AX88772C/AX88772B/AX88772A/AX88760/AX88772 macOS Driver Installation Guide

Revision 3.40
Nov. 30th, 2017

Revision History

Revision	Date	Description
1.00	2010/08/12	Initial release.
1.10	2011/04/27	Modified the script files in Appendix.
1.20	2011/08/15	Added macOS 10.7 support.
1.30	2011/09/14	Modified the description to exclude macOS 10.4 support.
1.31	2011/10/13	Rearranged the document format and added more detailed driver installation/uninstallation procedures information.
1.32	2011/10/14	1. Moved some Section 1 descriptions to Appendix A.
2.00	2012/08/03	1. Changed the document name to "AX88772B/AX88772A/AX88760/AX88772 macOS Driver Installation Guide". 2. Removed AX88178 related information. 3. Added Appendix C "Apple macOS Native USB to LAN Drivers Supported Devices List". 4. Modified some descriptions in Section 1 and 2.
2.01	2012/08/22	1. Added Section 4 "Troubleshooting".
2.02	2012/09/26	1. Modified some descriptions in Section 1.
2.10	2013/03/08	1. Added AX88772C related strings. 2. Added Section 4-1 "How to identify the Vendor ID and Product ID of your USB dongle?". 3. Modified some descriptions in Section 2, 3, 4 and Appendix B.
3.00	2014/02/20	1. Modified to support macOS 10.9 driver installer. 2. Removed "4-2. Driver Installation Failure on MACOS 10.8 Issue", "Appendix A. Script Files Descriptions" and "Appendix B. AX88772C/772B/772A/760/772 Script Files" sections. 3. Replaced Section 4-2 "Driver Installation Failure on MACOS 10.8 Issue" with new Section 4-2 "How to identify authentic ASIX USB to LAN Product". 4. Modified some descriptions in Appendix A.
3.10	2014/06/23	1. Modified some descriptions in Section 1 and Appendix A.
3.20	2016/12/08	1. Modified some descriptions and pictures to meet the latest macOS driver installer. 2. Added Section 4-3 & 4-4.
3.30	2017/10/11	1. Modified some descriptions in Section 1 and Appendix A.
3.40	2017/11/30	1. Updated all descriptions to use unique "macOS" wording. 2. Added more information in Section 4-4.

Contents

1. Introduction

This document contains the installation and uninstallation information of ASIX's AX88772C/AX88772B /AX88772A/AX88760/AX88772 macOS 10.5 to 10.8 driver and macOS 10.9 and above driver.

The native "AppleUSBEthernet" driver on macOS 10.5 and above systems already support AX88772A/AX88760/AX88772 dongles so users need not to manually install ASIX's standard AX88772A/AX88760/AX88772 macOS driver if you don't have any issue on Apple's native driver.

The native "AppleUSBEthernet" driver of macOS 10.5 and above systems doesn't support AX88772C/AX88772B dongles yet so users MUST manually install the latest AX88772C/AX88772B macOS driver.
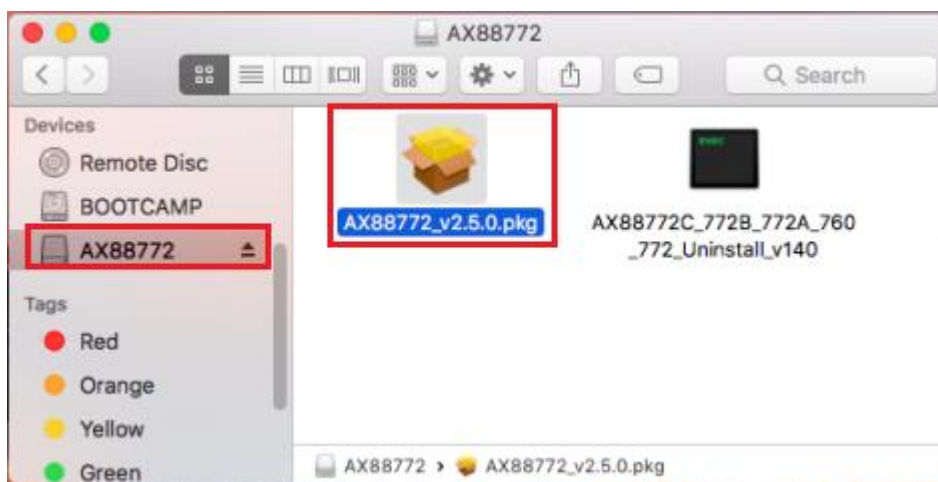
Some USB to LAN dongles have manufacturers' own VID/PID or have non-authentic ASIX product inside. If both Apple's native driver and ASIX's standard driver couldn't work fine with your USB-to-LAN dongle, please contact the support guys of your USB-to-LAN dongle manufacturer for further support.
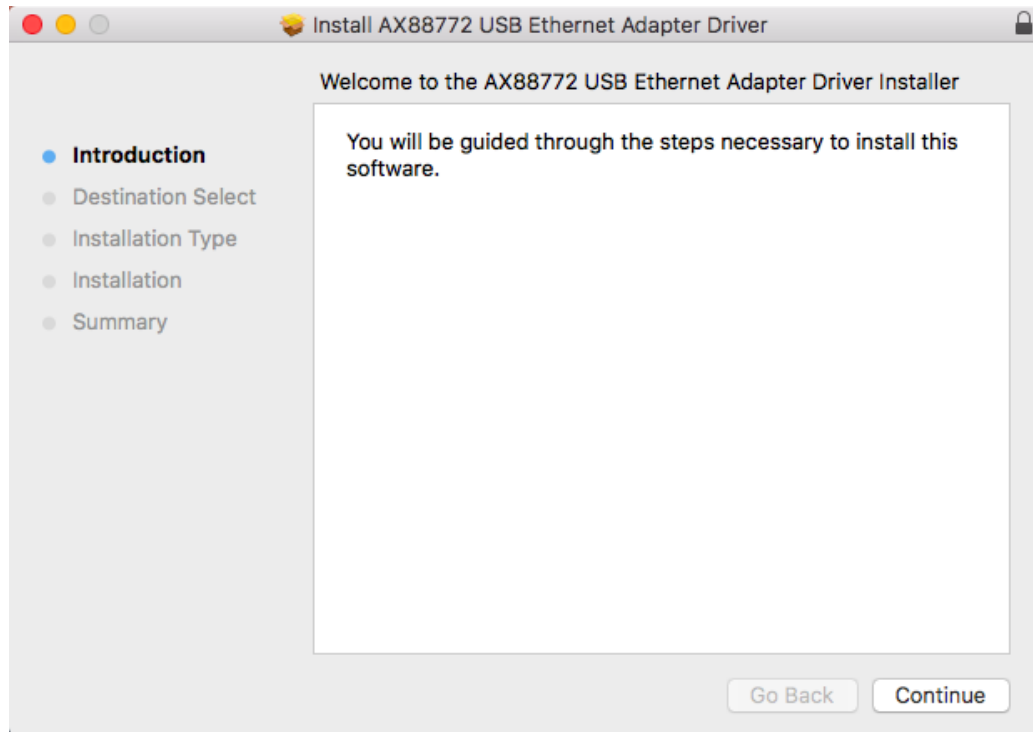
2. Driver Installation Procedures

