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- Start with Arduino UNO WiFi



ARDUINO IDE v. 1.8.1



Arduino PRIMO



Arduino STAR - OTTO



Arduino UNO WiFi



Arduino or Raspberry Pi?

February 22 2017



New IDE for all Arduino boards!

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Start with Arduino UNO WiFi

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Connecting the Arduino UNO WiFi

To connect the Arduino UNO WiFi at your computer, you'll need an USB cable.

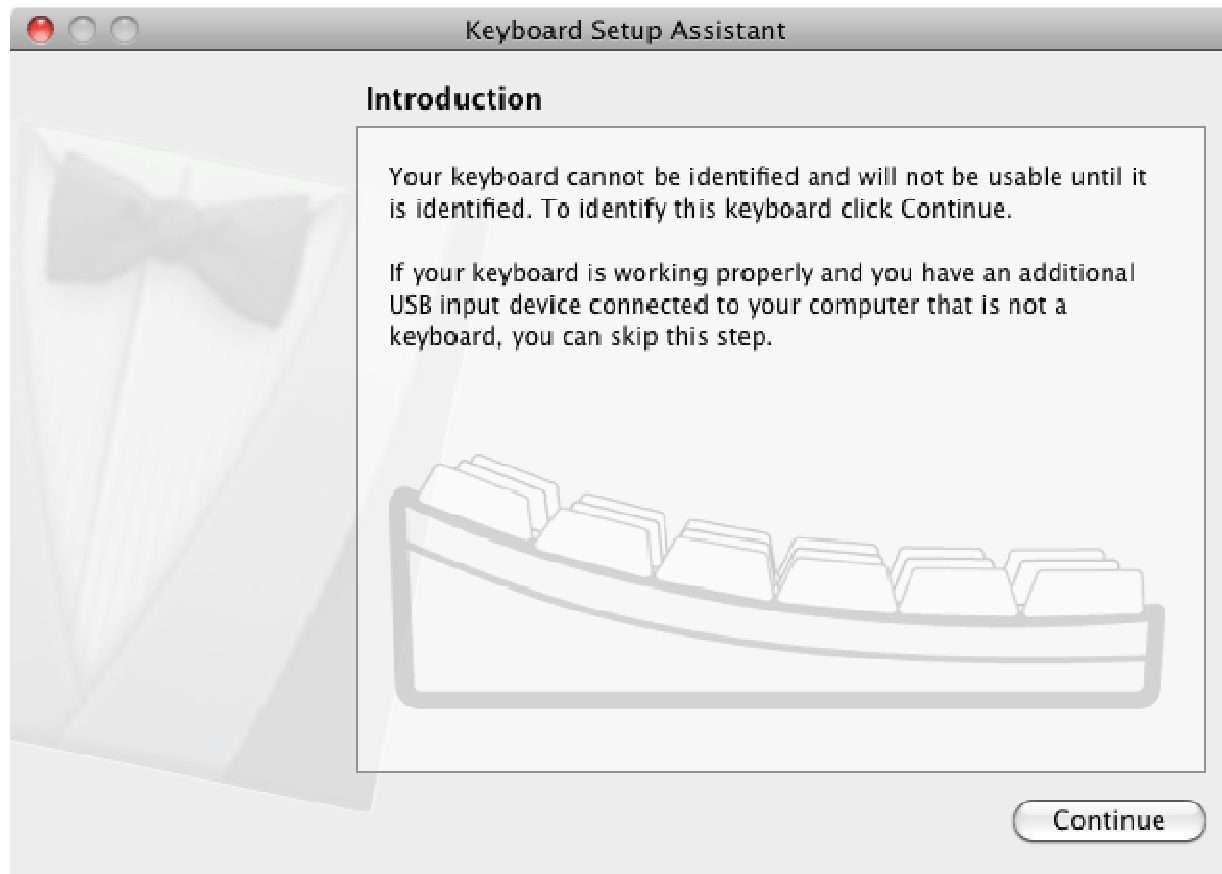
This USB cable provides the power and the data at the board.

When programming the UNO WiFi, you must choose "**Arduino UNO WiFi**" from the "**Tools > Board**" menu in the Arduino IDE.

