

iATKOS ML³U Guide

1 - a) iATKOS ML³U is a UEFI based OSX[^] installer release and is designed for Non-Apple 64-bit Intel CPU UEFI computers.

b) This installer includes Apple's Mac OS X Mountain Lion 10.8.2 (Build 12D78).

c) This installer includes Clover UEFI Bootloader.

2 - Requirements and Support List:

Requirements: Compatible UEFI Motherboard, 2nd generation Intel Core i series and newer CPU, minimum 4GB RAM, minimum 16GB free space on target partition, compatible VGA card.

Check your hardware details and do the comparing with the hardware support list below.

>>> Hardware Compatibility Information of iATKOS ML³U <<<

You may also visit Wiki HCL pages and other OSX[^] platforms for more support.

You will want to know about the details of your computer before attempting to install this system.

To get your hardware details (Vendor IDs, Device IDs), you can

- Fire up a Linux Live CD and boot from it (ie. Parted Magic, Ubuntu Live CD). Type "lspci -nn" in terminal, press enter and take notes.
- Get/install Everest Ultimate Edition on Windows and use it to export the information.
- Boot from iATKOS ML³U USB media, open terminal, type "lspci -nn", press enter and take notes.

Mostly, compatibility of a hardware can be defined by its chipset and device id, but this is not a rule. Motherboards/VGA cards/other computers parts with same chipsets and device ids of different brands may have differences that can result with incompatibility.

Therefore > **Search, read and try it on your computer before asking like "Will this hardware/computer work with iATKOS ML³U?"**.

Simply, if a hardware is absolutely not compatible with OSX[^] 10.8.2 (i.e. Broadcom BCM4313, Atheros AR5001, etc.), then it is also not compatible with iATKOS ML³.

3 -

Check the md5 of the iATKOS dmg file that you downloaded and make sure that the md5 checksum matches the one posted on our website. If not, then you have a faulty dmg image file.

4 -

Read the instalation steps carefully and if something goes wrong, don't panic. Scroll down to the troubleshooting guide. Make sure you have read/applied the steps of troubleshooting guide before posting in the forum!

Information:

- 64-bit/32-bit thing:

Mac OS X Mountain Lion is a 64-bit operating system which means that it can only boot in 64-bit mode.

32-bit applications will work but loading a 32-bit compiled driver/module/kext is not possible for Mountain Lion. Therefore applications that need their own 32bit-only modules (kexts) may partially or totally fail.

- You can make clean and refresh installs to your existing MLU system using iATKOS MLU. Please read the related section.

- Easy installation on Software RAID volumes. No additional user actions needed. Please read the related section.

- Network devices will be auto-detected.

- Onboard sound devices will be auto-detected. Thanks to Andy Vandijck and Voodoo team.

- Using software updater to apply main system updates just like real Macs on most computers is possible using iATKOS MLU. Please read the related section.

- This installer may not include all the necessary drivers required by your setup. Additional steps may be needed to be taken by the user to setup and use such components.

- Main system is fully stock. We are running iATKOS main system on our real Macs!

- Intro track > "Flu - Şarj-ı Deşarj"

Before Installation:

- BIOS settings:

- Set your BIOS to its default settings
- Execute Disable bit: Enabled
- Limit CPUID Max: Disabled
- Set all cores of the CPU active/enabled

- Virtualization (if exists): Enabled or Disabled, try it.
- Hyper-threading: Enabled
- HPET (High Precision Event Timer/PCH): Enabled
- SATA Mode: AHCI
- Set all the Overclock/Performance/Turbo etc. values to Auto
- Enable UEFI boot

- Preparing a Target for installation:

- A target partition or disk will be needed for installation.

- If you are not an advanced user, I advice you to use a clean harddisk with no personal data/OS as for target and unplug all the other harddisk drives connected to your motherboard just to be safe.

- If you are not an advanced user and if your target disk includes personal data and/or any OS, I advice you to **backup your data before anything**.

- OS X Disk Utility should be used for partitioning and such operations for preparing a target. Boot iATKOS ML^U, choose the language, run Disk Utility via Utilities menu and create your target.

Create your target partition formatted as HFS+ (Mac OS Extended (Journaled)).

-Partition Type: You need to choose **GPT (Guid Partition Table)** for your target harddisk via partitioning options.

If you need to change your existing partition table type, note that all your existing data on target harddisk will be gone.

Starting the Installation:

- Boot your computer from iATKOS ML^U USB media with UEFI mode

Most OSX[^] compatible computers will be able to boot iATKOS ML^U USB media by default (without entering commands), but some computers will need some boot flag(s)/command(s) to be added to the boot arguments under Clover Options menu.

Common boot flags/commands for iATKOS ML^U install media:

- You can enter without quotes (").
- You can try combinations by adding a space between them, i.e. "-v cpus=1".