The AX88772C/772B/772A/760/772 macOS driver installation package is "**AX88772.dmg**".

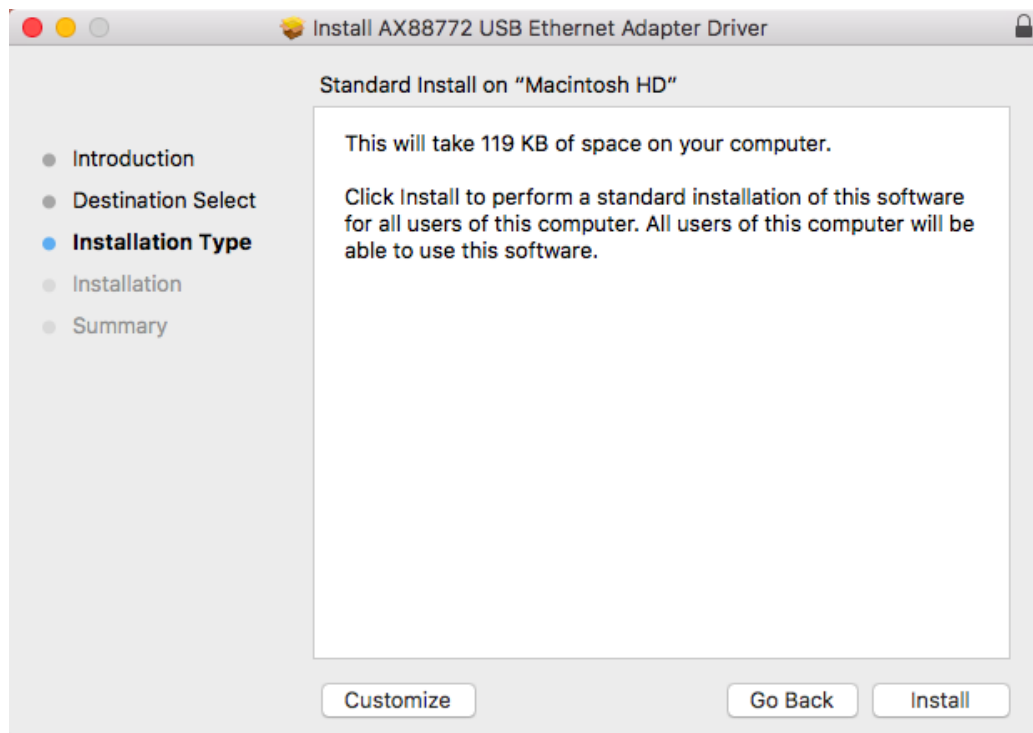The following is an example of ASIX's AX88772C/772B/772A/760/772 macOS driver installation procedures.

Step 1: Click the "AX88772.dmg", the following "AX88772" virtual disk will be appeared on the Devices list of your macOS system. (This "AX88772" virtual disk will be auto-removed after rebooting macOS system.)

Step 2: Click the "**AX88772_vx.x.x.pkg**" ("x.x.x" is driver installer revision number), the following driver setup dialog will appear. Click the [Continue] button to start the installation operation and follow the instructions to continue the installation.
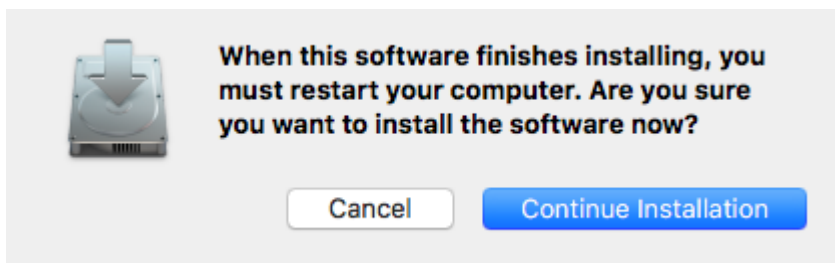
Install AX88772 USB Ethernet Adapter Driver

Welcome to the AX88772 USB Ethernet Adapter Driver Installer

- Introduction
- Destination Select
- Installation Type
- Installation
- Summary

You will be guided through the steps necessary to install this software.

Go Back   Continue

Step 3: Click the [Install] button to continue the installation operation.

Install AX88772 USB Ethernet Adapter Driver

Standard Install on "Macintosh HD"

- Introduction
- Destination Select
- **Installation Type**
- Installation
- Summary

This will take 119 KB of space on your computer.

