



# MultiBeast

MultiBeast is an all-in-one post-installation utility designed to enable boot from a hard drive. It also features a collection of drivers and customization options.



This document will reference all of the features of MultiBeast, as described inside the app itself. Please read all of the descriptions carefully. You may run MultiBeast as often as you like, but keep in mind that it will not uninstall items, just overwrite them.

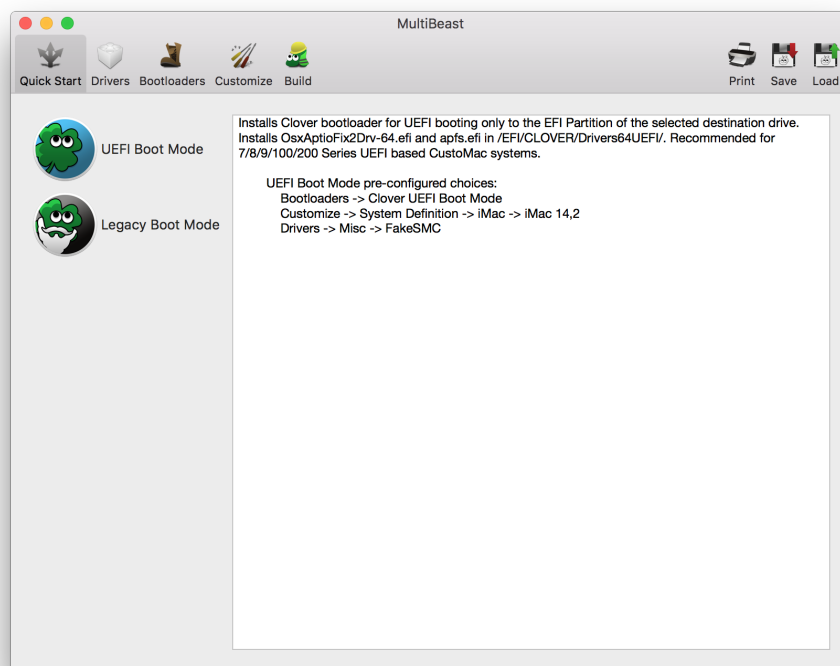
**tonymacx86 & MacMan**  
[www.tonymacx86.com](http://www.tonymacx86.com)

**v12.1**



# How to Use MultiBeast

1. Click **Quick Start** to choose Bootloader Configuration
2. Click **Drivers** for Audio and Network options
3. Click **Customize** for further options
4. Click **Print** or **Save** to back up your configuration
5. Click **Build** then **Install**
6. Restart computer to complete installation



Thanks to the Clover team, [netkas](#), Project OS X, kozlek, toleda, Lnx2Mac, fIAKed, cmf, Shailua, the candle, Henties, RehabMan, Zenith432, Mieze and hnak for their contributions that make this tool possible. Additional thanks to the tonymacx86 community for their testing and contributions to this work. Special thanks to all of the tonymacx86.com mods.

## Contains Clover 5.0 r5107

Clover is an open source bootloader project based on different projects: Clover, rEFIt, XNU, VirtualBox. Supports Fat32, HFS+, APFS, ESP. Copyright © 2019 CloverHackyColor. Source and official downloads are available [here](#).

## Developers:

Slice, with help of Kabyl, usr-sse2, jadran, Blackosx, dmazar, STLVNUB, pcj, apianti, JrCs, pene, FrodoKenny, skoczy, ycr.ru, Oscar09, xsmile, SoThOr, rehabman, Download-Fritz, Zenit432, cecekpawon...

## Source code credits to:

Intel, Apple, Oracle, Chameleon, rEFIt and Xom. Copyright © 2012-2020

**MultiBeast concept and design by tonymacx86, MacMan, and adamsmasher.**  
**MultiBeast user interface, architecture, and development by Rob Wallace.**



## Quick Start

Quick Start will load a pre-built configuration based on which option is chosen. If you don't want to use any of these pre-built options, you can build your own by selecting a bootloader, theme and kexts.

