-512 and SHA-384 hashing algorithms.

*Note: This option may cause issues on certain laptop firmwares, including Lenovo.*

3. **EnableVmx**

**Type:** plist boolean

**Failsafe:** false

**Description:** Enable Intel virtual machine extensions.

*Note:* Required to allow virtualization in Windows on some Mac hardware. VMX is enabled or disabled and locked by BIOS before OpenCore starts on most firmware. Use BIOS to enable virtualization where possible.

4. **DisableSecurityPolicy**

**Type:** plist boolean

**Failsafe:** false

**Description:** Disable platform security policy.

*Note:* This setting disables various security features of the firmware, defeating the purpose of any kind of Secure Boot. Do NOT enable if using UEFI Secure Boot.

5. **ExitBootServicesDelay**

**Type:** plist integer

**Failsafe:** 0

**Description:** Adds delay in microseconds after EXIT\_BOOT\_SERVICES event.

This is a very rough workaround to circumvent the **Still waiting for root device** message on some APTIO IV firmware (ASUS Z87-Pro) particularly when using FileVault 2. It appears that for some reason, they execute code in parallel to EXIT\_BOOT\_SERVICES, which results in the SATA controller being inaccessible from macOS. A better approach is required and Acidanthera is open to suggestions. Expect 3 to 5 seconds to be adequate when this quirk is needed.

6. **ForceOcWriteFlash**

**Type:** plist boolean

**Failsafe:** false

**Description:** Enables writing to flash memory for all OpenCore-managed NVRAM system variables.

*Note:* This value should be disabled on most types of firmware but is left configurable to account for firmware that may have issues with volatile variable storage overflows or similar. Boot issues across multiple OSes can be observed on e.g. Lenovo Thinkpad T430 and T530 without this quirk. Apple variables related to Secure Boot and hibernation are exempt from this for security reasons. Furthermore, some OpenCore variables are exempt for different reasons, such as the boot log due to an available user option, and the TSC frequency due to timing issues. When toggling this option, a NVRAM reset may be required to ensure full functionality.

7. **ForgeUefiSupport**

**Type:** plist boolean

**Failsafe:** false

**Description:** Implement partial UEFI 2.x support on EFI 1.x firmware.

This setting allows running some software written for UEFI 2.x firmware like NVIDIA GOP Option ROMs on hardware with older EFI 1.x firmware like MacPro5,1.

8. **IgnoreInvalidFlexRatio**

**Type:** plist boolean

**Failsafe:** false

**Description:** Some types of firmware (such as APTIO IV) may contain invalid values in the MSR\_FLEX\_RATIO (0x194) MSR register. These values may cause macOS boot failures on Intel platforms.