Click Install to perform a standard installation of this software for all users of this computer. All users of this computer will be able to use this software.
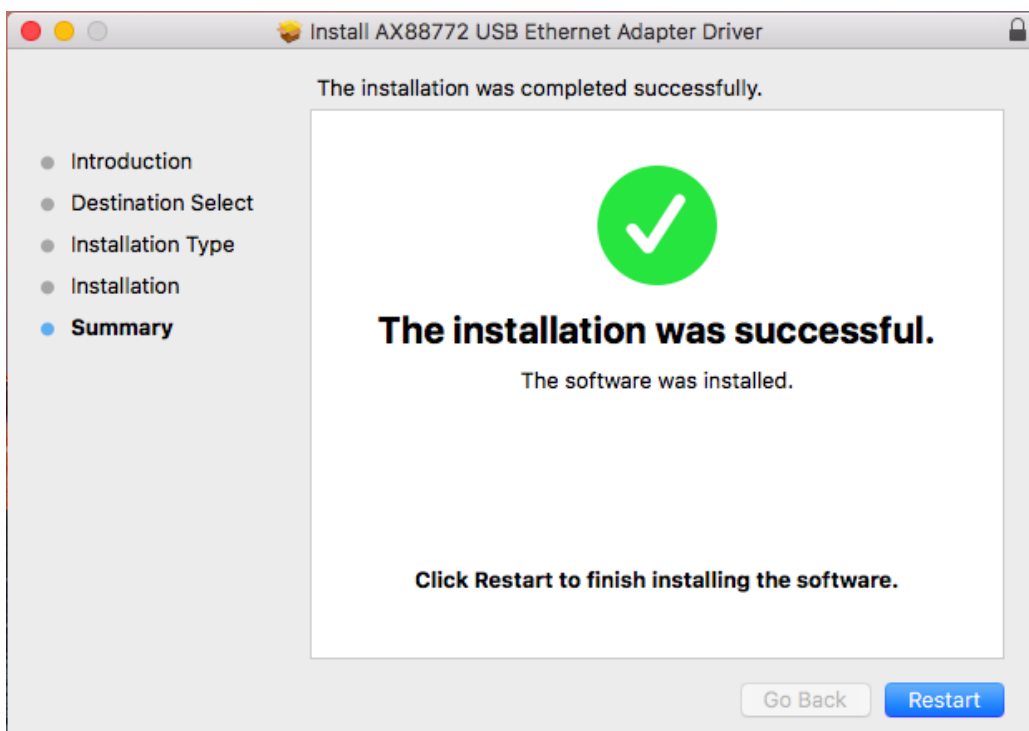
Customize   Go Back   Install

Step 4: You might need to enter your user/password during the driver installation.

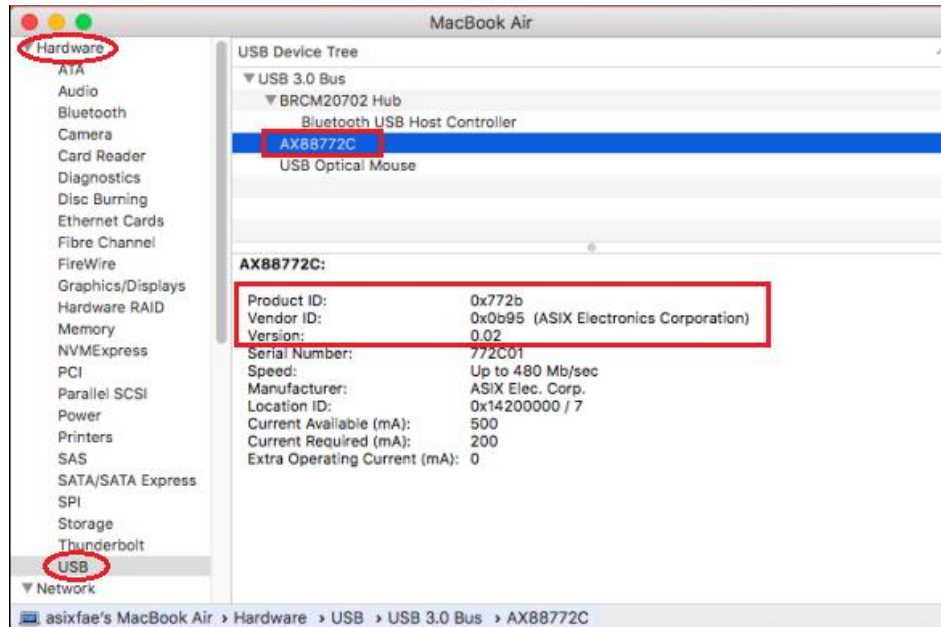Step 5: Click the [Continue Installation] button to continue the installation operation.

Step 6: Click the [Restart] button to restart macOS system to take effect the revised driver installation.

Step 7: After booting up your macOS system, plug your AX88772C/772B/772A/760/772 USB dongle onto the USB port of your macOS system and refer to the following information to double check if your USB dongle had been identified properly by macOS system and the AX88772C/AX88772B/AX88772A/AX88760/AX88772 macOS driver was installed correctly or not.

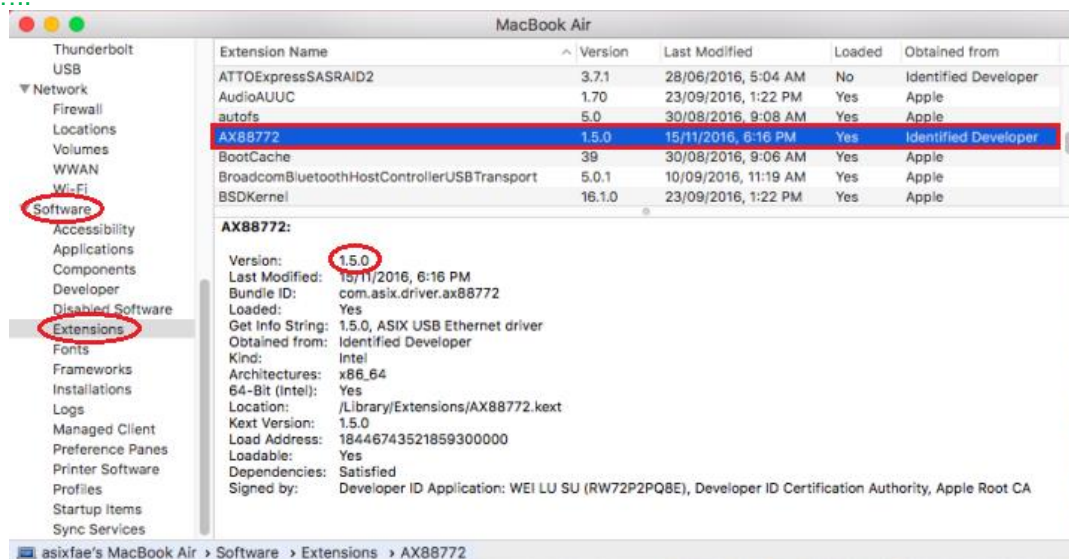(1) You can check the Vendor/Product ID information of your USB dongle from here.