Installing Drivers for the UNO WiFi

OSX

The first time you plug a UNO WiFi into a Mac, the "Keyboard Setup Assistant" will launch. There's nothing to configure with the UNO WiFi, so you can close this dialogue by clicking the red button in the top left of the window.



Windows

If you previously installed Arduino IDE, you already have drivers installed.

If you haven't yet installed Arduino IDE, download the Windows version of the Arduino software from the official page [here](#).

When the download finishes, launch the file to install the software and the drivers.

If you downloaded the **.zip** version of the IDE, unzip the downloaded file. Make sure to preserve the folder structure.

Now your drivers will be downloaded and installed from Internet, directly from Windows.

If you have issues, you can find the "drivers" folder inside the unzipped file, for manual installation.

Linux

There is no need to install drivers for Ubuntu 10.0.4

In some computers, you need to setup user permissions and some udev rules.

You can find detailed informations on how to achieve this at [this page](#).

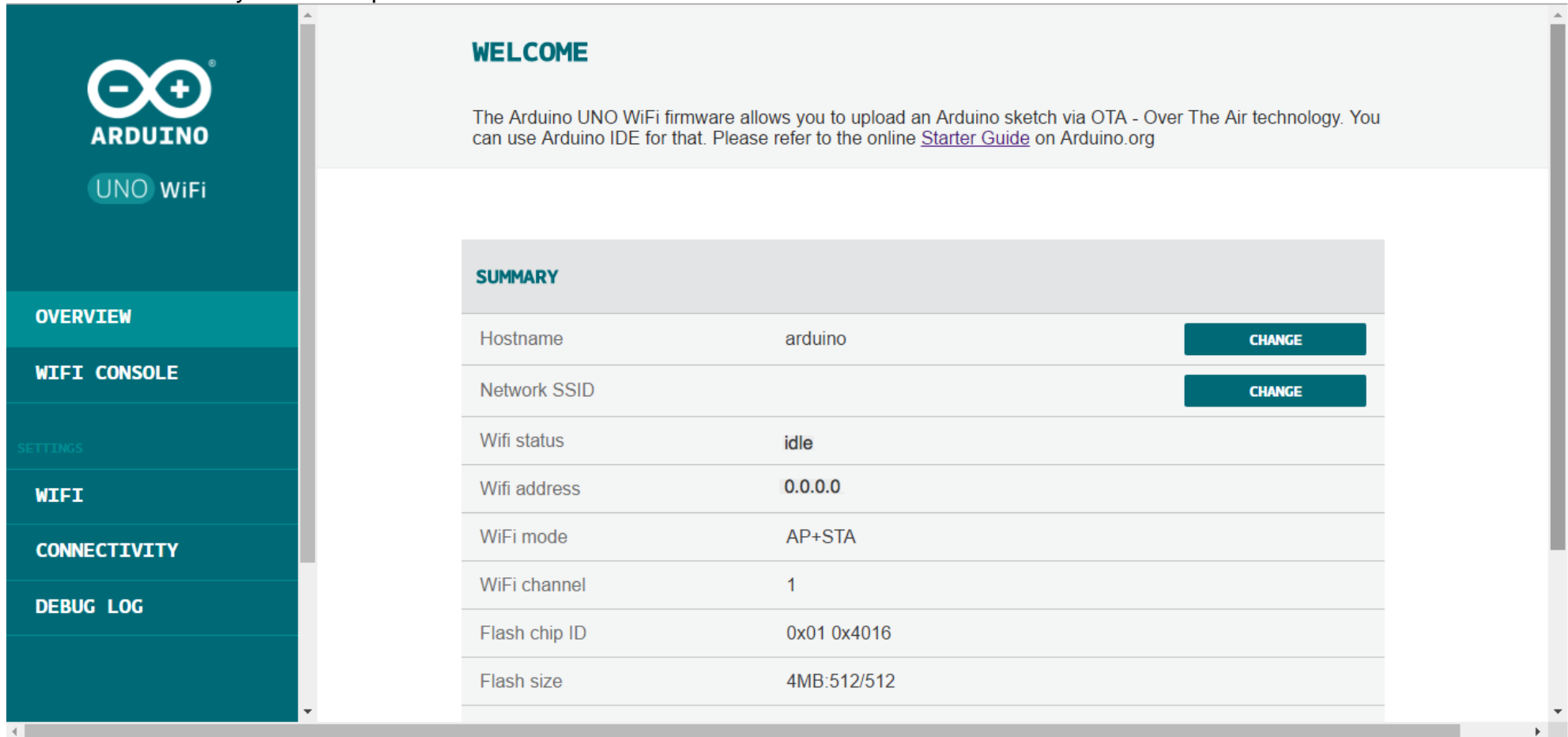
First Configuration

After powering the board, wait about a minute.