## Bootloader Configurations

### UEFI Boot Mode

Installs Clover bootloader for UEFI booting only to the EFI Partition of the selected destination drive. Installs AptioMemoryFix.efi and ApfsDriverLoader-64.efi in /EFI/CLOVER/drivers/UEFI/. Recommended for 7/8/9/100/200/300 Series UEFI based CustoMac systems.

UEFI Boot Mode pre-configured choices:

Bootloaders -> Clover UEFI Boot Mode  
Customize -> System Definition -> iMac -> iMac14,2  
Drivers -> Misc -> VirtualSMC



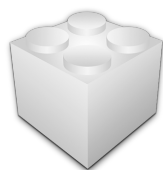
### Legacy Boot Mode

Installs Clover bootloader in Legacy mode to the EFI System Partition of the selected drive. Adds ACPI/DSDT/Fixes/AddDTGP=YES, ACPI/DSDT/Fixes/FixHDA=YES, ACPI/DSDT/Fixes/FixHPET=YES, ACPI/DSDT/Fixes/FixIPIC=YES and ACPI/DSDT/Fixes/FixUSB=YES to CustoMac default config.plist. Recommended for 5/6 Series BIOS based CustoMac systems.

Legacy Boot Mode pre-configured choices:

Bootloaders -> Clover Legacy Boot Mode  
Customize -> System Definition -> iMac -> iMac14,2  
Drivers -> Misc -> VirtualSMC



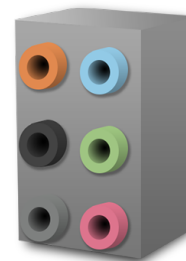


## Drivers

Drivers provide additional functionality to the operating system. The drivers contained here provide either enhanced hardware support or are mandatory for non-DSDT based systems. Be sure to read the descriptions carefully before installation.

### Audio

Collection of kexts to enable the onboard Audio on your system. Make sure to read the descriptions carefully and only install the correct files for your audio codec.



#### AppleALC

Enables native macOS HD audio for unsupported codecs without any filesystem modifications by vit9696. Installs Lilu.kext and AppleALC.kext to /Volumes/EFI/EFI/CLOVER/kexts/Other.

#### Optional 3 Port (5.1) Audio

Optional for 3 port audio layouts. Remaps audio input and output ports for 5.1 analog support. Adds Devices/Audio/Inject=2 to /Volumes/EFI/EFI/CLOVER/config.plist.

#### Optional 3 Port (Native) Audio

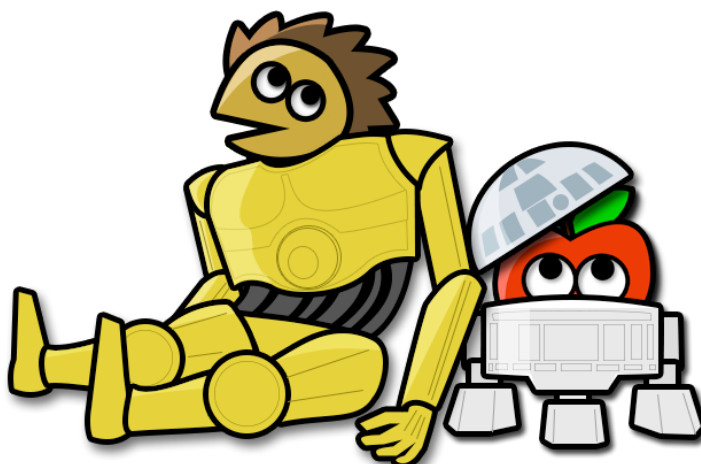
Optional for 3 port audio layouts. Remaps audio input and output ports for analog support. Adds Devices/Audio/Inject=3 to /Volumes/EFI/EFI/CLOVER/config.plist.

