

## Installing Hackintosh Mojave on my Asus Maximus Hero X

### Hardware list:

Asus Maximus Hero XI motherboard

Intel Z390 ATX Gaming motherboard with M.2 heatsink, Aura Sync RGB LED, DDR4 4400MHz, 802.11ac Wi-Fi, dual M.2, SATA 6Gb/s, and USB 3.1 Gen 2.

Intel I7 8700K Processor

Samsung 500GB 860 EVO SATA III Internal SSD

Corsair Venegeance LPX 16GB (2\*8GB) 3000mzh Ram

Asus Radeon RX580 8G Graphic Card

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### BIOS Settings

#### Advanced/Platform Misc Configuration

PCI Express Native Power Management	Disabled
<b>PCH-PCI Express</b>	
PCH DMI ASPM	Disabled
ASPM 0	Disabled
L1 Substates	Disabled
PCI Express Clock Gating	Disabled
<b>SA-PCI Express</b>	
DMI Link ASPM Control	Disabled
PEG-ASPM	Disabled
Software Guard Extension (SGX)	Software Controled
Tcc Offset Time Window	Auto
Hardware Prefetcher	Enabled
Adjacent Cache Line Prefetch	Enabled
Intel (VMX) Virtualization Tech	Disabled
Active Processor Cores	Enabled
Thermal Monitor	Enabled
<b>CPU- Power Management Control</b>	
Boot performance mode	Auto

Intel (R) SpeedStep(tm)	Auto
Intel (R) Speed Shift Tech	Auto
Turbo Mode	Enabled
CPU C-States	Disabled
<b>CFG Lock</b>	
VT-d	Disabled
Above 4G Decoding	Disabled
<b>Memory Configuration</b>	
Memory Remap	Enabled
<b>Graphic Configuration</b>	
Primary Display	Auto
IGPU Multi Monitor	Enabled
DVMT Pre-Allocated	128M
RC6(Render Standby)	Enabled
<b>DMI/OPI Configuration</b>	
DMI	X4 Gen3 (not changable)
DMI Max Link Speed	Auto
<b>PEG Port Configuration</b>	
PCIEX16_1	x16
PCIEX16_1 Link Speed	Auto
PCIEX16_2	Not Present
PCIEX16_2 Link Speed	Auto
<b>Advanced/PCH Configuration</b>	
PCH SKU	Z390
PCI Express Configuration	
IOAPIC 24-119 Entries	Enabled
<b>Advanced/PCH Configuration/PCI Express Configuration</b>	
PCI Express Configuration	
PCIe Speed	Auto
<b>Advanced/PCH Storage Configuration</b>	
PCH Storage Configuration	
SATA Controller(s)	Enabled
Sata Mode Selection	AHCI
Aggressive LPM Support	Disabled
SMART Self Test	ON
<b>Advanced/PCH-FW Configuration</b>	
TPM Device Selection	Discrete TPM

### **Advanced/Onboard Devices Configuration**

HD Audio	Enabled
Intel Lan Controller	Enabled
Intel PXE Option ROM	Disabled
LED Lighting	
When System is in working state	All on
Q-Code LED Function	POST Code Only
When system is in sleep, hibern,,,	All on
M.2_1 Configuration	Auto
PCIEX16_3 Bandwith	X2 Mode
Hyper M.2 X16: Disable,Enable	Disabled
USB power delivery in soft Off State (S5)	Enabled
Back I/O USB Type C Power Mode	Auto
Connectivity Mode (Wi-Fi & Bluetooth )	Enable

### **Advanced/APM Configuration**

ErP Ready	Disable
Restore AC Power Loss	Power Off
Power On By PCI-E	Disabled
Power On By RTC	Disabled

### **Advanced/Pet Subsystem Settings**

SR-IOV Support	Disabled
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### **Advanced/USB Configuration**

USB Configuration	
USB Controllers	
1 XHCI	
USB Device	
1 Drive, 1 Keyboard, 1 Mouse, 2 Hubs	
Legacy USB Support	Enabled
XHCI Hand-Off	Disabled
Mass Storage Devices	
SanDisk	Auto

### **Advanced/USB Configuration/USB Port Disable Override**

All	Enabled
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### **Advanced/Network Stack Configuration**

Network Stack	Disabled
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### **Boot/Boot Configuration**

Fast Boot	Disabled
Boot Logo Display	Enabled

Post Delay Time	3sec
Bootup Numlock State	On
Wait for !F1! If Error	Enabled
Option ROM Message	Force BIOS
Interrupt 19 Capture	Disabled
Setup Mode	Advanced Mode

#### **Boot/CSM (Compatability Support Module)**

Launch CSM	Disabled
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#### **Boot/Secure Boot**

Secure Boot State	Enabled
Platform Key (PK) State	Unloaded
OS Type	Other OS

#### **Secure Boot**

AMI Native NVME Driver Support	ON
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#### Install

1 Youtube Video : Build a Perfect Hackintosh -Beginners Morgonaut.	Tutorial by
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#### Problems:

Installer got stuck at 2min left with frozen mouse and	keyboard
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Let it hang there for few minutes Restart and choose to start from the Preboot Install Mojave Partition, that got me trough the installer.	second half of the
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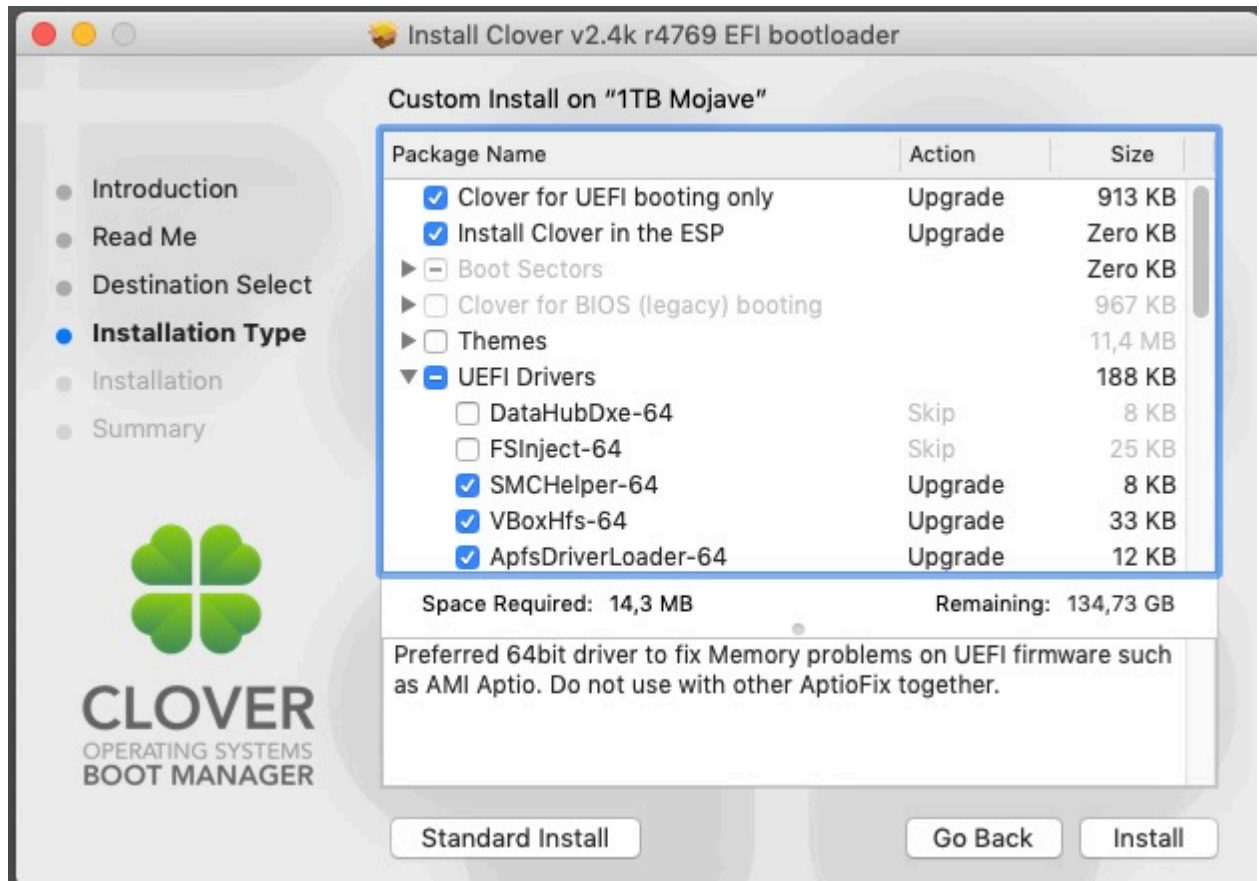
Had to use "File Vault Preboot partition next startup"  
then format the internal SSD ( Mojave ) and Carbon Copy  
Clone the the File Vault Install Mojave Partition to a  
Normal old Hard Disk, Install Clover Bootloader on that disk  
Then startup again on THAT Disk, format the Internal SSD,

