



OpenCore

Reference Manual (0.9.~~8~~.9)

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any, from `nvrn.fallback` are used instead. `Launchd.command` itself always copies the previous NVRAM settings to `fallback`, each time it saves new settings.

This strategy is used to work round the limitation that the `Launchd.command` script is not running, and therefore cannot save NVRAM changes (particularly default boot entry changes), during the second and subsequent restarts of the macOS installer.

In brief, this fallback strategy allows full or incremental OTA updates of recent macOS, which are started from within an existing macOS (with the `Launchd.command` script installed), to proceed without manual intervention.

However, for full installs, there can be more than one full restart back to the `macOS Installer` entry. In this case the fallback strategy will lose track of the correct startup item (i.e. `macOS Installer`) from the second reboot onwards. Equally, if installing to a drive other than the current default boot partition, this will not be automatically selected after the installer completes, as it would be when using non-emulated NVRAM. (This behaviour remains preferable to not having the fallback strategy, in which case a `macOS Installer` entry would be continually recreated in the picker menu, even once it no longer exists).

In both the above two cases it is recommended to use the following settings, to make it easy to manually control which boot entry is selected during the installer process:

- Set `ShowPicker=true`.
- Set `Timeout=0`.
- Set `DisableWatchdog=true`.
- If possible, start from a situation where there are no other pending `macOS Installer` entries in the boot menu (to avoid potential confusion as to which is relevant).

The first reboot should correctly select `macOS Installer`. For second and subsequent reboots, if a `macOS Installer` entry is still present it should be manually selected (using just Enter, not CTRL+Enter). Once a `macOS Installer` entry is no longer present, the entry for the new OS will still be automatically selected if it was the previous boot default. If not, it should be manually selected (at this point, CTRL+Enter is a good idea as any final remaining installation restarts will be to this entry).

Note 1: When using emulated NVRAM but not installing from within an existing installed macOS (i.e. when installing from within macOS Recovery, or from an installation USB), please refer to this forum post (in Russian) for additional options.

Note 2: After upgrading from an earlier macOS version to macOS Sonoma, the `Launchd.command` script should be reinstalled, as a different strategy is required in order for NVRAM to be saved successfully.

Note 3: In macOS Sonoma the following additional constraints apply to the ESP partition on which OpenCore is installed, in order for the `Launchd.command` script to work successfully:

- It must not be set to automount.
- It must be unmounted again before shutdown or restart if it was manually mounted.

11.11 Properties

1. APFS

Type: plist dict

Description: Provide APFS support as configured in the APFS Properties section below.

2. AppleInput

Type: plist dict

Description: Configure the re-implementation of the Apple Event protocol described in the AppleInput Properties section below.

3. Audio

Type: plist dict

Description: Configure audio backend support described in the Audio Properties section below.

Unless documented otherwise (e.g. `ResetTrafficClass`) settings in this section are for UEFI audio support only (e.g. OpenCore generated boot chime and audio assist) and are unrelated to any configuration needed for OS audio support (e.g. `AppleALC`).