"**cpus=1**" This may be needed for some 2011 socket motherboards and some laptop computers. TSC Sync should be selected for those 2011 socket motherboards during install. Kernel Patcher should be selected for those problematic laptop computers.

"**-v**" Verbose mode.

"**-x**" Safe mode.

"**-s**" Single user mode.

"**WithKexts**" Ignore caches.

"**npci=0x0000**" Computers that freeze on "[PCI Configuration Begin]" line may try this command.

- [Select the language](#)

Clean Installation:

1 - Run Disk Utility via Utilities menu and erase the target for clean install

2 - Select the destination for installation

3 - Click Customize* and select what you need

4 - Click Install

5 - Restart your computer with iATKOS MLU USB installer one more time and add your UEFI boot device to your boot menu using Clover Boot Options menu. Now you can boot your computer in UEFI mode from your target device.

6 - Restart your computer, unplug iATKOS MLU USB media and boot from your new system in UEFI mode.

Upgrade from previous versions:

- You can upgrade your existing Mountain Lion (10.8.x) installations to UEFI bootable Mountain Lion 10.8.3 or make a refresh install to your problematic 10.8.3 system (keeping your applications, user accounts, user settings and user data) by using iATKOS MLU.

- I advice you to try a clean install to another hdd on your computer before upgrade, to see that if it actually works on your computer or not and to determine your install selection list.

- You will need to re-install your special device drivers after upgrade. i.e. your m-audio firewire sound driver, your 56K modem driver, your ATI video card driver..

- You will need to prepare your selection list just like a clean install.

1- Select the destination for upgrade installation

2- Click Customize* and select what you need

3- Click Install

4- Restart your computer with iATKOS ML3U USB installer one more time and add your UEFI boot device to your boot menu using Clover Boot Options menu. Now you can boot your computer in UEFI mode from your target device.

5- Restart your computer, unplug iATKOS ML3U USB media and boot from your new system in UEFI mode.

* Customize:

- This is the most important part of the installation.
- There is already a basic default profile chosen and adding 2 or 3 packages to default profile will probably be enough for most computers.
- You may have to try plenty of times to find the best configuration for your computer if you don't have enough experience on target hardware, so don't come to the forum complaining like "I installed 3 times but it still does not work..".
- Please read the descriptions of the packages carefully.

Software RAID:

Information:

- Software RAID combines two or more physical harddisks or their partitions (RAID slices) into a single logical unit. RAID's various designs involve two key design goals: increase data reliability and/or increase input/output performance.

- You can create RAID volumes and install Lion on RAID using iATKOS ML3U.

- RAID levels or types for OS X:

Striped RAID (RAID-0): A RAID-0 set splits data evenly across multiple disks with no parity

information for redundancy. RAID 0 is normally used to increase performance for both read and write. It can also be used as a way to create a small number of large virtual disks out of a large number of small physical ones. Simply it is a way to use the disks like using the dual or more channel RAMs, so it increases the read and write performance more than a bit. RAID 0 sets are advised for the main system volumes to increase the performance of the OS.

Mirrored RAID (RAID-1): A RAID-1 set creates an exact copy of a set of data on two or more disks. This is mostly for data safety and also an increase of performance for read operations is expected. The RAID array can only be as big as the smallest member of the slices. RAID 1 sets are used for security and advised for data storage volumes.

Concatenated Disk set: Which is not exactly a RAID level. The slices are merely concatenated together, end to beginning, so they appear to be a single large disk. It provides no data redundancy. This may be thought of as the inverse of partitioning. Whereas partitioning takes one physical drive and creates two or many more logical volumes, concatenation uses two or more slices to create one logical volume. No increase in performance is possible and neither increased data reliability is possible.

- Boot helper partition: OS X Software RAID systems boot using boot helper partitions and so the bootloader will be installed to boot helper partition instead of the RAID slice. If one of the RAID slices of your target RAID volume is disk 0s1, then its hidden boot helper partition named as "Boot OS X" is disk 0s2. Do the math for the others. iATKOS MLU will do this installation automatically.

- Create RAID volumes: You can easily create RAID volumes using OS X Disk Utility. Do the partitioning if you need to, click on the target disk and then click on RAID tab, choose RAID type, name it and by pressing "+" create a new RAID set. Add the target partitions or disks to RAID set by dragging them and when you are done, click to "Create" button. The added partitions or disks will be the slices of your RAID set, in a few seconds your RAID volume will be mounted and ready for installation.

- iATKOS MLU RAID operations:

- For RAID target, MLU installs the bootloader to the boot helper partition of the preceding disk of the RAID set, so the first disk by your bios will be the Mac OS X boot disk. You can install any foreign bootloaders to other harddisks of your RAID set, there will be no harm for your RAID set. On my test 3x RAID 0 system, second HDD has Grub bootloader and the third one has Windows bootloader, all of them are installed separately and running fine.