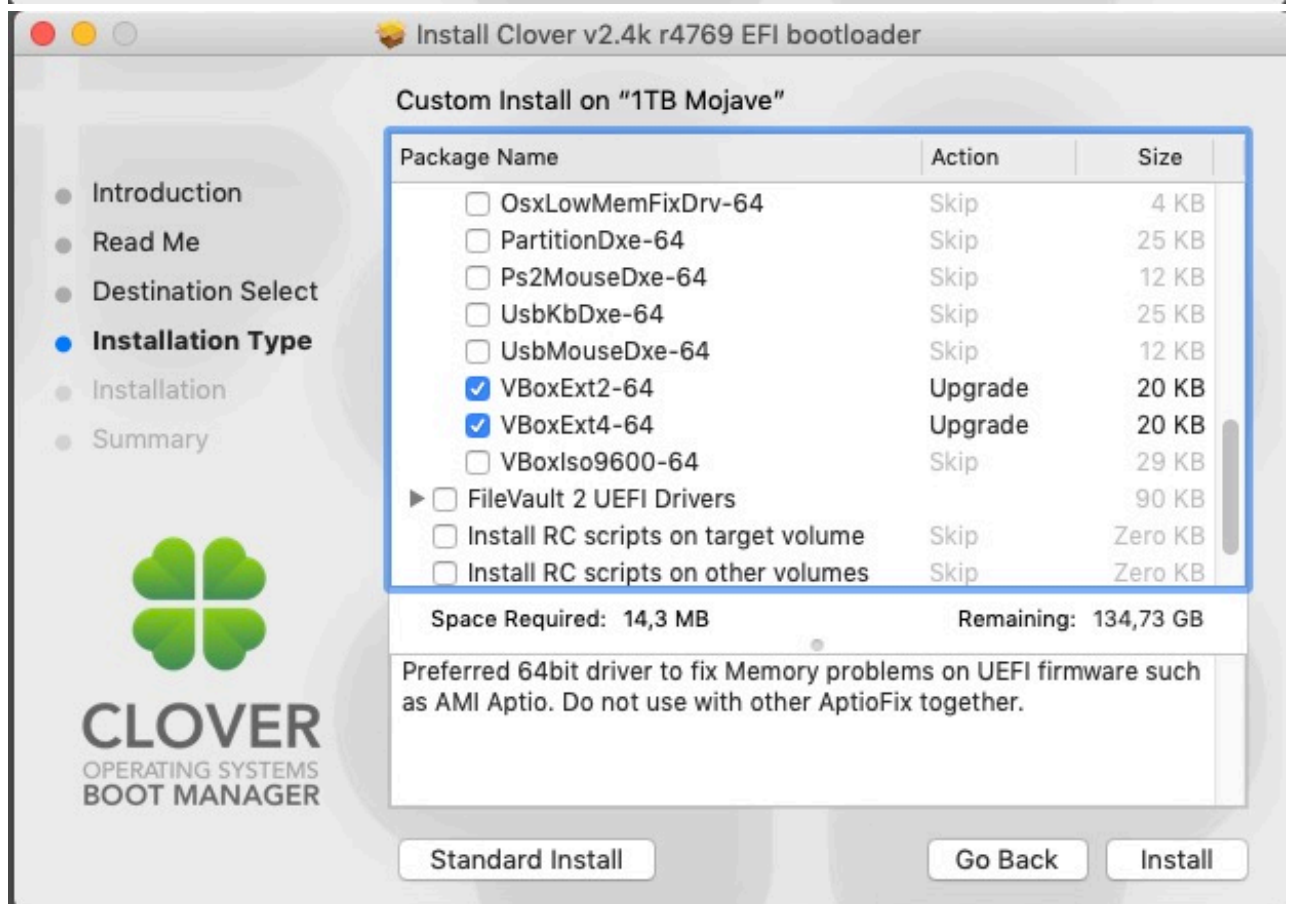
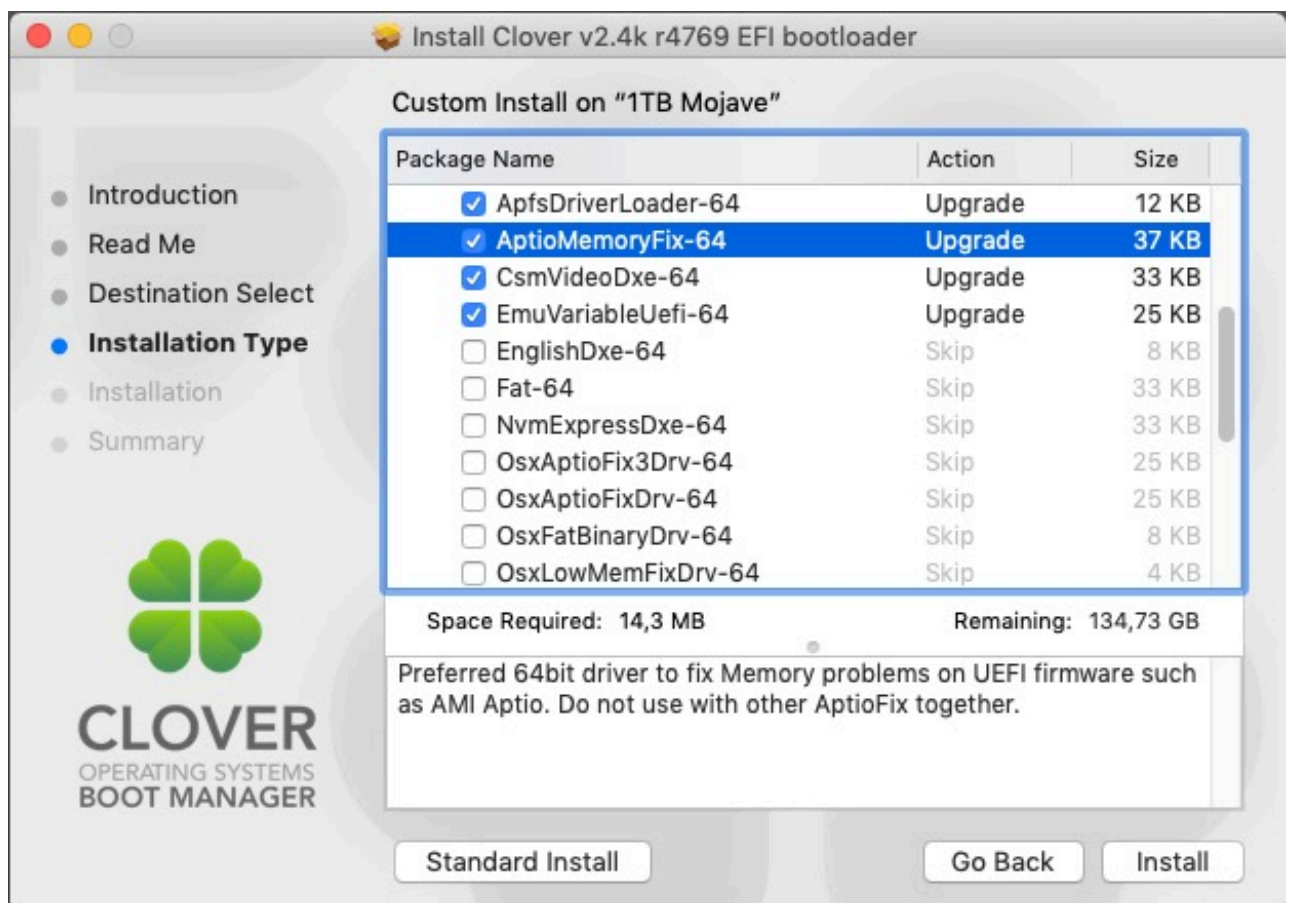
Then again use CCC to copy the old Hard Disk with Mojave

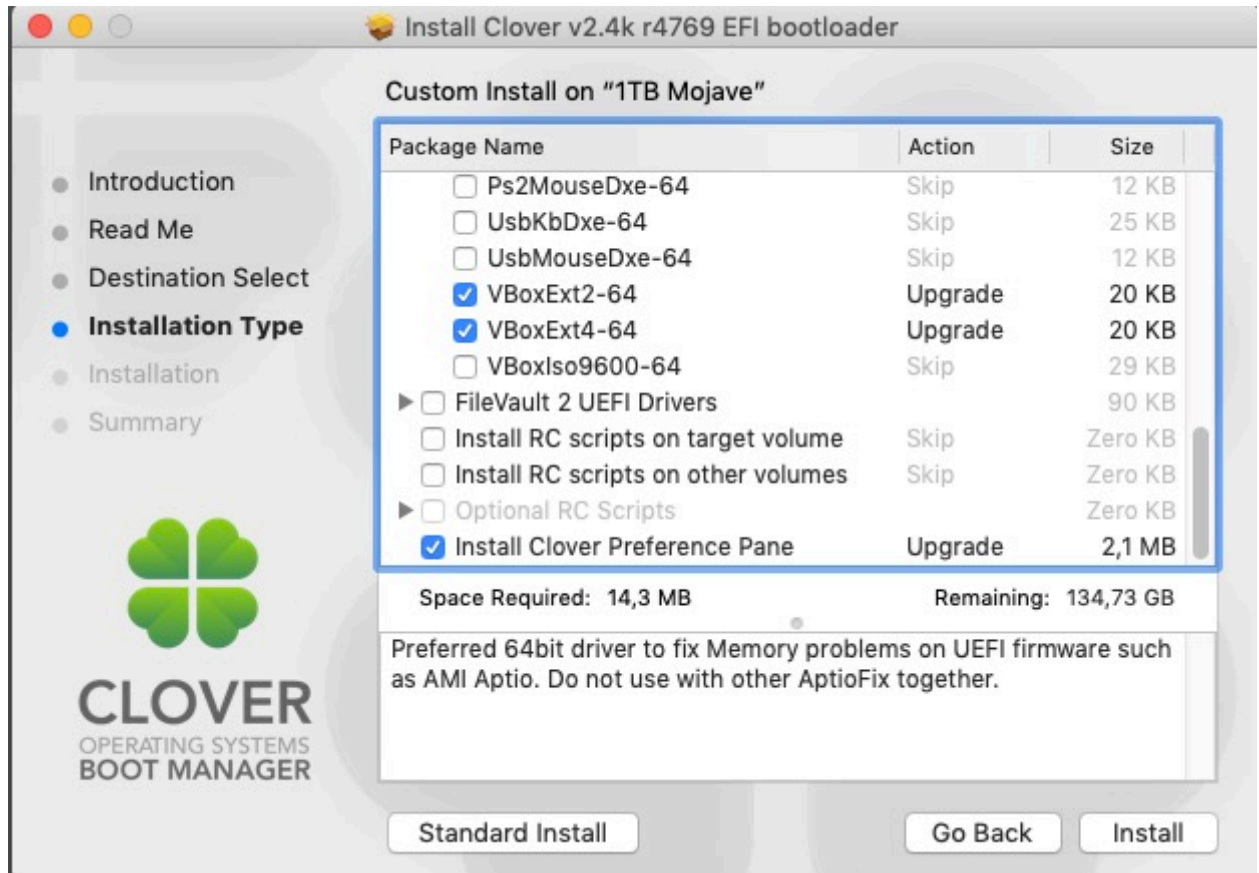
onto the Internal SSD.