Now, connect your PC/MAC WiFi on Arduino UNO WiFi AP, ESSID like this: **Arduino-Uno-WiFi-xxxxxx**

Open your browser on PC/MAC and connect at this link: **<http://192.168.240.1/>**

This is the view that you must aspect:

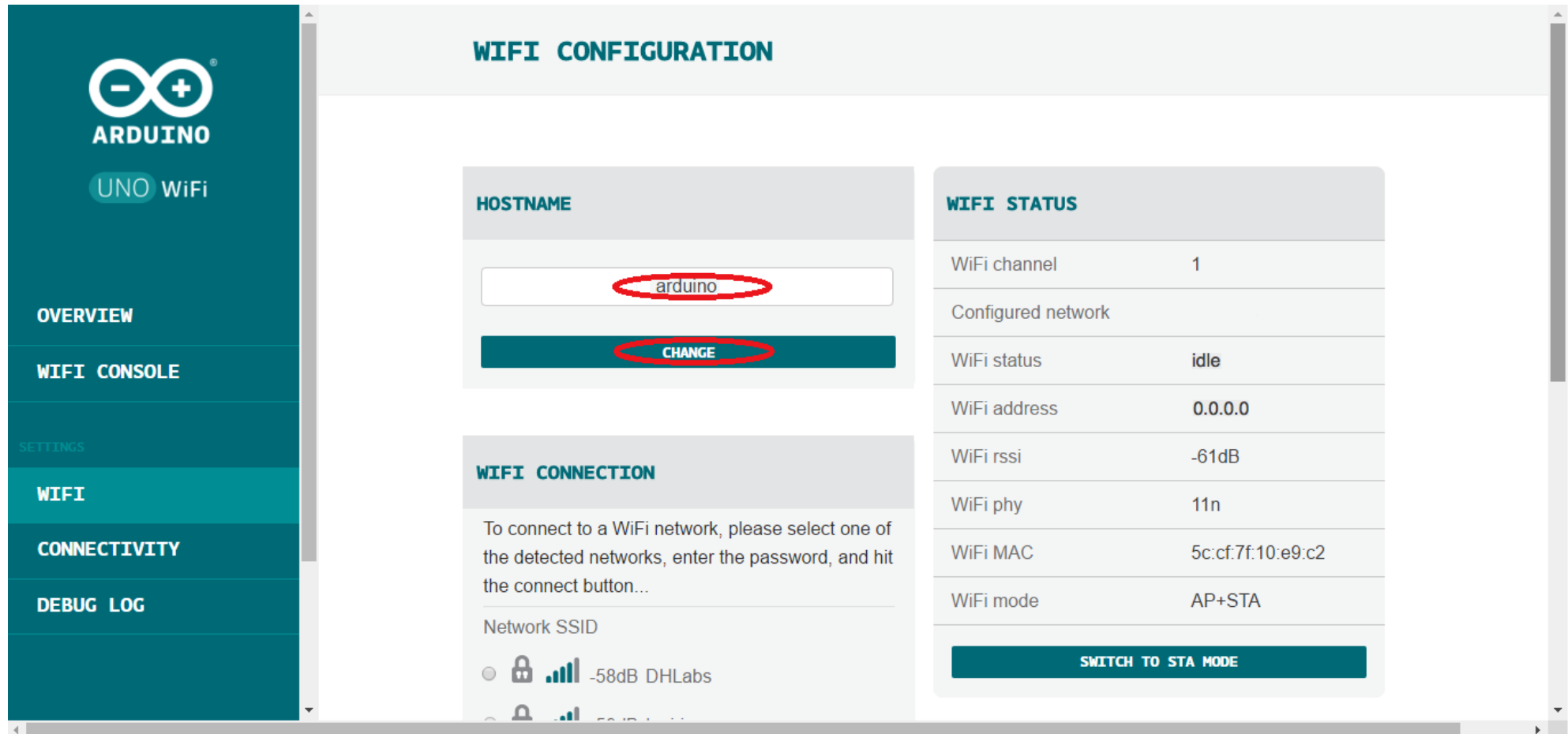


The screenshot displays the Arduino UNO WiFi web interface. On the left is a dark teal sidebar with the Arduino logo and 'UNO WiFi' text. The sidebar menu includes 'OVERVIEW', 'WIFI CONSOLE', 'SETTINGS', 'WIFI' (highlighted), 