RAID Install Steps:

1 - Create RAID volume as described above

2 - Select it as destination for install

3 - Click Customize and select what you need

⌘ - Click Install

⏻ - Restart your computer with iATKOS ML⌘U USB installer one more time and add your UEFI boot device to your boot menu using Clover Boot Options menu. Now you can boot your computer in UEFI mode from your target device.

⏻ - Restart your computer, unplug iATKOS ML⌘U USB media and boot from your new UEFI bootable installation.

Main System Updates:

Using software updater to apply main system updates is easier with iATKOS ML⌘U for most computers.

Some drivers and patches will be overwritten and some will be non-functional, so computers that need these drivers and patches will need to take some actions after updating. These packages are:

- **SSD Trim support:** You will have to reinstall /Library/Temp/IOAHCIFamilyTrim.kext after updating.
- **Sound:** Delete /System/Library/Extensions/AppleHDA.kext after updating before first reboot, otherwise you may face kernel panic.
- **Disable nVidia drivers:** You will need to erase new nvidia drivers coming with the update.
- **Disable ATI drivers:** You will need to erase new ATI drivers coming with the update.
- **HD 3000/4000:** Intel Y chipset motherboards (Y4/Y5) with HD 3000 and Intel Z chipset motherboards (Z1/Z4/Z5/Z8) with HD 4000 will need to install IntelHD3000_4000_update.pkg after update before restart, otherwise their system will freeze. IntelHD3000_4000_update.pkg can be found on our forum.
- **Disable Intel drivers:** You will need to erase new Intel drivers coming with the update.

Every main system update that had some issues with our PC hardware's mostly covered after the release of the update. Therefore, updating like real Macs is not a thing that you can always count on. We can never know what Apple will do for the next update. Until now it had no major problems with X⌘ PC hardware's.

Multiboot:

iATKOS ML⌘U has no integrated procedure for multi-booting but preparing a multi-boot GPT system with this release is easy.

Here is a "How To" for dual boot Mac-Win. iATKOS ML⌘U USB media and WindowsY DVD

installers are used in this example.

- GPT (Guid Partition Table) triple boot -

- Check the partition table type with Disk Utility.

If it is not GPT, then repartition the drive and change the partition map scheme to GPT by pressing partition options. You will lose all the data on target disk by repartitioning.

- Create 3 or more partitions by using iATKOS Disk Utility. Mac OS Extended Journaled (HFS+) format for OS X target and an MS-DOS (Fat32) for the Windows target. Windows target should be one of the first 3 partitions.

- Boot iATKOS MLU and install OS X to target as usual.

- Boot Windows Media and install it to its FAT32 target. At first Windows restart attempt, make sure to boot Windows in bios mode once, next time you can boot in UEFI.

- You have dual-boot with OS X and windows right now.

Linux installation may break the hybrid GPT, to restore the broken hybrid gpt, read on..

>>Boot from Parted Magic CD and execute "sudo gptsync /dev/sdX" command on terminal without quotes (X is the BSD letter. Open the partition manager and you can easily see the BSD letter of your target disk).

Simple Troubleshooting guide:

At times **after installation**, your system may not work properly as in > it may restart, not boot at all or hang at a certain point. These are quite normal and there are some steps to be taken in these cases. It varies from one case to another. This basic troubleshooting guide may help you to solve most of the common problems.

- If you're facing hangs, freezes or kernel panics (which is present as a shutdown symbol on the grey screen just after boot) add "-v" (without quotes) to boot arguments in Clover Options menu and boot with it. This would give you verbose output which is useful for the solution.

You can take a photo of the verbose screen at the point of freeze and post it on our forum or on other OSX development platforms to get help.

- To pass the freeze/hang or kernel panic, you may try boot with "-x -v" (without quotes) which boots the computer in safe mode. Then you may have the chance to reach up to OS X GUI to solve your problem.

- White, black or blue screen freezes **mostly** mean that your graphics card(s) isn't functioning correctly at that time.

You can try to boot with "-x -v" command which mostly takes you successfully to OS X GUI in safe mode. Then you can search the internet for the solution for your graphics hardware.

Re-installing iATKOS ML^U by re-arranging your install selection list should be the first choice.

You may try with selecting none of the graphics related packages or the appropriate graphics disabler packages for your setup under VGA drivers section during install to make sure that it is a graphics related issue.

Then after a little more **reading** and search (if needed) you can install iATKOS ML^U with the right settings for your computer and solve the problem.

- You can also try these commands (without quotes) for freezes:

You can try combinations by adding a space between them, i.e. "-x -v cpus= \"

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"WithKexts"

"cpus= \"

"npci= -x \"

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