Open Clover Bootloader and install to your Internal Mojave disk.

Choose these Options





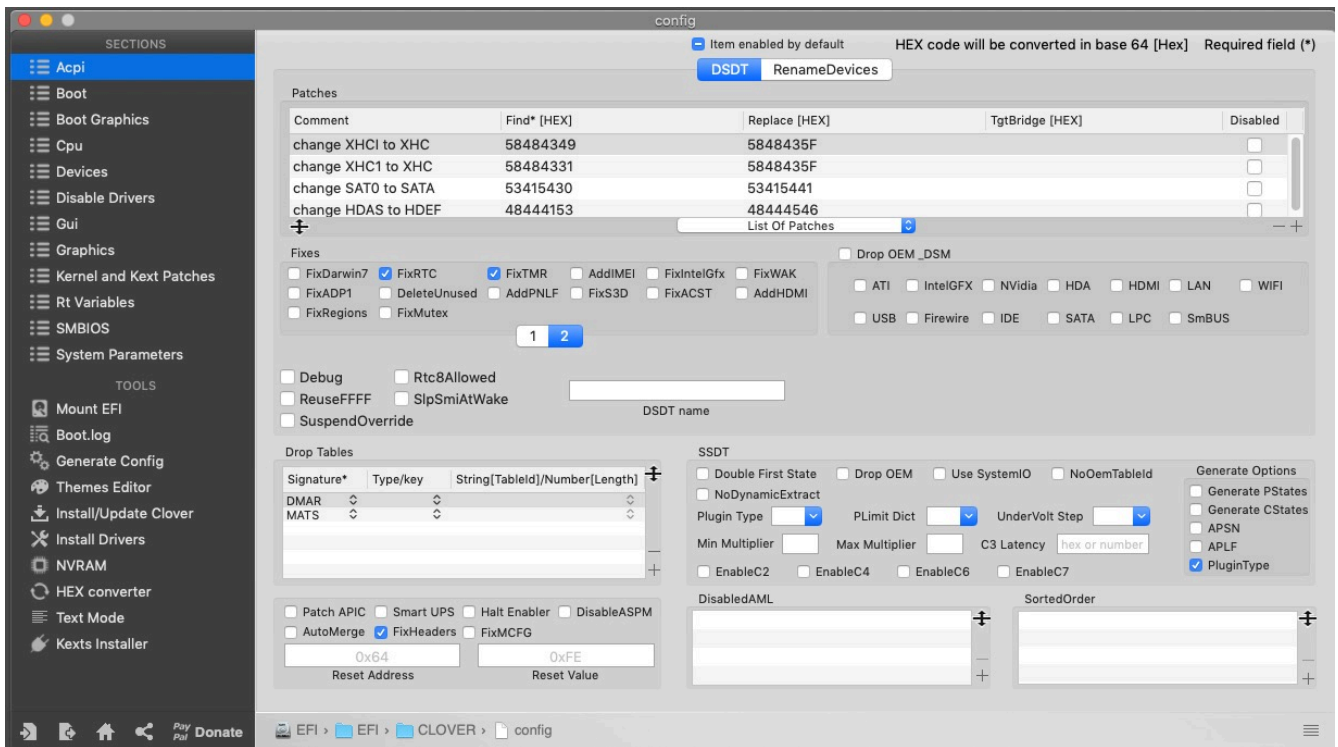
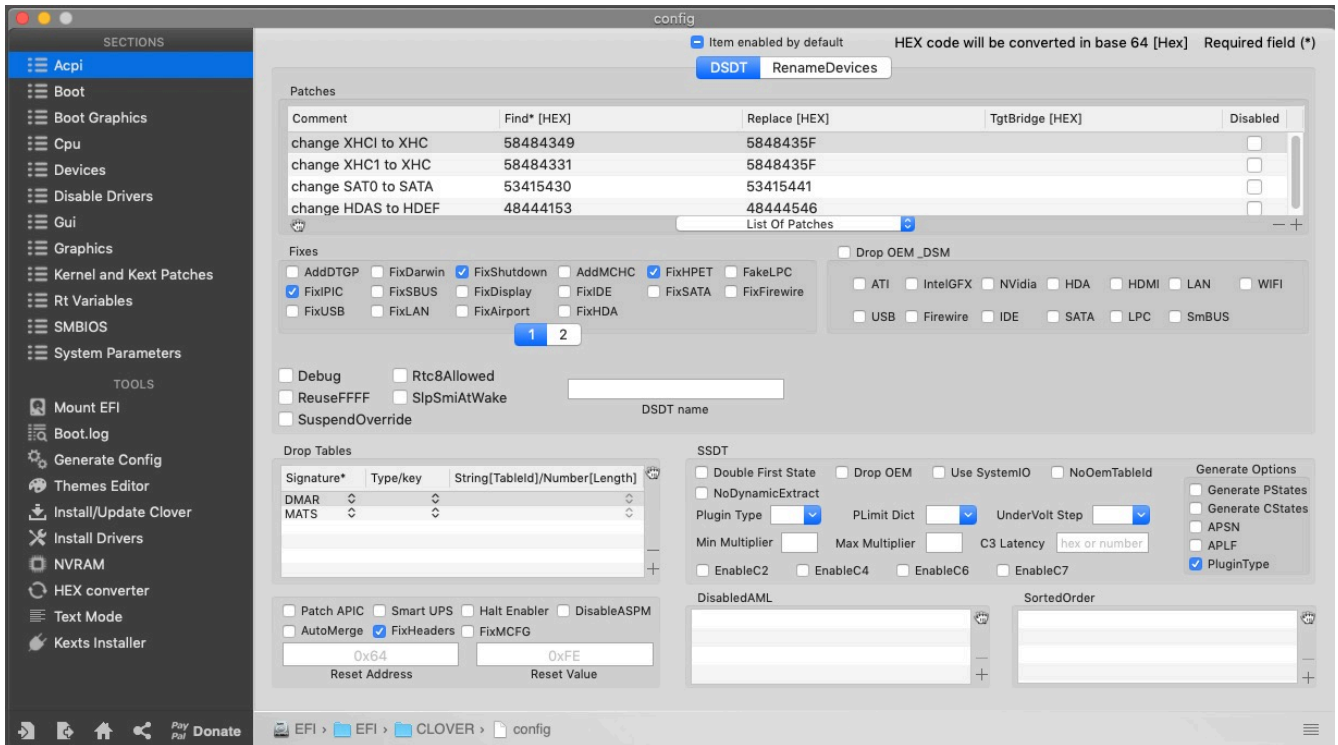


ApfsDriverLoader-64 is probably needed if you want to use the APFS format for your disk ( I used Mac OS Extended with GUID Partition Map ).

