# Using the Optiboot Bootloader

https://github.com/Optiboot/optiboot

Main advantages:

- **Optiboot has nearly no wait time before starting the sketch.**
- Optiboot is much smaller (1.4kB instead of 2.7KB for the hex file of the Mega8).
- Uploading is faster (115200 Baud instead of 19200 Baud) .

Optiboot is now installed by default on the Arduino Uno. It can be installed on all older mega8, 168 or 328 based Arduinos.

## Optiboot installation

Use the Arduino "Board Manager", present in IDE versions 1.6.5 and later.

1. Find the desired Optiboot release on the [Optiboot Release page] (https://github.com/Optiboot/optiboot/releases).
2. Use the "Copy link address" feature of your browser to copy the URL of the associated **.json** file.
3. Paste this url into the "Additional Boards Manager URLs" field in the Arduino IDE "Preferences" pane. (Separate it from other URLs that might be present with a comma or click the icon to the right of the field to insert it on a new line.)
4. After closing the Preferences window, the **Tools/Boards/Boards Manager** menu should include an entry for that version of Optiboot. Select that entry and click the **Install** button.

For additional installation information, see the [Optiboot AddingOptibootChipsToIde Wiki page] (https://github.com/Optiboot/optiboot/wiki/AddingOptibootChipsToIde)

## Missing menu in Arduino IDE for Mega8

After the installation procedure, there is eventually still no Mega8 to be found in the Menu Tools - Boards To get an entry in the menu, append this to the end of boards.txt:

```
atmega8_o.name= Atmega8 Optiboot

atmega8_o.upload.tool=avrdude
atmega8_o.upload.protocol=arduino
atmega8_o.upload.maximum_size=7680
atmega8_o.upload.speed=115200

atmega8_o.bootloader.tool=avrdude
```

```
atmega8_o.bootloader.low_fuses=0xbf
atmega8_o.bootloader.high_fuses=0xdc
atmega8_o.bootloader.path=optiboot
atmega8_o.bootloader.file=optiboot/optiboot_atmega8.hex
atmega8_o.bootloader.unlock_bits=0x3F
atmega8_o.bootloader.lock_bits=0x0F

atmega8_o.build.mcu=atmega8
atmega8_o.build.f_cpu=16000000L
atmega8_o.build.core=arduino
atmega8_o.build.variant=standard
```

After restarting the Arduino IDE, a board „Atmega Optiboot“ is found in the Tools – Board menu.

A description of the boards.txt file is found here:

https://github.com/arduino/Arduino/wiki/Arduino-IDE-1.5-3rd-party-Hardware-specification

# To burn Optiboot onto an Arduino board

1. Select board type
2. Connect the board to an ISP programmer
   My programmer is a mySmartUSB light. The setting for this is STK500 as ISP
3. Menu Tools - Burn Bootloader
4. Choose Optiboot board type to upload a sketch.