(2) You can check the installed AX88772C/AX88772B/AX88772A/AX88760/AX88772 macOS driver version information by running the "**kextstat**" command or referring to below figure.
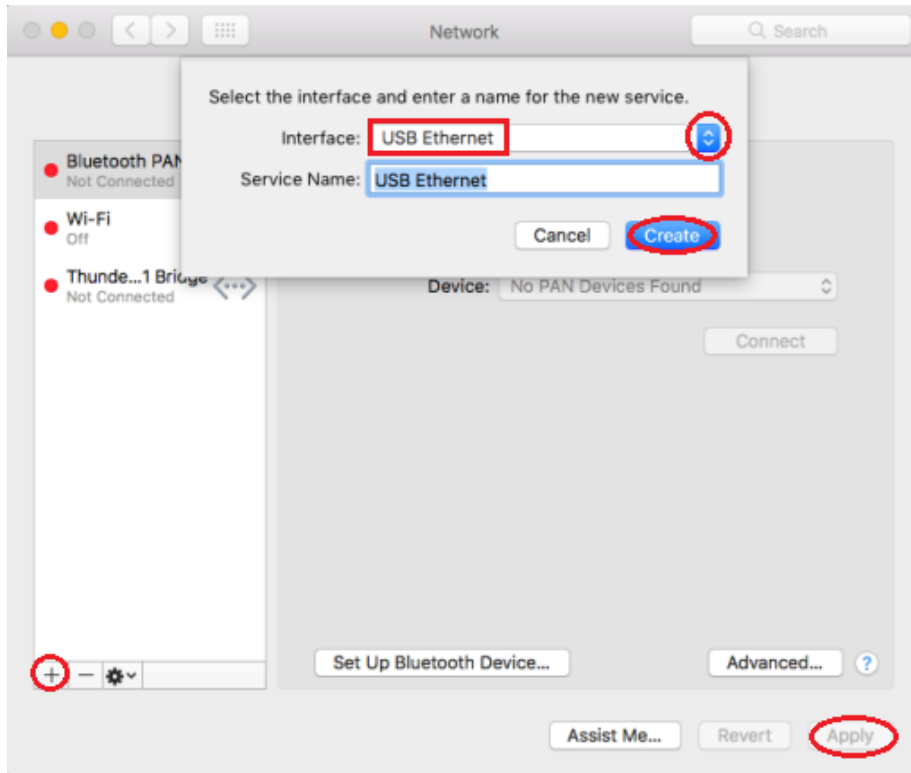
Tsengteki-MacBook-Air:~ allan$ **kextstat**
Index Refs Address   Size   Wired   Name (Version) <Linked Against>
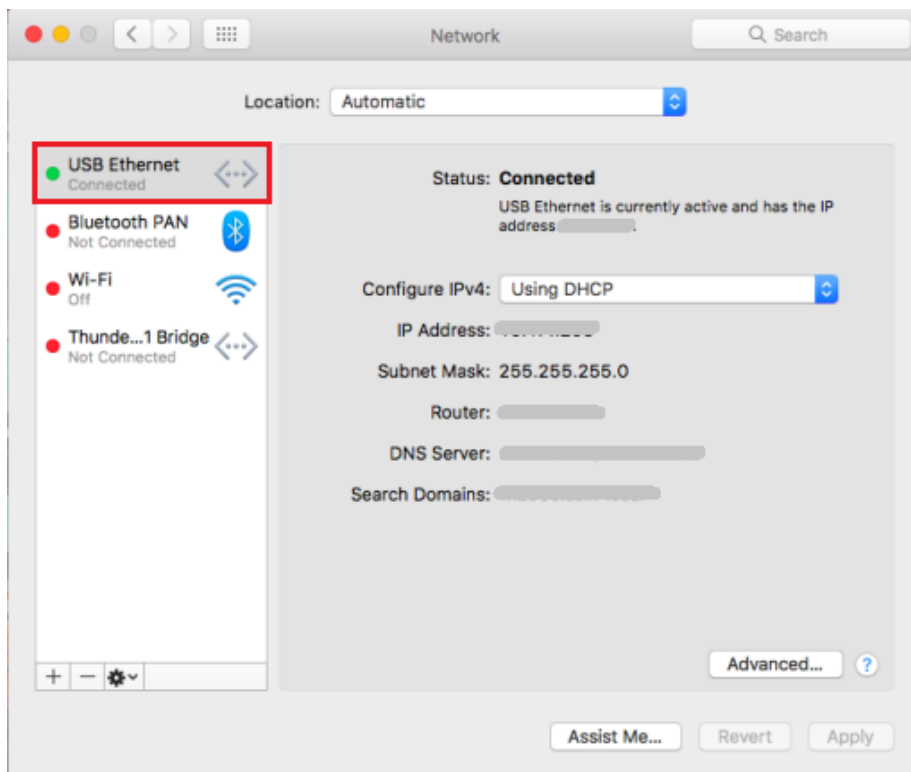…..
 142   0 0xffffff7f83298000 0xa000   0xa000   **com.asix.driver.ax88772 (1.5.0)** 5CC03423-7EA1-3B96-8653-E23A9E23303D <50 40 7 5 4 3 1>
 144   0 0xffffff7f832a2000 0x18000   0x18000   **com.apple.driver.usb.ethernet.asix (5.0.0)** 0DD762E9-3C44-39DB-BB30-6E69218E823A <78 77 50 39 5 4 3 1>
…..