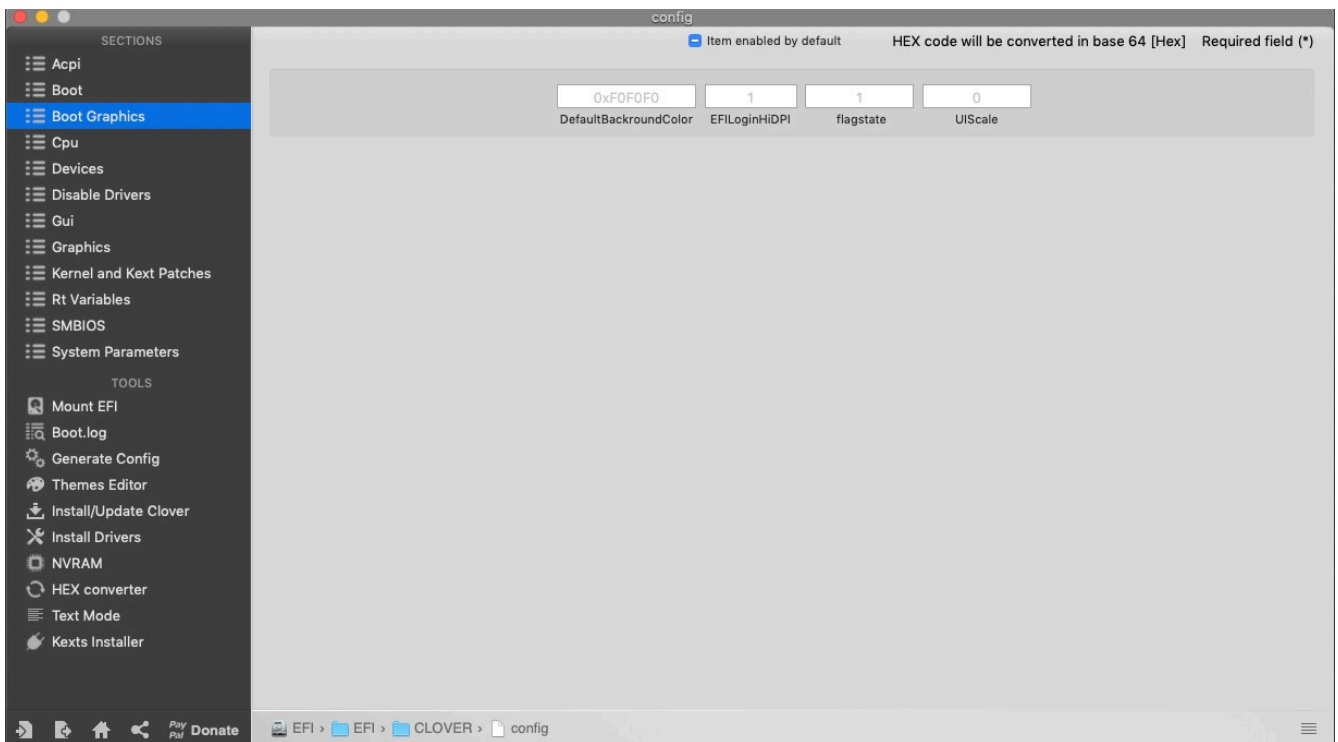
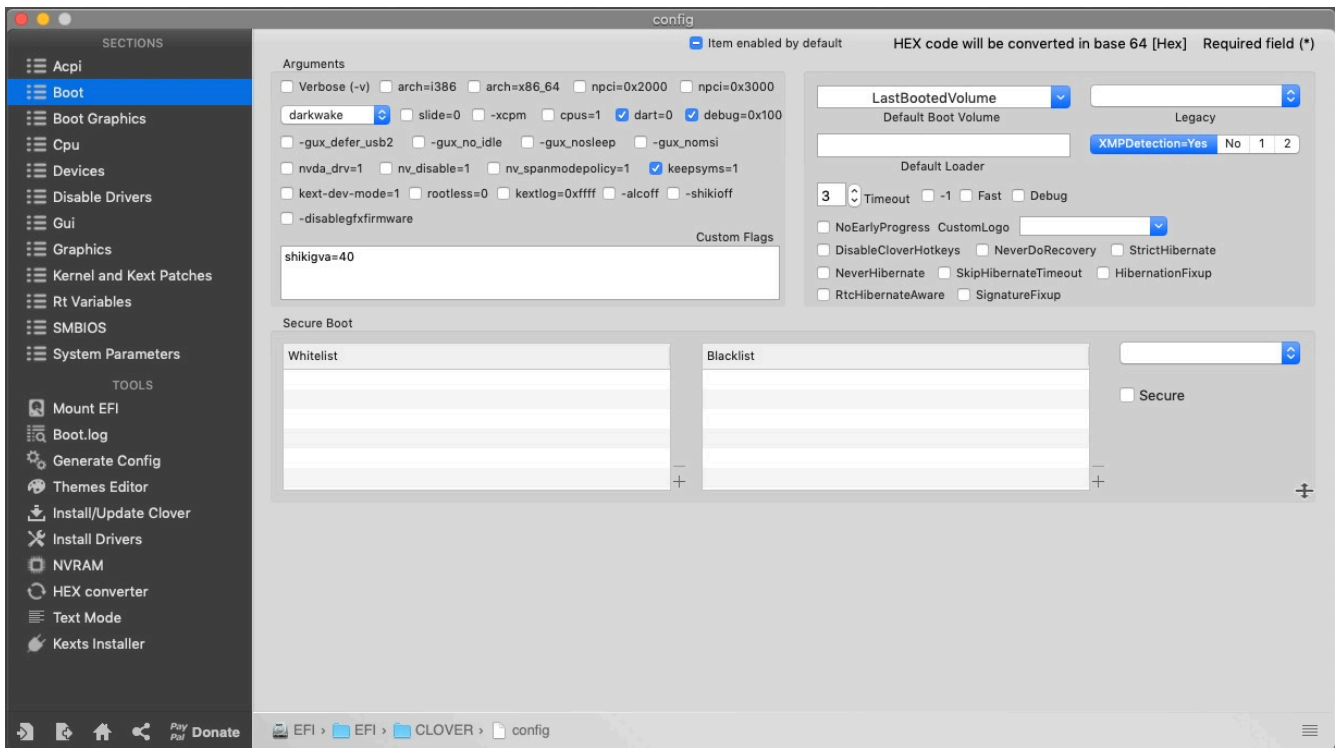
Opened Clover Configurator and copied the EFI from Install Mojave USB to Mojave internal ssd.

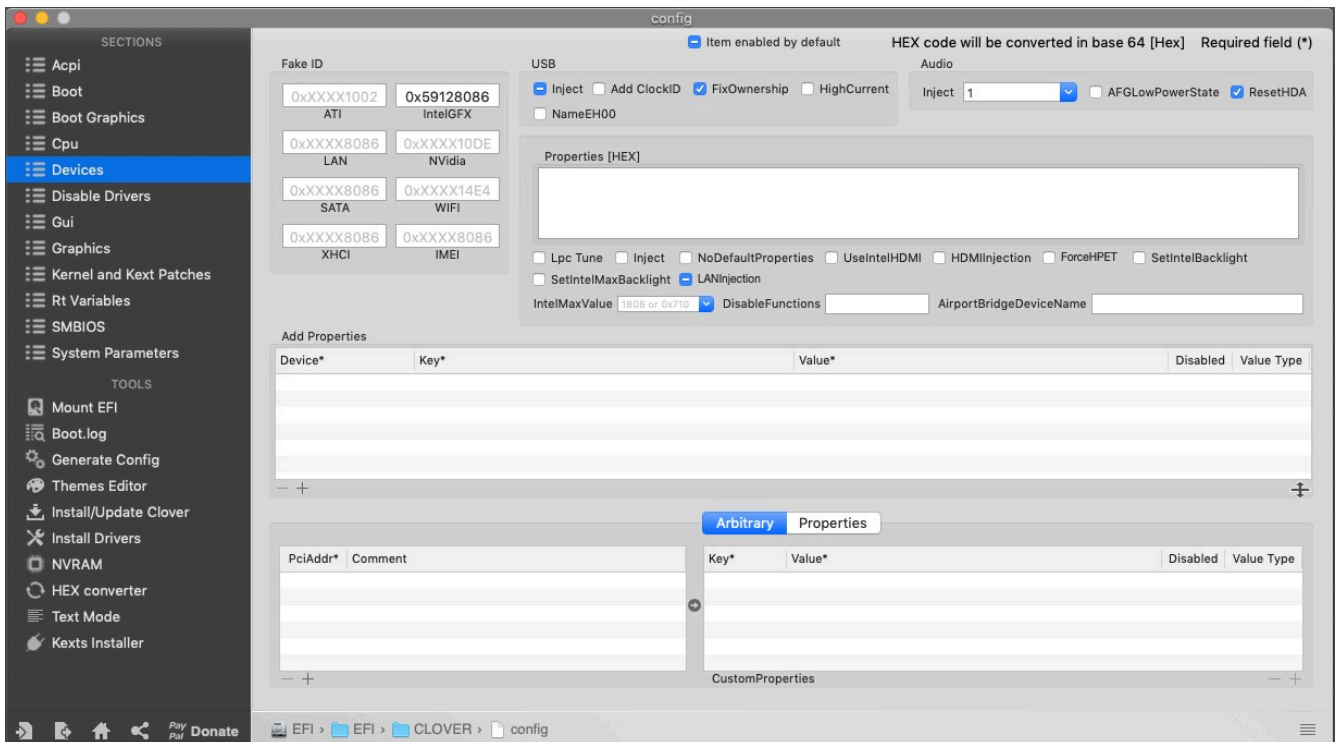
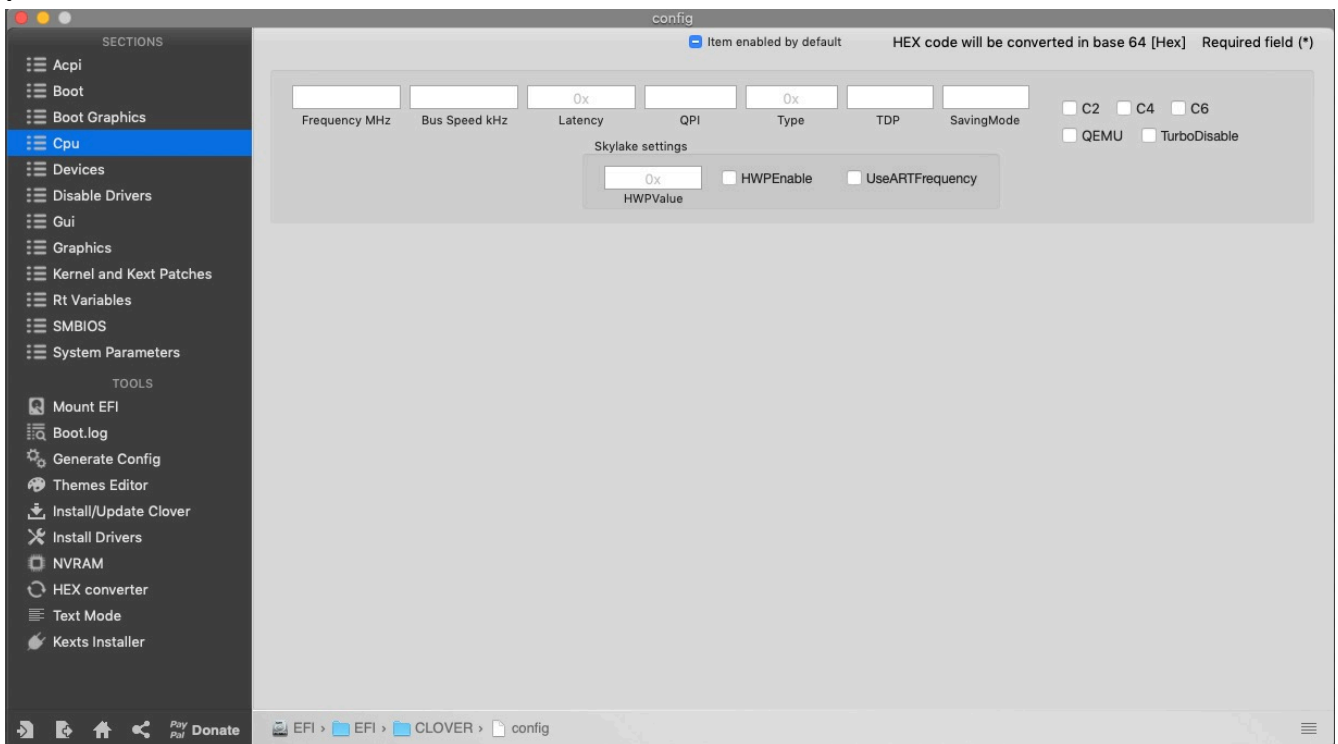
Jpg Preview Fix: Enable IGPU in BIOS.