'CONNECTIVITY', and 'DEBUG LOG'. The main content area has a 'WELCOME' header with a brief description of the OTA upload feature. Below this is a 'SUMMARY' table listing various system parameters and their current values, with 'CHANGE' buttons for Hostname and Network SSID.

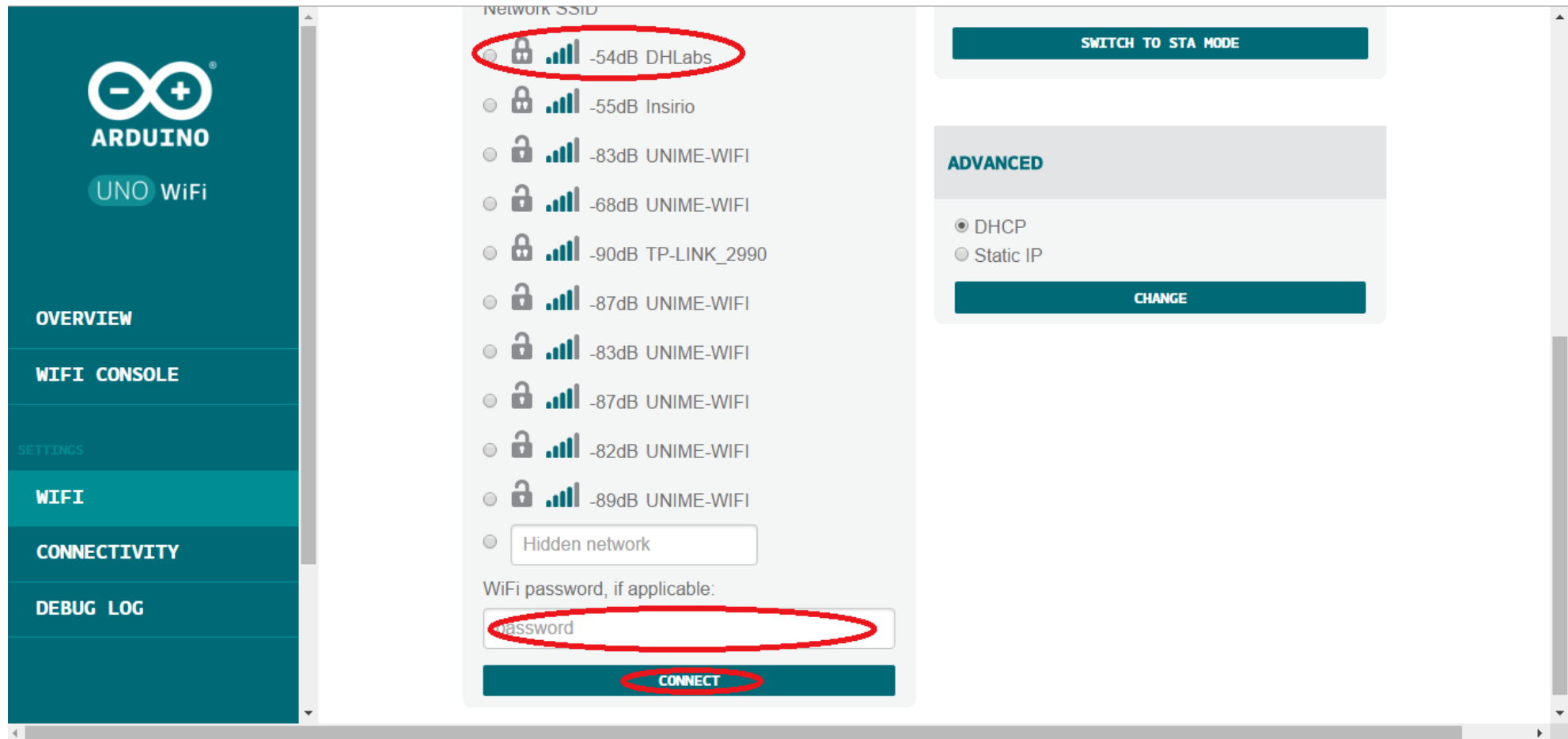
SUMMARY		
Hostname	arduino	CHANGE
Network SSID		CHANGE
Wifi status	idle	
Wifi address	0.0.0.0	
WiFi mode	AP+STA	
WiFi channel	1	
Flash chip ID	0x01 0x4016	
Flash size	4MB:512/512	