#### VoodooHDA

Enables audio for most codecs. Uses VoodooHDA which is an open source audio driver for devices compliant with the Intel High Definition Audio (HDA) specification, based primarily on code from the FreeBSD hdac driver. It is intended as an Intel-only replacement for AppleHDA. Enables sound without DSDT patching. Click the triangle to expand and then choose the appropriate version.

#### VoodooHDA 2.8.6 / 2.8.7 / 2.8.8 / 2.8.9 / 2.9.1

Installs VoodooHDA.kext in /Volumes/EFI/EFI/CLOVER/kexts/Other. Also installs VoodooHDA.prefPane in /Library/PreferencePanels, VoodooHdaSettingsLoader.app in /Applications and getdump in /usr/local/bin.





## Disk

Collection of kexts that provide enhanced hardware support for optical and disk drives.

### 3rd Party SATA

Provides support for the ASMedia ASM1061, JMicron 36x (aka GSATA) and Marvell 88SE912x, 88SE9172 and 88SE9230 SATA controllers. All drives connected to these ports show on the desktop as Internal and can NOT be hot swapped. Installs AHCI\_3rdParty\_SATA.kext in /Volumes/EFI/EFI/CLOVER/kexts/Other.



### 3rd Party eSATA

Provides support for the ASMedia ASM1061, JMicron 36x (aka GSATA) and Marvell 88SE912x, 88SE9172 and 88SE9230 SATA controllers. All drives connected to these ports show on the desktop as External and can be hot swapped. Installs AHCI\_3rdParty\_eSATA.kext in /Volumes/EFI/EFI/CLOVER/kexts/Other.

### Intel Generic AHCI SATA

Changes display of Generic AHCI Controller in System Profiler for the Intel 200 Series, X79, X99 and some Intel 9 Series SATA controllers to the actual chipset name. All drives connected to these ports show on the desktop as Internal. Installs AHCI\_Intel\_Generic\_SATA.kext in /Volumes/EFI/EFI/CLOVER/kexts/Other.

## Misc

Collection of miscellaneous kexts that provide enhanced hardware support. Be sure to read the descriptions carefully before installation.

### VirtualSMC

VirtualSMC.kext is the only absolutely mandatory kext required for booting the system. Advanced Apple SMC emulator from vit9696. Installs VirtualSMC.kext in /Volumes/EFI/EFI/CLOVER/kexts/Other.

### VirtualSMC Plugins

Installs VirtualSMC plugins SMCPProcessor.kext and SMCSuperIO.kext in /Volumes/EFI/EFI/CLOVER/kexts/Other. These plugins allow software access to motherboard hardware monitors.

### VirtualSMC HWMonitorSMC2 Application

Hardware Monitoring application HWSensors branch based on FakeSMC-3.x. Requires VirtualSMC Motherboard Plugins. Installs /Applications/HWMonitorSMC2.app.

### NullCPUPowerManagement

Disables AppleIntelCPUPowerManagement.kext to prevent kernel panic without proper HPET DSDT edits. Installs NullCPUPowerManagement.kext in /Volumes/EFI/EFI/CLOVER/kexts/Other.

### VoodooTSCSync

VoodooTSCSync.kext synchronizes the Timer Stamp Counter (TSC) on x86/Intel®64 CPUs. Only necessary for LGA2011 CPUs. Rehabman's branch of Cosmosis Jones' VoodooTSCSync. Installs VoodooTSCSync.kext in /Volumes/EFI/EFI/CLOVER/kexts/Other.



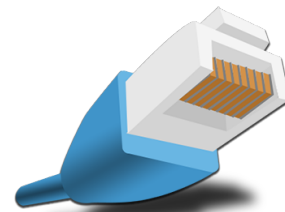
# Network

Collection of kexts to fully enable specific Ethernet controllers.