7

Step 8: Please refer to below figure to add a new "USB Ethernet" network interface and then press the [Apply] button to take effect the new network interface.
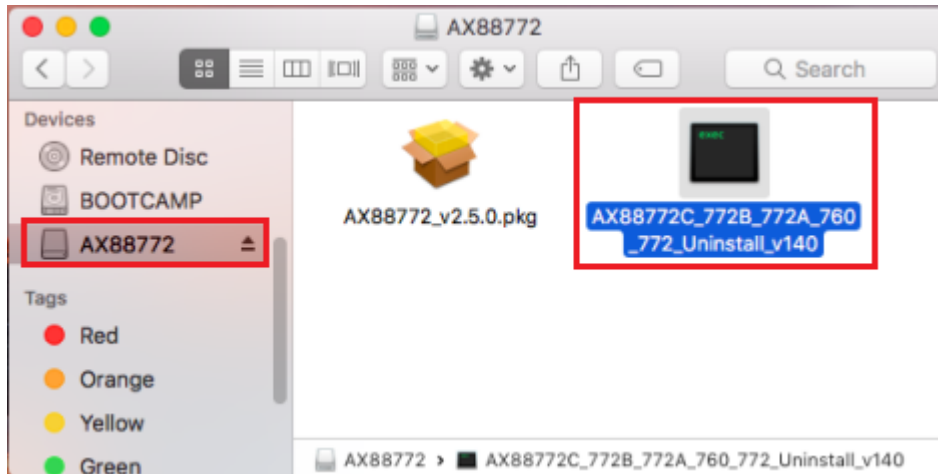

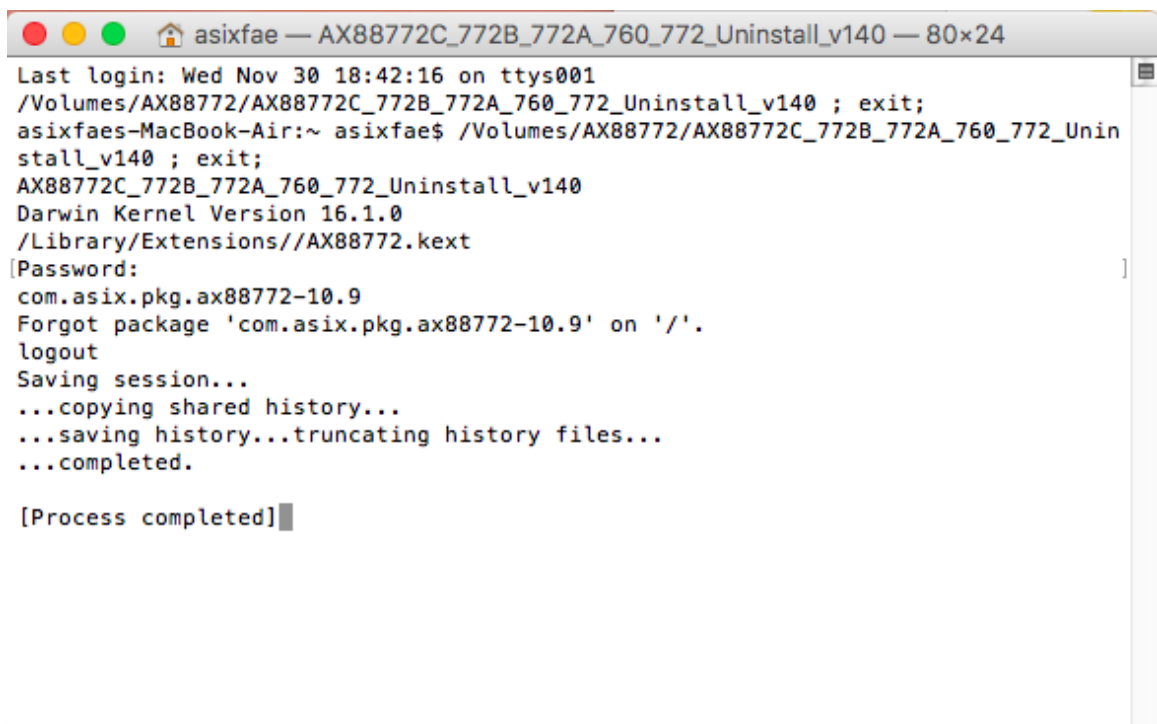Step 9: The new "USB Ethernet" driver should be ready now.

3. Driver Uninstallation Procedures

The following is an example of ASIX's AX88772C/772B/772A/760/772 macOS driver uninstallation procedures.

Step 1: Click the "AX88772.dmg", the following "AX88772" virtual disk will be appeared on the Devices list of your macOS system. (This "AX88772" virtual disk will be auto-removed after rebooting macOS system.)

Step 2: Click the "**AX88772C_772B_772A_760_772_uninstall_vxxx**" utility (xxx is the revision number of the driver uninstaller utility) to uninstall ASIX's AX88772C/772B/772A/760/772 macOS driver.
(You might need to enter your user password to finish the driver uninstallation operation)
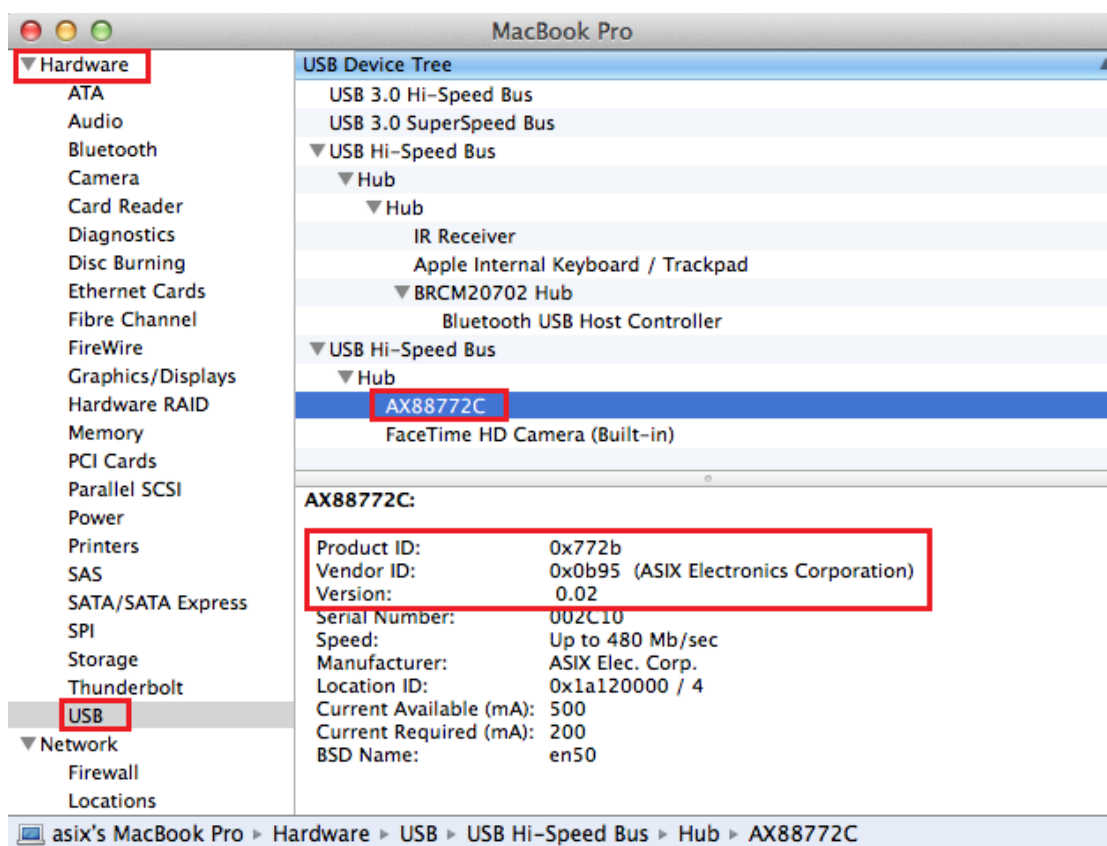
4. Troubleshooting