To modify the Hostname click on **CHANGE** or select the **WiFi** on the left menu. You can use the name that you prefer for identify more easy

the board. Write new name and after click on **CHANGE**.



Connect the Arduino UNO WiFi to yours AccessPoint Router, selecting your network from **WiFi** Menu, insert the correct password and after click on **CONNECT**, as shown in the below image:



When the board will be connected to network, it will be shown the board ip address:

Connected! Got IP 192.168.60.110

WIFI CONFIGURATION

HOSTNAME

CHANGE

WIFI STATUS

WiFi channel	1
Configured network	DHLabs
WiFi status	got IP address
WiFi address	192.168.60.110
WiFi rssi	-53dB
WiFi phy	11n
WiFi MAC	5c:cf:7f:10:e9:c2
WiFi mode	AP+STA

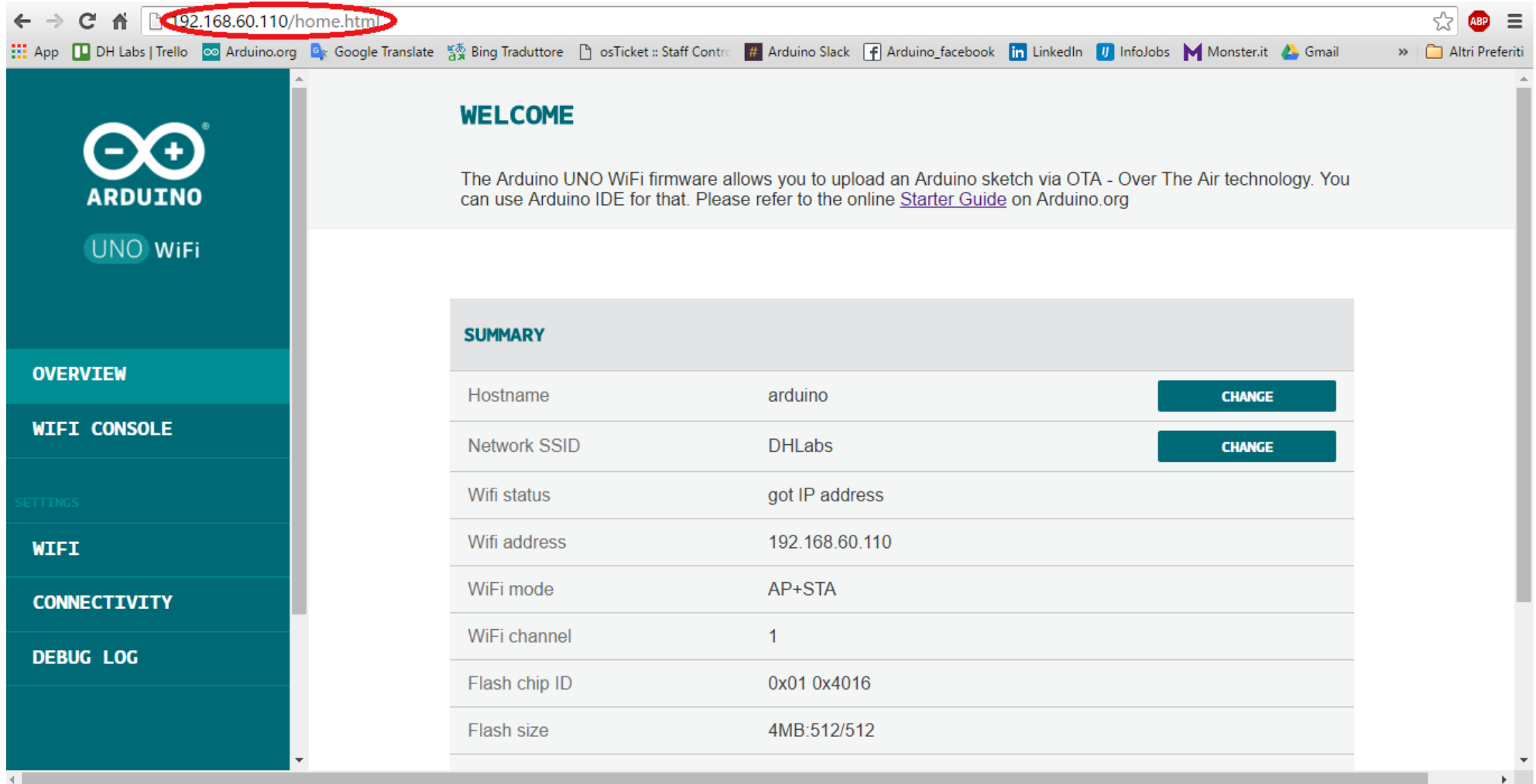
SWITCH TO STA MODE

WIFI CONNECTION

If you are in the same network, go to 192.168.60.110, else connect to network DHLabs first.

To connect to a WiFi network, please select one of the detected networks, enter the password, and hit the connect button...

Now, connect the PC at the same board network and try to access to the board inserting the ip address on the browser.



The screenshot shows a web browser window with the address bar displaying `192.168.60.110/home.html`. The browser's address bar and the URL are circled in red. The page has a teal sidebar on the left with the Arduino logo and the text "UNO WiFi". The sidebar contains a menu with the following items: OVERVIEW, WIFI CONSOLE, SETTINGS, WIFI, CONNECTIVITY, and DEBUG LOG. The main content area has a "WELCOME" heading and a paragraph explaining that the Arduino UNO WiFi firmware allows uploading sketches via OTA. Below this is a "SUMMARY" table with the following data:

SUMMARY		
Hostname	arduino	CHANGE
Network SSID	DHLabs	CHANGE
Wifi status	got IP address	
Wifi address	192.168.60.110	
WiFi mode	AP+STA	
WiFi channel	1	
Flash chip ID	0x01 0x4016	
Flash size	4MB:512/512	

Click on **WiFi** in the left menu and change the wifi configuration mode switching to **STA MODE**, as shown in the below image:

WIFI CONFIGURATION

HOSTNAME

arduino

CHANGE

WIFI CONNECTION

To connect to a WiFi network, please select one of the detected networks, enter the password, and hit the connect button...

Network SSID

🔒 -48dB DHI abs

WIFI STATUS

WiFi channel	1
Configured network	DHILabs
WiFi status	got IP address
WiFi address	192.168.60.110
WiFi rssi	-53dB
WiFi phy	11n
WiFi MAC	5c:cf:7f:10:e9:c2
WiFi mode	AP+STA

SWITCH TO STA MODE

Warning:

It is important switching in STA MODE because so the board will be visible on the Arduino IDE and, furthermore, you will be able to protect it from possible attacks, since it will no longer be visible as open network.

Now it should appear the below screen.

WIFI CONFIGURATION

HOSTNAME

arduino

CHANGE

WIFI CONNECTION

To connect to a WiFi network, please select one of the detected networks, enter the password, and hit the connect button...

Network SSID

Arduino-Ind-101-B4218AFA0B72

WIFI STATUS

WiFi channel	1
Configured network	DHLabs
WiFi status	got IP address
WiFi address	192.168.60.110
WiFi rssi	-59dB
WiFi phy	11n
WiFi MAC	5c:cf:7f:10:e9:c2
WiFi mode	STA

SWITCH TO STA+AP MODE

Now, you can access to webpage using the your hostname: <http://hostname.local>
Your Arduino UNO WiFi is ready.