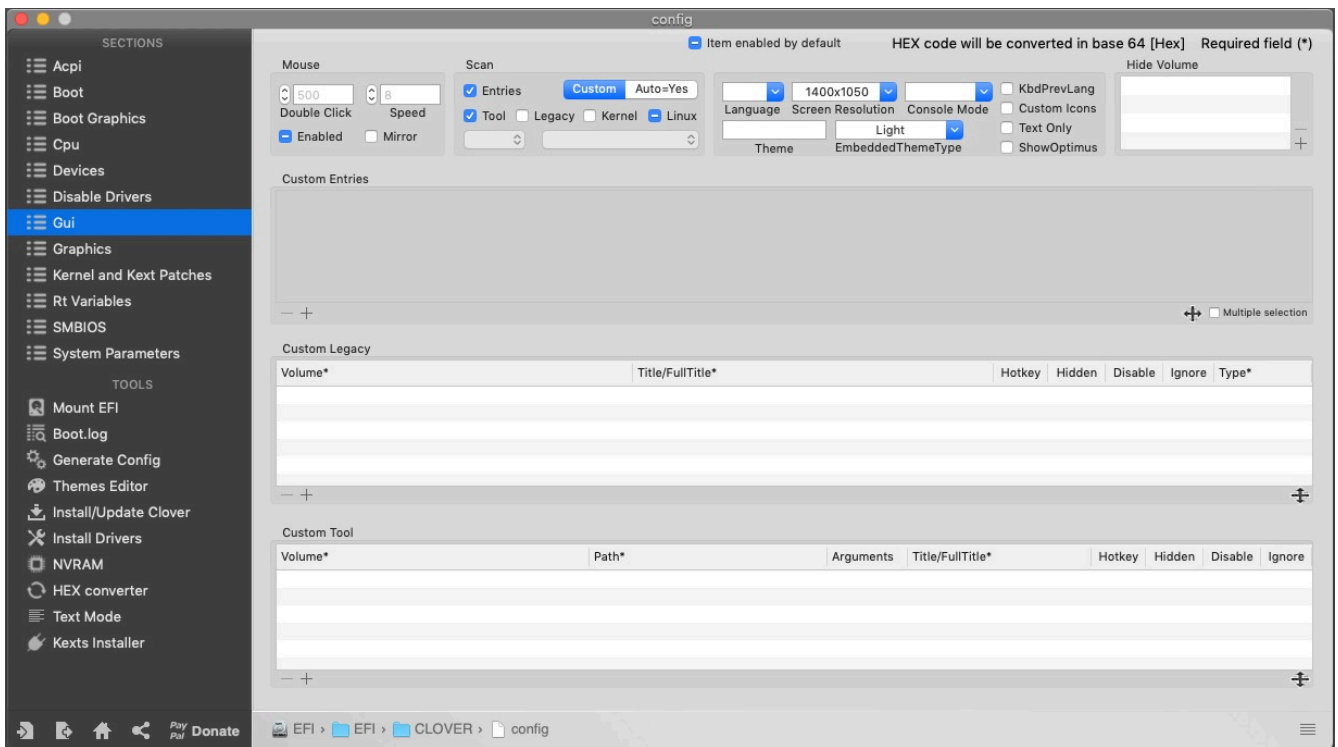
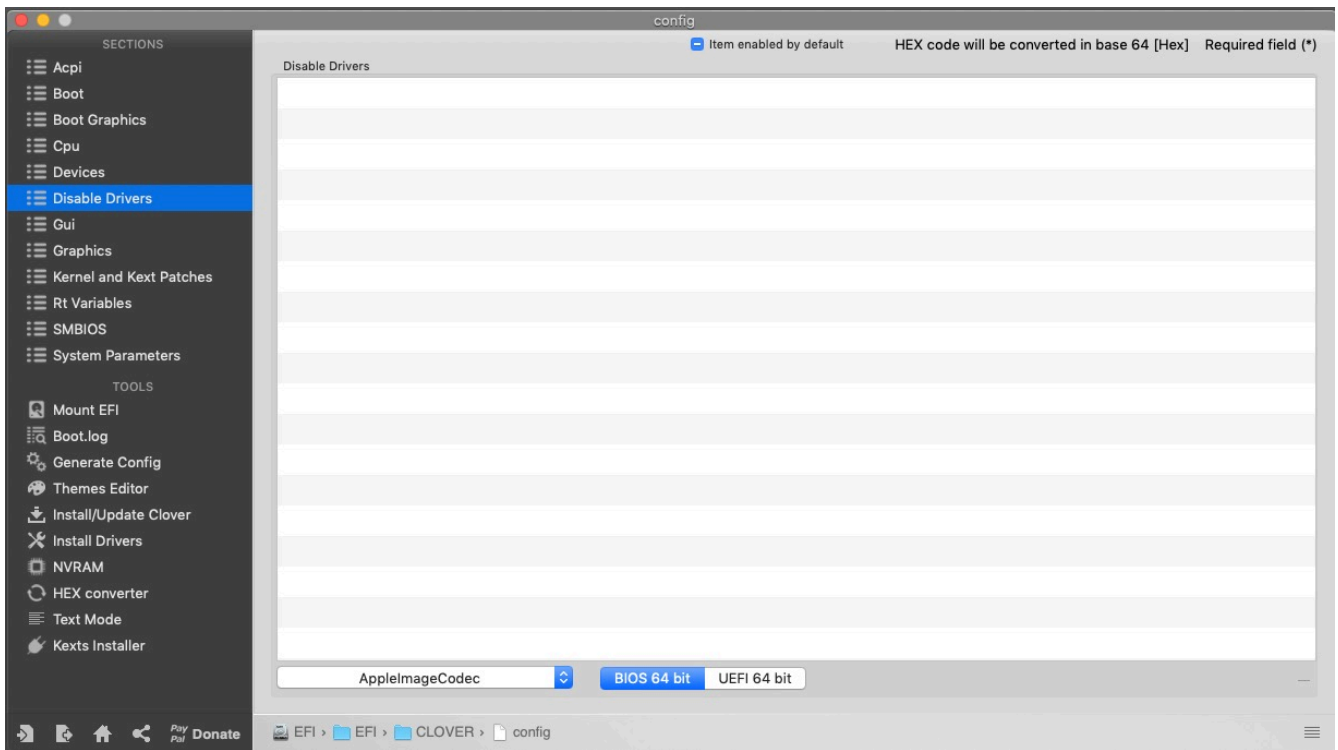
Clover Configurator Settings:

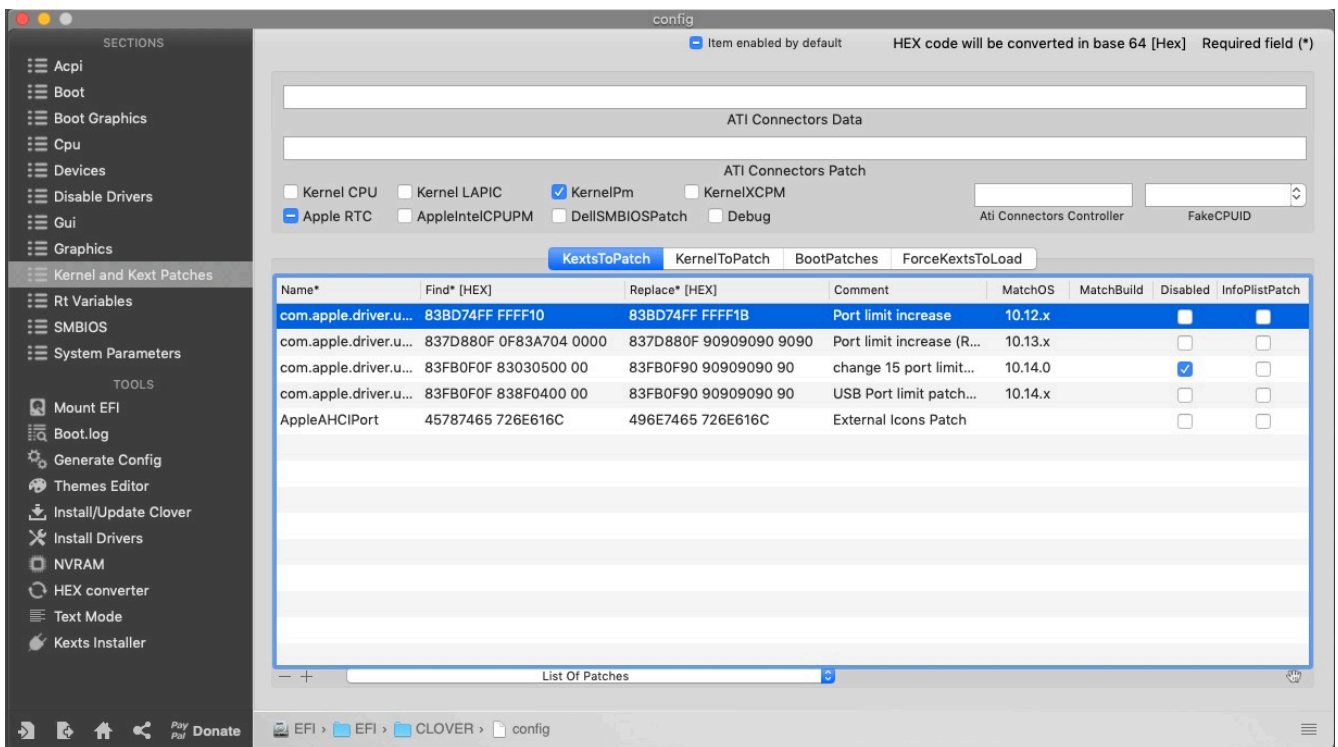
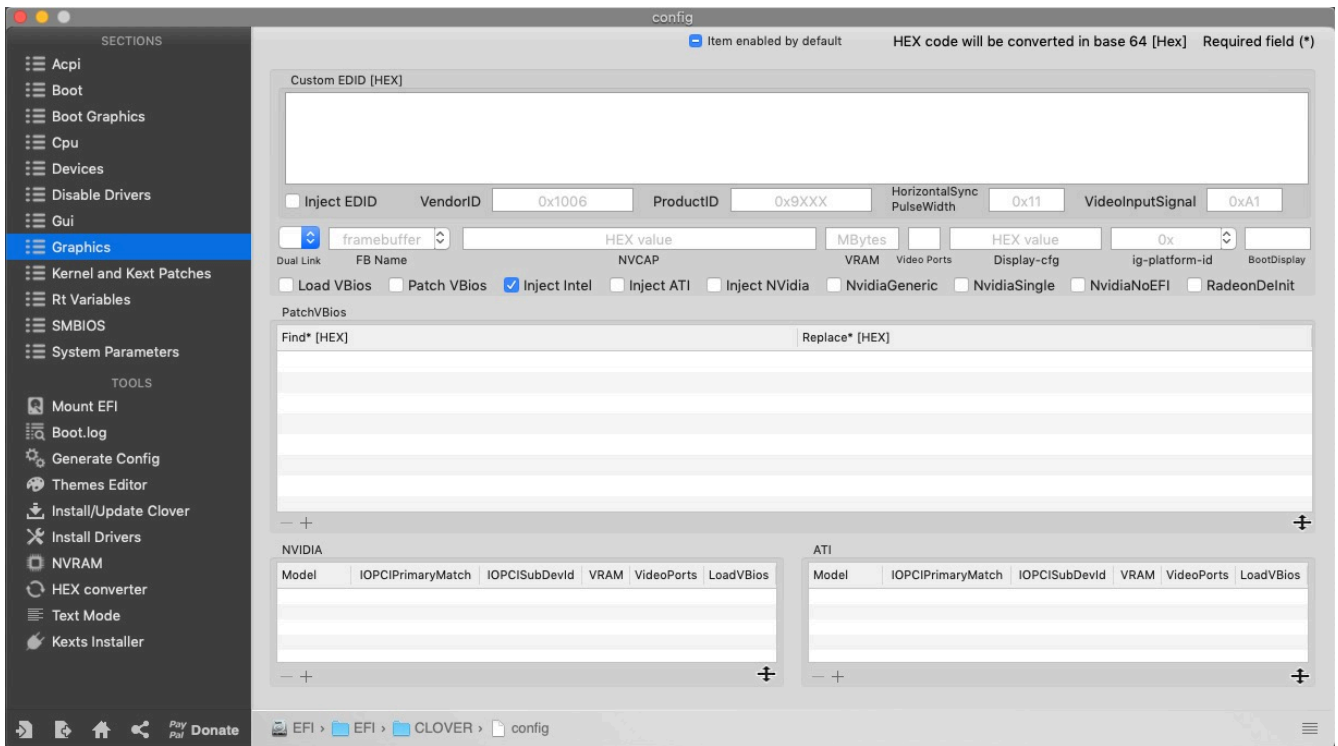


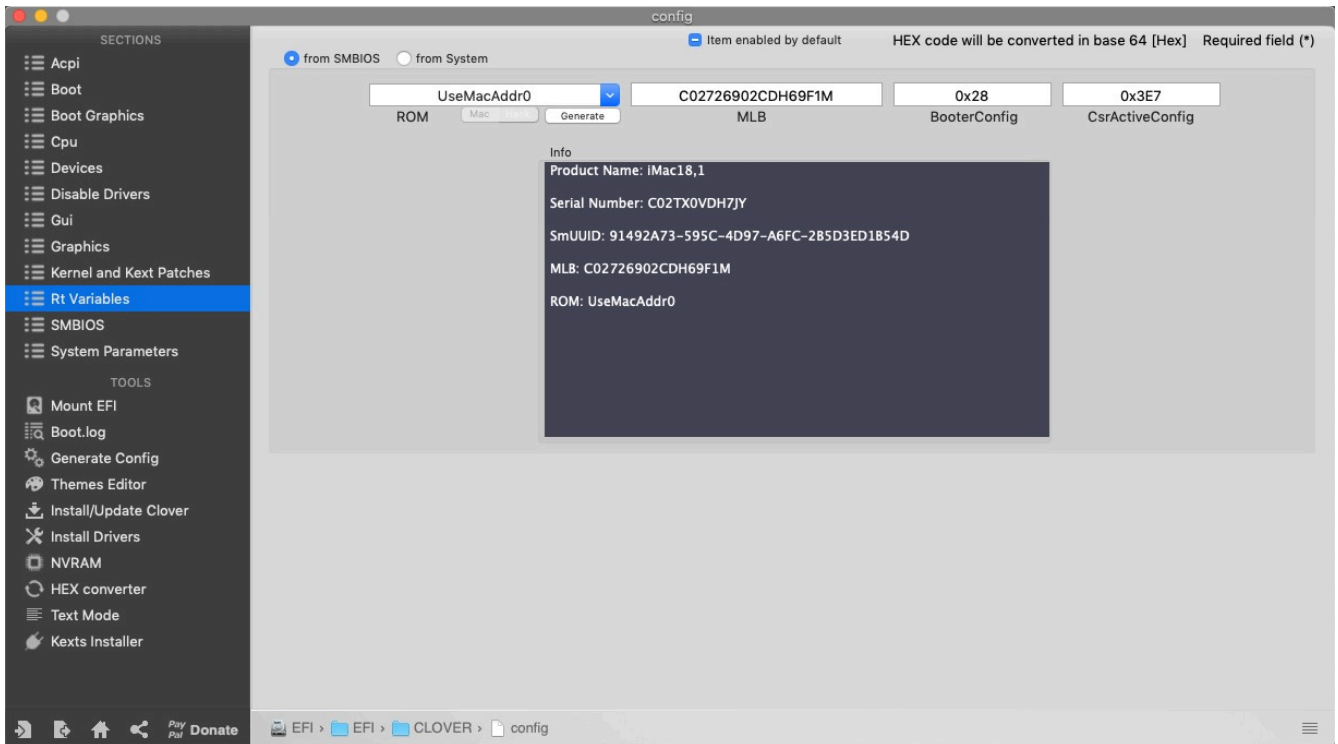
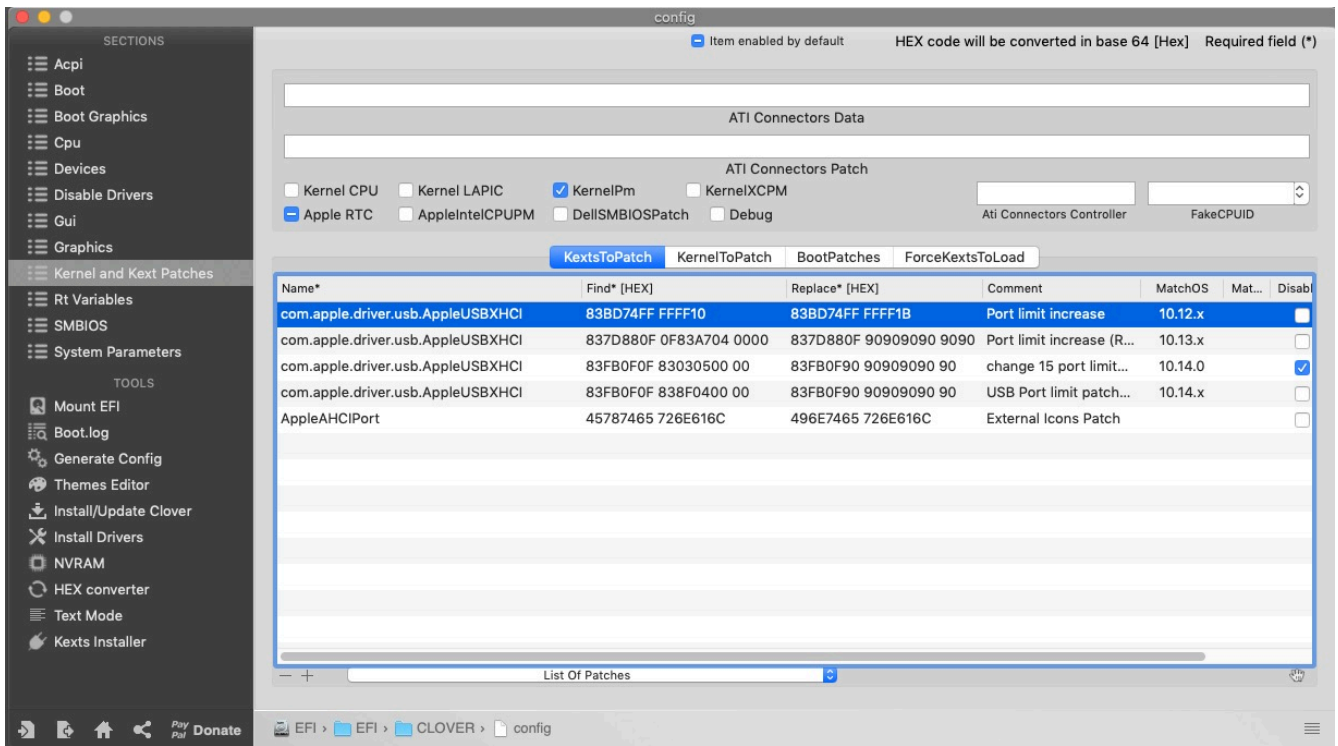