(The figures in this section are examples for your reference)

4-1. How to identify the Vendor ID and Product ID of your USB dongle?

Please refer to below picture to make sure if the Vendor ID and Product ID of your USB dongle are ASIX's default values or not? If no, please contact the manufacturer of your USB dongle to get a proper driver directly.

4-2. How to identify authentic ASIX USB to LAN product?

Some USB to LAN dongles use ASIX's default VID/PID but have non-authentic ASIX USB to LAN product inside. In order to identify these non-authentic ASIX USB to LAN products, please download the latest ASIX USB to LAN drivers from ASIX web site (http://www.asix.com.tw/products.php?op=ProductList&PLine=71) and refer to below procedures to make sure if your USB to LAN dongles include authentic ASIX USB to LAN product or not.
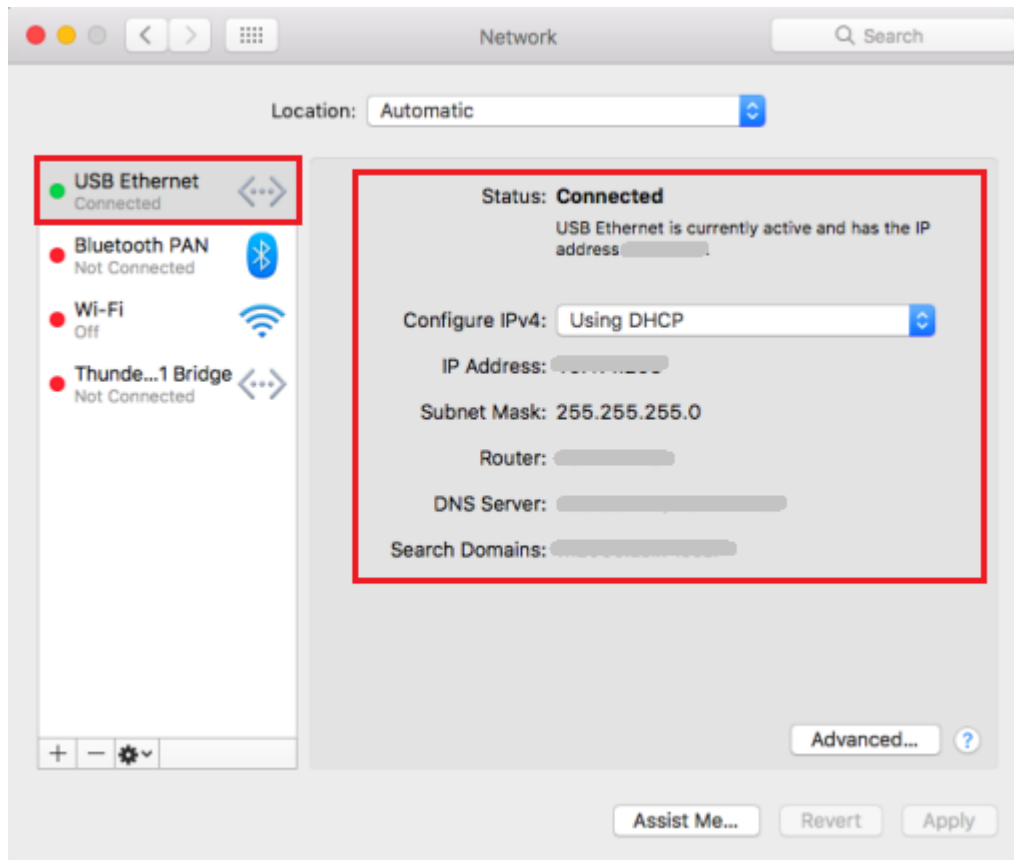
You can refer to below table to identify which ASIX product drivers should be downloaded.

ASIX Product	ASIX Vendor ID	Product ID
AX88772C	0B95h	772Bh
AX88772B	0B95h	772Bh/7E2Bh
AX88760	0B95h	772Ah
AX88772A	0B95h	772Ah
AX88772	0B95h	7720h

Figure 1.   ASIX USB to LAN Products Default VID/PID

1. Download the latest ASIX USB to LAN macOS driver from ASIX web site (http://www.asix.com.tw/products.php?op=ProductList&PLine=71).

2. Refer to Section 2 to install the ASIX USB to LAN macOS driver on your macOS platform and make sure if the driver can be installed successfully or not?

    If your USB to LAN device is ASIX product inside, you should install ASIX USB to LAN macOS driver successfully as below figure.

3. If you can't install ASIX USB to LAN driver successfully, you can refer to below figure to double check if your USB to LAN device has an authentic ASIX's product inside or not? If your USB to LAN device is Non-authentic ASIX product inside, you should see below "**Non-authentic ASIX product, ASIX does not support it.**" error message by running the "**sudo dmesg**" command on the macOS Terminal console.

    If you found your USB to LAN dongle has non-authentic ASIX USB to LAN product inside, you should contact the manufacturer of your dongle to get proper drivers directly.