## Aquantia

### Aquantia AQC107 Support

Adds patch for AppleEthernetAquantiaAqtion to allow for recognition of unsupported Aquantia AQC107 cards to /Volumes/EFI/EFI/CLOVER/config.plist.



## Atheros

### AtherosE2200Ethernet

Mieze's driver based on Johannes Berg's alx driver and RealtekRTL811 for the Killer E2200 controller. Installs AtherosE2200Ethernet in /Volumes/EFI/EFI/CLOVER/kexts/Other.

## Intel

### AppleIntelE1000e

Enables Intel 825xx ethernet controllers. hnak's port of the e1000.sourceforge.net Intel Wired Ethernet for Linux driver. Installs AppleIntelE1000e.kext in /Volumes/EFI/EFI/CLOVER/kexts/Other.

### AppleIGB

Enables Intel 82575, 82576, 82580, dh89xxcc, i350, i210 and i211 ethernet controllers. hnak's port of the Intel igb ethernet driver for Linux. Installs AppleIGB.kext in /Volumes/EFI/EFI/CLOVER/kexts/Other.

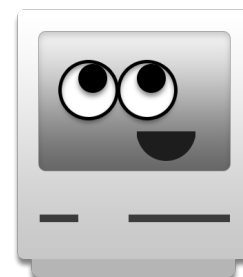
### IntelMausiEthernet

Mieze's OS X driver for Intel onboard LAN based on Linux source. Latest version adds support for Coffee Lake systems. Installs IntelMausiEthernet.kext in /Volumes/EFI/EFI/CLOVER/kexts/Other.

## Realtek

### RealtekRTL8111

Mieze's port of the Realtek Linux v8.041.00 driver. Installs RealtekRTL8111.kext in /Volumes/EFI/EFI/CLOVER/kexts/Other.



# USB

## 3rd Party USB 3.0

Enables 3rd Party USB 3.0 controller support. Installs GenericUSBXHCI.kext to /Volumes/EFI/EFI/CLOVER/kexts/Other.

## 7/8/9 Series USB Support

Enables full USB 2.0 and 3.0 support on 7/8/9 Series motherboards. Installs FakePCIID.kext and FakePCIID\_XHCIMux.kext to /Volumes/EFI/EFI/CLOVER/kexts/Other.

## Remove XHCI USB Port Limit

Adds three patches created by PMHeart to IOUSBHostFamily and AppleUSBXHCI to remove XHCI USB Port Limit to /Volumes/EFI/EFI/CLOVER/config.plist. Removes previous increase port limit patch.

## USBInjectAll

Rehabman's USB device injector. May be required for UEFI motherboards that use uncommon XHCI device IDs or don't enable all XHCI ports in DSDT/SSDT. Installs USBInjectAll.kext in /Volumes/EFI/EFI/CLOVER/kexts/Other.



# Bootloaders

Install Clover to make your drive bootable. Includes tonymacx86 theme and standard config.plist.

## Clover UEFI Boot Mode

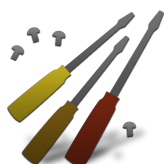
Installs Clover bootloader for UEFI booting only to the EFI Partition of the selected destination drive. Installs AptioMemoryFix.efi and ApfsDriverLoader.efi in /EFI/CLOVER/drivers/UEFI/. Recommended for 7/8/9/100/200/300 Series UEFI based CustoMac systems.

## Clover UEFI Boot Mode + Emulated NVRAM

Installs Clover bootloader for UEFI booting only to the EFI System Partition of the selected destination drive. Installs OsxAptioFix3Drv.efi, EmuVariableUefi.efi and ApfsDriverLoader.efi in /EFI/CLOVER/drivers/UEFI/. Installs Clover rc scripts files in /etc, ~/Library/Application Support/Clover and ~/Library/LaunchDaemons. Required for support of Apple Messages on 7/8/9/100/200/300 Series UEFI based CustoMac systems that don't support native NVRAM.