SECTIONS

Acpi

Boot

Boot Graphics

Cpu

Devices

Disable Drivers

Gui

Graphics

Kernel and Kext Patches

Rt Variables

**SMBIOS**

System Parameters

TOOLS

Mount EFI

Boot.log

Generate Config

Themes Editor

Install/Update Clover

Install Drivers

NVRAM

HEX converter

Text Mode

Kexts Installer

Pay Pal

Donate

config

Item enabled by default

HEX code will be converted in base 64 [Hex]

Required field (\*)

Product Model

iMac18,1

Family

Manufacturer

Bios Version

Bios Release Date

Bios Vendor

Chassis

Chassis Manufacturer

Location In Chassis

Chassis Asset Tag

Chassis Type

Board

Board Type

Board-ID

Board Manufacturer

Board Version

Board Serial Number

Firmware

0x

0x

0x

Efi Version

Model Lookup

Check Coverage

System

C02TX0VDH7JY

91492A73-595C-4D97-A6FC-2B5D3ED1B54D

Serial Number

SmUUID

Version

Mobile

Trust

Generate New

Generate New

Memory

Slots AAPL injections

Slot*	Size* (MB)	Frequency* (MHz)	Vendor*	Part	Serial	Type*

Channels

SlotCount

EFI > EFI > CLOVER > config

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config

Item enabled by default

HEX code will be converted in base 64 [Hex]

Required field (\*)

E131C03B-1CB9-5F34-A527-B45B2A47D92E

Custom UUID

Generate New

Get it from system

Backlight Level

Yes

Inject Kexts

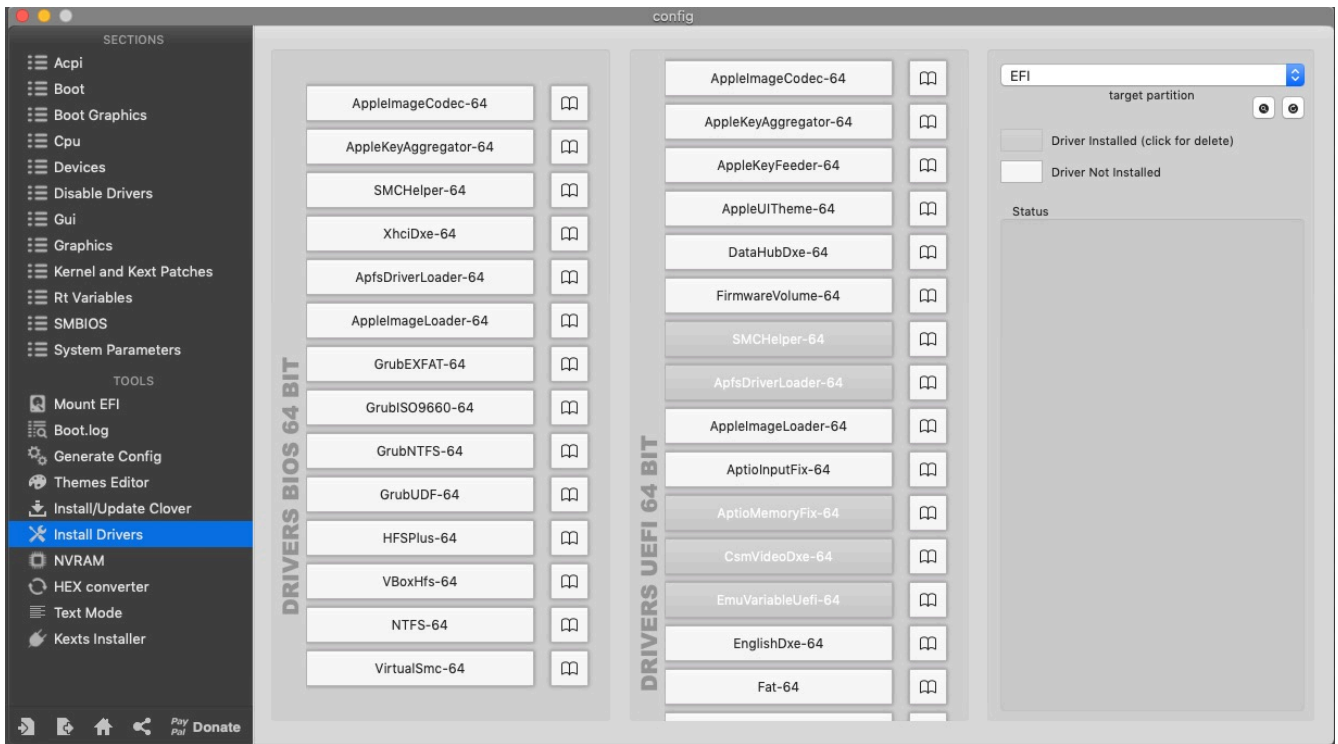
No Caches

ExposeSysVariables

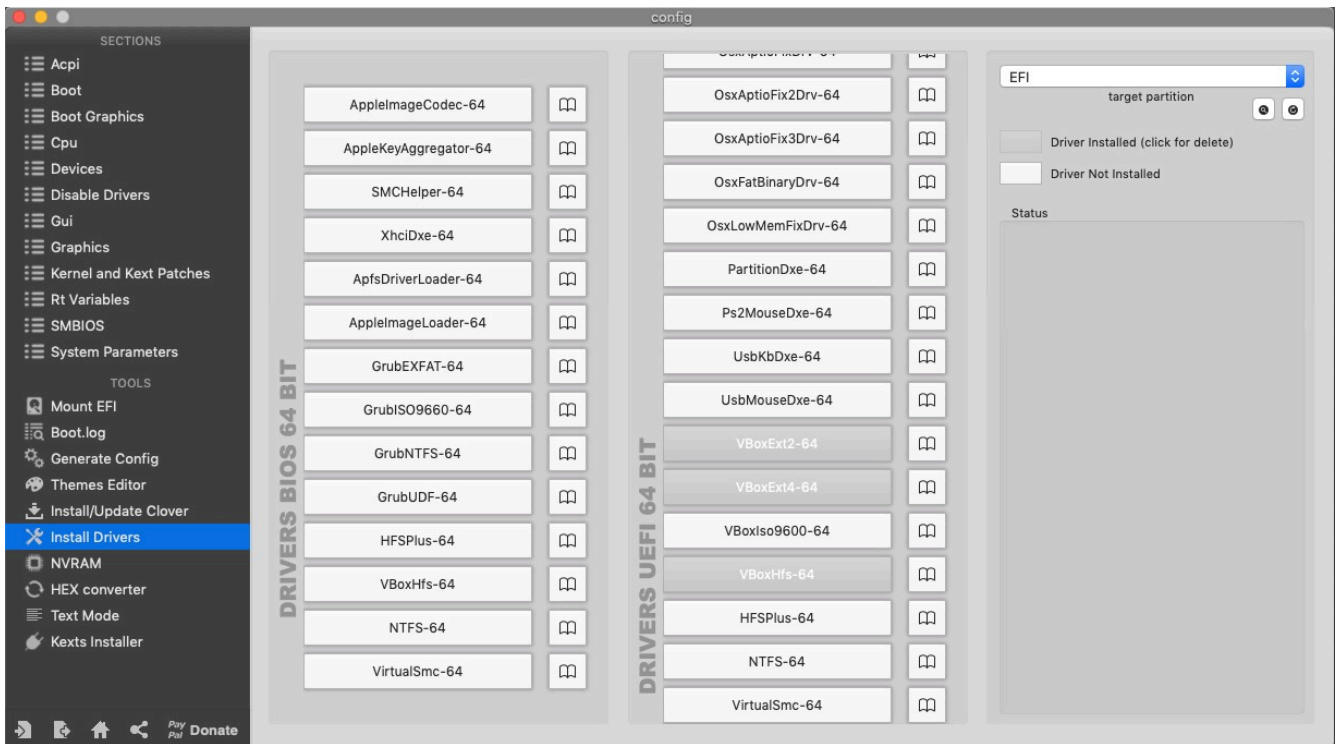
Inject System ID

NvidiaWeb

EFI > EFI > CLOVER > config







## Clover.plist

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE plist PUBLIC "-//Apple//DTD PLIST 1.0//EN" "http://www.apple.com/DTDs/PropertyList-1.0.dtd">
<plist version="1.0">
<dict>
  <key>ACPI</key>
  <dict>
    <key>DSDT</key>
    <dict>
      <key>Fixes</key>
      <dict>
        <key>FixHPET</key>
        <true/>
        <key>FixIPIC</key>
        <true/>
        <key>FixRTC</key>
        <true/>
        <key>FixShutdown</key>
        <true/>
        <key>FixTMR</key>
        <true/>
      </dict>
    </dict>
  </dict>
  <key>Patches</key>
</plist>
```