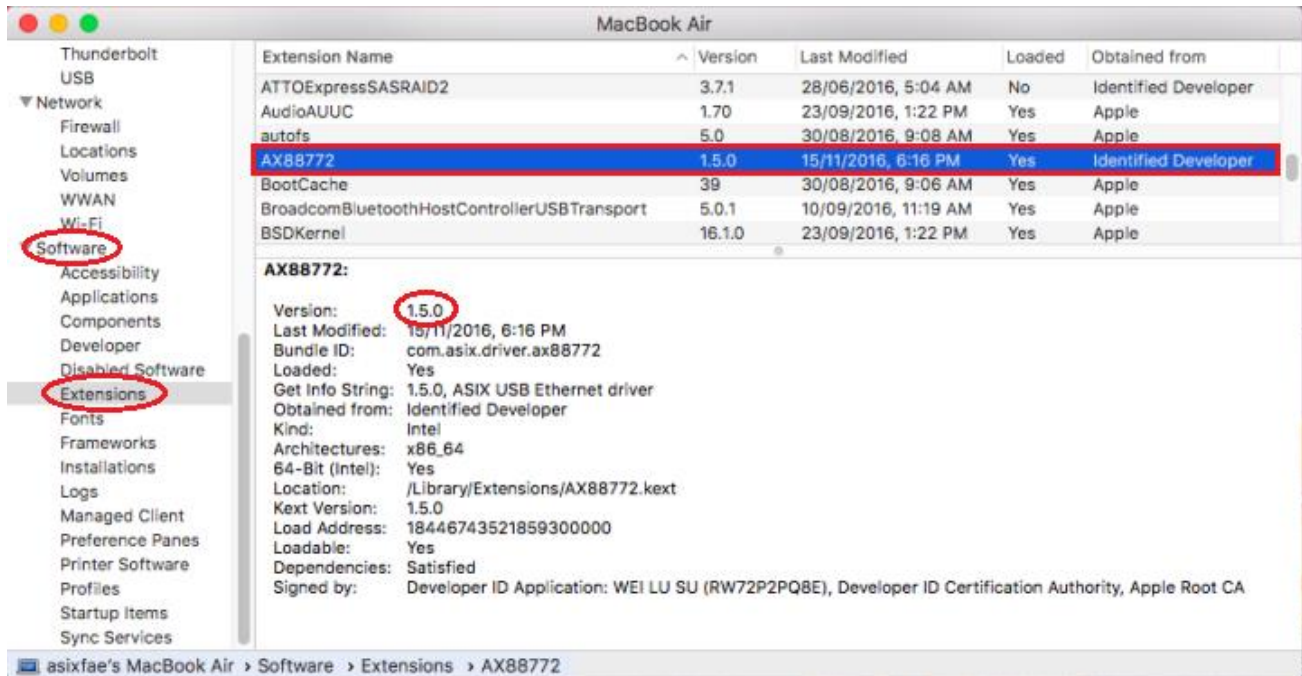**Authentic ASIX product normal driver messages:**

> **AX88772: start - Version number 1.0.0**
> **AX88772: Input buffers 64, Output buffers 64**
> **flow_divert_kctl_disconnect (0): disconnecting group 1**
> **AX88772: enable - Exit**
> **AX88772::monitorLinkStatus - Link down**
> **AX88772::monitorLinkStatus - Link up at 100 Mbps - Full Duplex (PHY regs 5,6:0xc1e1,0x000b)**
> **…**
> **AX88772: willTerminate**
> **AX88772: disable - Link down.**
> **AX88772: disable - Exit**
> **AX88772: didTerminate**
> **AX88772: stop – Exit**
> **…**

Non-authentic ASIX product error messages:

> **AX88772: start - Version number 1.0.0**
> **AX88772: Non-authentic ASIX product, ASIX does not support it.**
> **…..**

4-3. How to identify the installed macOS driver revision?

Please refer to below picture to identify the driver revision of the installed AX88772C/772B/772A/760/772 macOS driver.

Or run the "**kextstat**" or "**sudo dmesg**" commands in the Terminal console to identify the driver revision of the installed AX88772C/772B/772A/760/772 macOS driver.