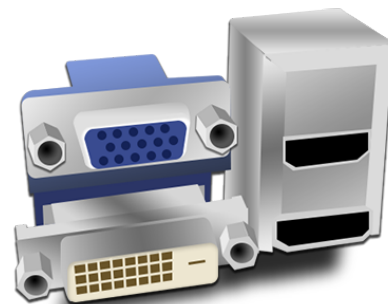
## Clover Legacy Boot Mode

Installs Clover bootloader in Legacy mode to the EFI System Partition of the selected drive. Installs ApfsDriverLoader.efi in /EFI/CLOVER/drivers/BIOS/. Adds ACPI/DSDT/Fixes/AddDTGP=YES, ACPI/DSDT/Fixes/FixHDA=YES, ACPI/DSDT/Fixes/FixHPET=YES, ACPI/DSDT/Fixes/FixIPIC=YES and ACPI/DSDT/Fixes/FixUSB=YES to CustoMac default config.plist. Recommended for 5/6 Series BIOS based CustoMac systems.



## Customize

A collection of boot time configuration files and system customization options.



## Graphics Configuration

Choose from the following additional graphics configurations.

### Core Graphics Fixup AKA WhateverGreen

Provides various patches necessary for certain AMD/Intel/Nvidia GPUs by vit9696. Installs Lilu.kext and WhateverGreen.kext to /Volumes/EFI/EFI/CLOVER/kexts/Other.

### Intel HD 630 (Coffee Lake)

Fixes Intel HD 630 (Coffee Lake) graphics issues on desktop 300 Series systems with DVI ports. Sets ig-platform-id to 0x3E9B0007 in /Volumes/EFI/EFI/CLOVER/config.plist.

### Inject ATI

For desktop systems with older ATI graphics cards such as ATI Radeon 4xxx. Adds Graphics/Inject/ATI=YES to CustoMac Default /Volumes/EFI/EFI/CLOVER/config.plist.

### Inject NVIDIA

For desktop systems with older NVIDIA graphics cards such as GeForce 8xxx, 9xxx, 2xx, 4xx, 610, and 630. Adds Graphics/Inject/NVIDIA=YES to CustoMac Default /Volumes/EFI/EFI/CLOVER/config.plist.





## SSDT Options

Optimized system/CPU specific SSDTs.

### Z390 Series NVRAM Support

Acidanthera's SSDT that restores native NVRAM support on Z390 motherboards. Installs SSDT-PMC.aml in /Volumes/EFI/EFI/CLOVER/ACPI/patched/.



### Sandy Bridge Core i5

Optimized SSDT supporting Sandy Bridge Core i5 CPUs with a maximum Turbo Boost clock of 3.8 GHz. Installs SSDT-SB-i5.aml in /Volumes/EFI/EFI/CLOVER/ACPI/patched/.

### Sandy Bridge Core i7

Optimized SSDT supporting Sandy Bridge Core i7 CPUs with a maximum Turbo Boost clock of 3.9 GHz. Installs SSDT-SB-i7.aml in /Volumes/EFI/EFI/CLOVER/ACPI/patched/.

### Sandy Bridge Core i5/i7 Overclocked

Optimized SSDT supporting Sandy Bridge Core i5 or Core i7 CPUs overclocked up to 4.2 Ghz. Installs SSDT-SB-OC.aml in /Volumes/EFI/EFI/CLOVER/ACPI/patched/.

## System Definitions

Updates SMBIOS in /Volumes/EFI/EFI/CLOVER/config.plist to identify your system as the chosen Mac model with a valid serial number. iMac14,2 is installed by default QuickStart installations, and is the general recommendation.

### Mac Pro, iMac, iMac Pro, Mac mini

Identifies your system as the chosen Mac model with a valid serial number.







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Please consider a [contribution](#) to support further MultiBeast development. Thanks in advance!

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