```
<array>
  <dict>
    <key>Comment</key>
    <string>change GFX0 to IGPU</string>
    <key>Disabled</key>
    <false/>
    <key>Find</key>
    <data>
      ROZYMA==
    </data>
    <key>Replace</key>
    <data>
      SUdQVQ==
    </data>
  </dict>
  <dict>
    <key>Comment</key>
    <string>change HDAS to HDEF</string>
    <key>Disabled</key>
    <false/>
    <key>Find</key>
    <data>
      SERBUw==
    </data>
    <key>Replace</key>
    <data>
      SERFRg==
    </data>
  </dict>
  <dict>
    <key>Comment</key>
    <string>change XHCI to XHC</string>
    <key>Disabled</key>
    <false/>
    <key>Find</key>
    <data>
      WEhDSQ==
    </data>
    <key>Replace</key>
    <data>
      WEhDXw==
    </data>
  </dict>
  <dict>
    <key>Comment</key>
    <string>change XHC1 to XHC</string>
```

```
        <key>Disabled</key>
        <false/>
        <key>Find</key>
        <data>
        WEhDMQ==
        </data>
        <key>Replace</key>
        <data>
        WEhDXw==
        </data>
    </dict>
    <dict>
        <key>Comment</key>
        <string>change SAT0 to SATA</string>
        <key>Disabled</key>
        <false/>
        <key>Find</key>
        <data>
        U0FUMA==
        </data>
        <key>Replace</key>
        <data>
        U0FUQQ==
        </data>
    </dict>
    <dict>
        <key>Comment</key>
        <string>change HECI to IMEI</string>
        <key>Disabled</key>
        <false/>
        <key>Find</key>
        <data>
        SEVDSQ==
        </data>
        <key>Replace</key>
        <data>
        SU1FSQ==
        </data>
    </dict>
</array>
</dict>
<key>DropTables</key>
<array>
    <dict>
        <key>Signature</key>
        <string>DMAR</string>
```

```
        </dict>
        <dict>
            <key>Signature</key>
            <string>MATS</string>
        </dict>
    </array>
    <key>FixHeaders</key>
    <true/>
    <key>HaltEnabler</key>
    <false/>
    <key>SSDT</key>
    <dict>
        <key>Generate</key>
        <dict>
            <key>PluginType</key>
            <true/>
        </dict>
    </dict>
</dict>
<key>Boot</key>
<dict>
    <key>Arguments</key>
    <string>keepsyms=1 dart=0 debug=0x100 -disablegfxfirmware shikigva=40 -
rad4200</string>
    <key>CustomLogo</key>
    <false/>
    <key>DefaultVolume</key>
    <string>1TB Mojave</string>
    <key>Timeout</key>
    <integer>3</integer>
    <key>XMPDetection</key>
    <string>Yes</string>
</dict>
<key>Devices</key>
<dict>
    <key>Audio</key>
    <dict>
        <key>Inject</key>
        <integer>1</integer>
        <key>ResetHDA</key>
        <true/>
    </dict>
    <key>FakeID</key>
    <dict>
        <key>IntelGFX</key>
        <string>0x59128086</string>
```

```
</dict>
<key>Properties</key>
<dict>
  <key>PciRoot(0x0)/Pci(0x2,0x0)</key>
  <dict>
    <key>AAPL,ig-platform-id</key>
    <data>
      BwCbPg==
    </data>
    <key>framebuffer-patch-enable</key>
    <data>
      AQAAAA==
    </data>
    <key>framebuffer-stolenmem</key>
    <data>
      AAAwAQ==
    </data>
  </dict>
</dict>
<key>USB</key>
<dict>
  <key>FixOwnership</key>
  <true/>
</dict>
</dict>
<key>GUI</key>
<dict>
  <key>EmbeddedThemeType</key>
  <string>Light</string>
  <key>Scan</key>
  <dict>
    <key>Entries</key>
    <true/>
    <key>Tool</key>
    <true/>
  </dict>
  <key>ScreenResolution</key>
  <string>2560x2048</string>
</dict>
<key>Graphics</key>
<dict>
  <key>Inject</key>
  <dict>
    <key>ATI</key>
    <false/>
    <key>Intel</key>
```

```
<false/>
<key>NVidia</key>
<false/>
</dict>
<key>RadeonDeInit</key>
<true/>
<key>ig-platform-id</key>
<string>0x3E910003</string>
</dict>
<key>KernelAndKextPatches</key>
<dict>
  <key>AppleIntelCPUPM</key>
  <false/>
  <key>KernelPm</key>
  <true/>
  <key>KextsToPatch</key>
  <array>
    <dict>
      <key>Comment</key>
      <string>Port limit increase</string>
      <key>Disabled</key>
      <false/>
      <key>Find</key>
      <data>
        g710///EA==
      </data>
      <key>InfoPlistPatch</key>
      <false/>
      <key>MatchOS</key>
      <string>10.12.x</string>
      <key>Name</key>
      <string>com.apple.driver.usb.AppleUSBXHCI</string>
      <key>Replace</key>
      <data>
        g710///Gw==
      </data>
    </dict>
  </array>
  <key>KextsToPatch</key>
  <array>
    <dict>
      <key>Comment</key>
      <string>Port limit increase (RehabMan)</string>
      <key>Disabled</key>
      <false/>
      <key>Find</key>
      <data>
        g32IDw+DpwQAAA==
      </data>
    </dict>
  </array>

```

```
<key>InfoPlistPatch</key>
<false/>
<key>MatchOS</key>
<string>10.13.x</string>
<key>Name</key>
<string>com.apple.driver.usb.AppleUSBXHCI</string>
<key>Replace</key>
<data>
g32ID5CQkJCQkA==
</data>
</dict>
<dict>
  <key>Comment</key>
  <string>change 15 port limit to 26 in XHCI kext (credit PMHeart)</string>
  <key>Disabled</key>
  <true/>
  <key>Find</key>
  <data>
g/sPD4MDBQAA
  </data>
  <key>InfoPlistPatch</key>
  <false/>
  <key>MatchOS</key>
  <string>10.14.0</string>
  <key>Name</key>
  <string>com.apple.driver.usb.AppleUSBXHCI</string>
  <key>Replace</key>
  <data>
g/sPkJCQkJCQ
  </data>
</dict>
<dict>
  <key>Comment</key>
  <string>USB Port limit patch 10.14.1 18B45d (credits Ricky)</string>
  <key>Disabled</key>
  <false/>
  <key>Find</key>
  <data>
g/sPD4OPBAAA
  </data>
  <key>InfoPlistPatch</key>
  <false/>
  <key>MatchOS</key>
  <string>10.14.x</string>
  <key>Name</key>
  <string>com.apple.driver.usb.AppleUSBXHCI</string>
```

```
        <key>Replace</key>
        <data>
        g/sPkJCQkJCQ
        </data>
    </dict>
    <dict>
        <key>Comment</key>
        <string>External Icons Patch</string>
        <key>Disabled</key>
        <false/>
        <key>Find</key>
        <data>
        RXh0ZXJuYWw=
        </data>
        <key>InfoPlistPatch</key>
        <false/>
        <key>Name</key>
        <string>AppleAHCIPort</string>
        <key>Replace</key>
        <data>
        SW50ZXJuYWw=
        </data>
    </dict>
</array>
</dict>
<key>RtVariables</key>
<dict>
    <key>BooterConfig</key>
    <string>0x28</string>
    <key>CsrActiveConfig</key>
    <string>0x3E7</string>
    <key>MLB</key>
    <string>C02726902CDH69F1M</string>
    <key>ROM</key>
    <string>UseMacAddr0</string>
</dict>
<key>SMBIOS</key>
<dict>
    <key>BiosReleaseDate</key>
    <string>09/17/2018</string>
    <key>BiosVendor</key>
    <string>Apple Inc.</string>
    <key>BiosVersion</key>
    <string>IM181.88Z.F000.B00.1809171524</string>
    <key>Board-ID</key>
    <string>Mac-4B682C642B45593E</string>
```

```
<key>BoardManufacturer</key>
<string>Apple Inc.</string>
<key>BoardSerialNumber</key>
<string>C02726902CDH69F1M</string>
<key>BoardType</key>
<integer>10</integer>
<key>BoardVersion</key>
<string>iMac18,1</string>
<key>ChassisAssetTag</key>
<string>iMac-Aluminum</string>
<key>ChassisManufacturer</key>
<string>Apple Inc.</string>
<key>ChassisType</key>
<string>0x0009</string>
<key>Family</key>
<string>iMac</string>
<key>LocationInChassis</key>
<string>Part Component</string>
<key>Manufacturer</key>
<string>Apple Inc.</string>
<key>ProductName</key>
<string>iMac18,1</string>
<key>SerialNumber</key>
<string>C02TX0VDH7JY</string>
<key>SmUUID</key>
<string>91492A73-595C-4D97-A6FC-2B5D3ED1B54D</string>
<key>Trust</key>
<true/>
<key>Version</key>
<string>1.0</string>
</dict>
<key>SystemParameters</key>
<dict>
  <key>CustomUUID</key>
  <string>E131C03B-1CB9-5F34-A527-B45B2A47D92E</string>
  <key>InjectKexts</key>
  <string>Yes</string>
  <key>InjectSystemID</key>
  <true/>
</dict>
</dict>
</plist>
```



Update to Mojave 10.14.1

Format the disk as APFS

Run the updater

Restart when the computer freeze ( my computer , problem with restart and shutdown)

Installer will run until it freeze again

Then run the ***“Boot FileVault PreBooter from Preboot”*** to finish the update.

Finish.

To get rid of Extra Volumes in Clover boot process

Open Terminal

Diskutil list

Diskutil apfs deleteVolume Prebooter

Same for all other extra unnecessary volumes