Tsengteki-MacBook-Air:~ allan$ **kextstat**
Index Refs Address   Size   Wired   Name (Version) <Linked Against>
…..
  142   0 0xffffff7f83298000 0xa000   0xa000   **com.asix.driver.ax88772 (1.5.0)** 5CC03423-7EA1-3B96-8653-E23A9E23303D <50 40 7 5 4 3 1>
  144   0 0xffffff7f832a2000 0x18000   0x18000   **com.apple.driver.usb.ethernet.asix (5.0.0)** 0DD762E9-3C44-39DB-BB30-6E69218E823A <78 77 50 39 5 4 3 1>
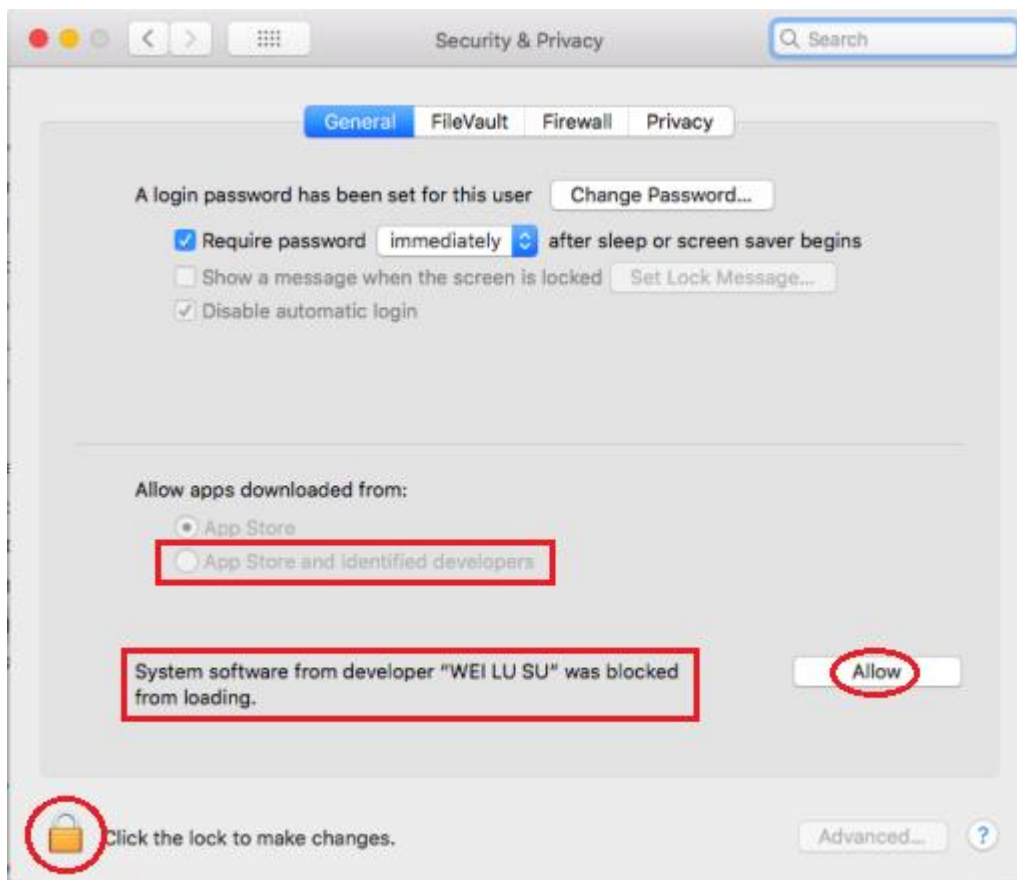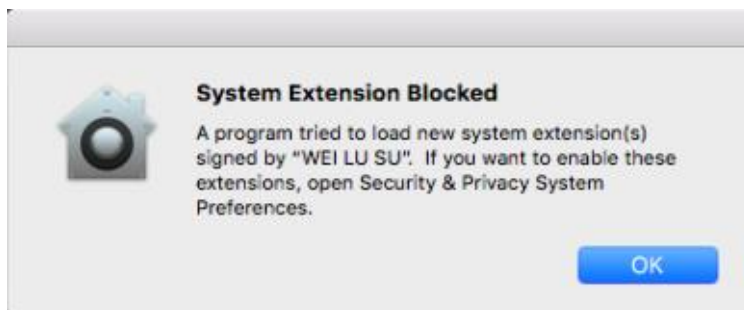…..

asixs-MacBook-Pro:~ allan$ **sudo dmesg**
…
AX88772: start - Version number 1.5.0
AX88772: Input buffers 64, Output buffers 64
AX88772: ethernet interface - ETHER_MODE_INTERNAL
AX88772: enable - Exit
AX88772: ethernet interface - ETHER_MODE_INTERNAL
AX88772::monitorLinkStatus - Link up at 100 Mbps - Full Duplex (PHY regs 5,6:0xc1e1,0x000b)
…

4-4. How to isolate driver failure issues after upgrading macOS system?

Please refer to below procedures to isolate the driver failure issues after upgrading macOS system.

1. Please refer to Section 3 to uninstall clearly the previous revision AX88772C/772B/772A/760/772 macOS driver firstly.
2. Please refer to Section 2 to install the latest AX88772C/772B/772A/760/772 macOS driver to see if the driver can work fine now or not?
3. If you saw below error message during running AX88772C/772B/772A/760/772 macOS driver installer, please refer to below figures to press "**Allow**" button to allow ASIX AX88772C/772B/772A/760/772 macOS driver to be loaded on macOS 10.13 or above system. You can refer to below URL for details. If you don't want to see this error message any more, you can set the "Allow apps downloaded from" option on the "Security & Privacy" console to "**App Store and identifier developers**" as below figure.

https://developer.apple.com/library/content/technotes/tn2459/_index.html#//apple_ref/doc/uid/DTS40017658

4. If you still have problems, please unplug/re-plug your AX88772C/772B/772A/760/772 dongle to see if it can improve your issues or not?

5. If you still have problems, please refer to Section 4-1 to make usre if your issues are caused by potential hardware compatibility issues on your suspected AX88772C/772B/772A/760/772 dongle or not? If yes, please contact the manufacturer support guys of your suspected AX88772C/772B/772A/760/772 dongle to isolate your issues,

6. If you still have problems, please refer to Section 2 & 4 to provide ASIX support (support@asix.com.tw) the captured driver installation screens step-by-step and run "**sudo dmesg**" command to get the driver debug messages for further investigation.

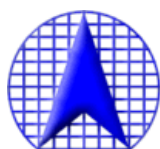# Appendix A. Apple macOS Native USB to LAN Drivers Supported Devices List

The Apple native driver "AppleUSBGigEthernet" on macOS 10.5 to 10.11 systems supports the following AX88178 USB-to-LAN dongles, and the Apple native driver "AppleUSBEthernet" on macOS 10.5 to 10.11 systems supports the following AX88772A/AX88760/AX88772 USB-to-LAN dongles.

On macOS 10.12 and above systems, the Apple "AppleUSBGigEthernet" native driver is already removed and the new Apple "AppleUSBEthernet" native driver supports all these AX88178/AX88772A/AX88760/AX88772 USB-to-LAN dongles.

Vendor	Model Name	VID	PID	Comments
ASIX Electronics Corp.	AX88178	0B95h	1780h	
ASIX Electronics Corp.	AX88772A/AX88760	0B95h	772Ah	
ASIX Electronics Corp.	AX88772	0B95h	7720h	
Apple	Apple USB Ethernet Adapter	05ACh	1402h	
Linksys	USB200M	13B1h	0018h	
D-Link Corp.	DUB-E100 Fast Ethernet	2001h	3C05h	
Linksys	USB1000	1737h	0039h	
Belkin Components	F5D5055	050Dh	5055h	
MelCo., Inc.	USB Gigabit Ethernet	0411h	006Eh	
I-O Data Device, Inc.	ETG-US2	04BBh	0930h	

For the other USB-to-LAN dongles with ASIX solution inside, please download the latest ASIX's standard macOS drivers from ASIX web site (http://www.asix.com.tw/download.php?sub=driver). If you still have problems, please contact the support guys of your USB-to-LAN dongle manufacturer for further support.

Note: Users should get proper driver from the manufacturer of your USB-to-LAN dongle if both Apple's native driver and ASIX's standard driver couldn't work with your USB-to-LAN dongle.

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