Now you can use your board and you can upload the first sketch following this [other guide](#).

If you want more information on the Web-panel of the Arduino UNO WiFi click [here](#).

Software

you must download new Arduino IDE that support Arduino UNO WiFi, from this link:

<http://www.arduino.org/software#ide>

We suggest you to use [Ciao](#) Library for using the Arduino UNO WiFi.
You can include in your project that library using the Arduino IDE menu.

RestAPI example with ThingSpeak

[Arduino UNO WiFi RestAPI Example with ThingSpeak](#)

Follow all steps of this guide to upload your first sketch on Arduino UNO WiFi.

Arduino IDE - download and install

First you need the Arduino.org IDE.

You can download it from [here](#).

After that you have downloaded the latest version Arduino IDE, extract it using 7-zip.

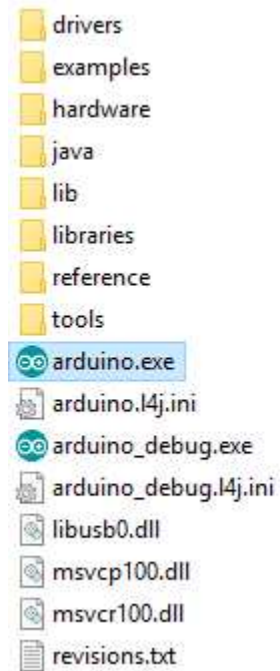
Now double click to install it, if you have downloaded the installer file.

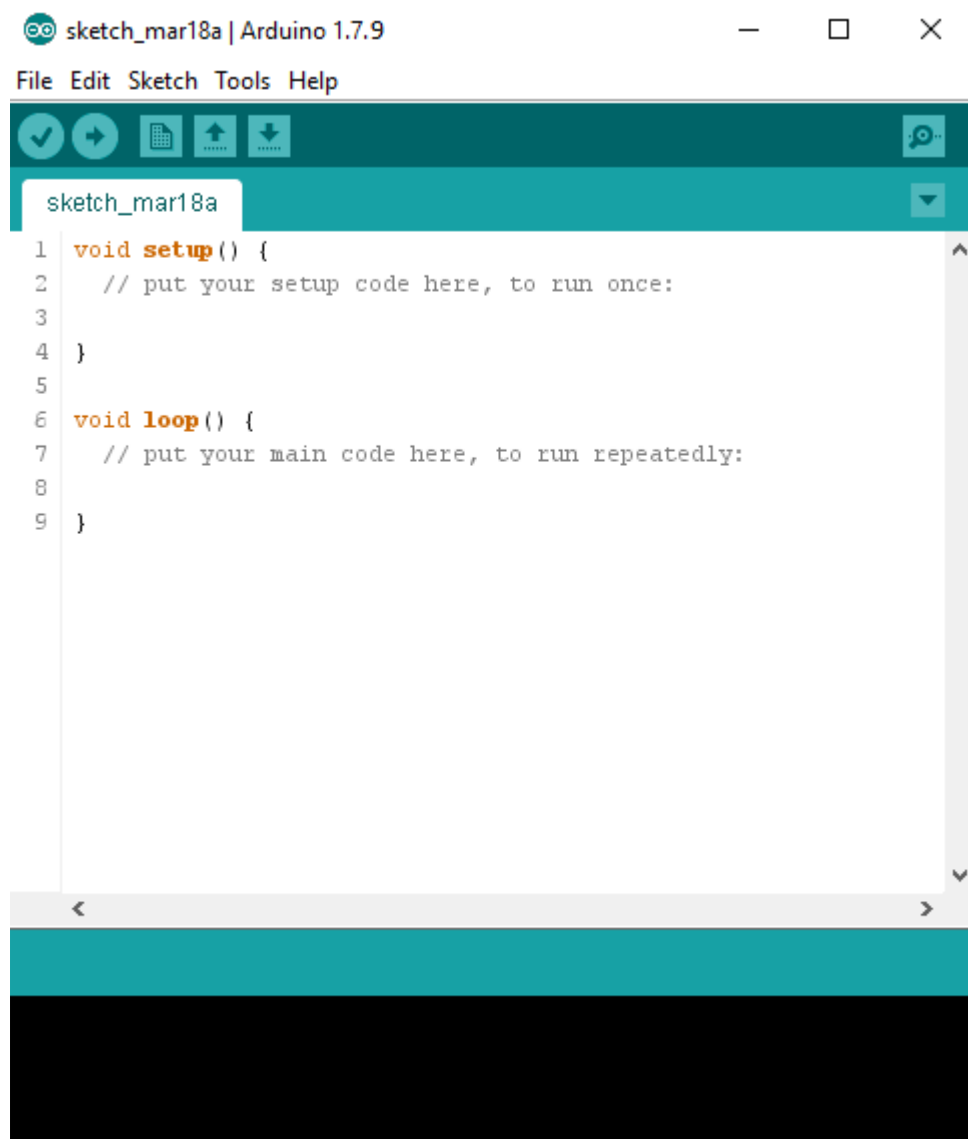
Note:

Keep in mind that to use the Arduino UNo Wifi you need the Arduino.org IDE 1.7.9 or later.

Lauch the Arduino IDE

Open the Arduino folder and double-click on the Arduino application.

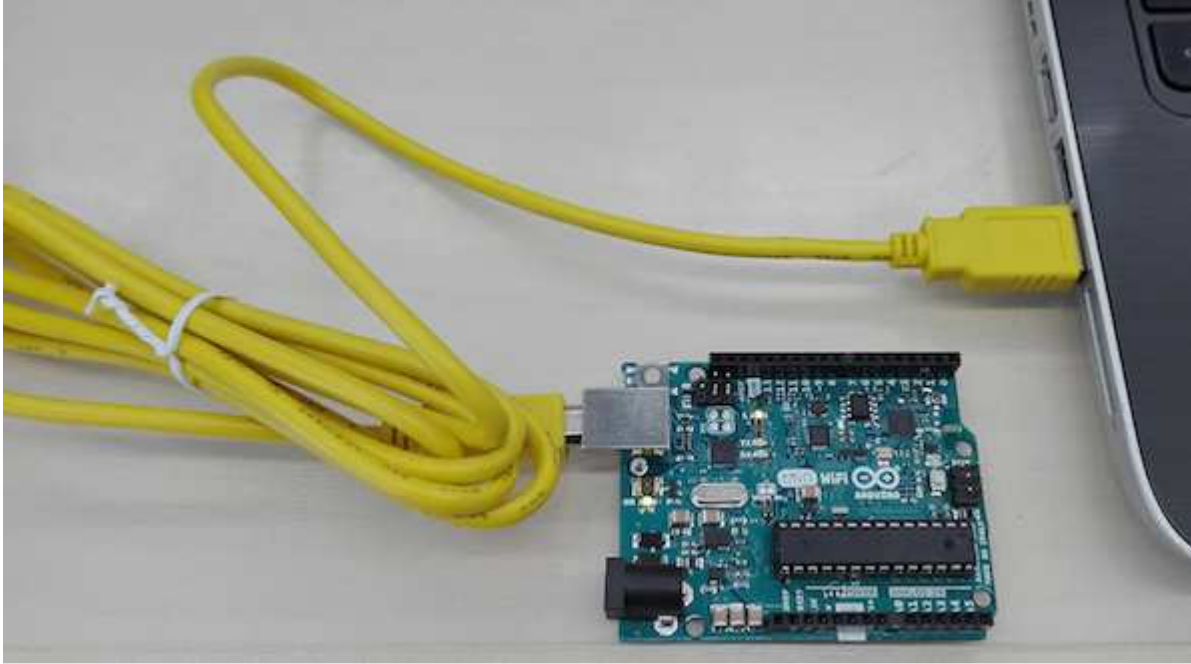


**Warning:**

If you are a Windows user and you have downloaded the administrator version then you need to click on right button of mouse and select the voice "Execute as administrator", to start the program.

Connect the board

Connect the Arduino UNO WiFi board to your computer using the USB cable, as shown in the below image:



The green power LED (labelled PWR) should go on.

Note:

When you connect your board, pay attention that the cable is correctly inserted then push strong.

Upload sketch

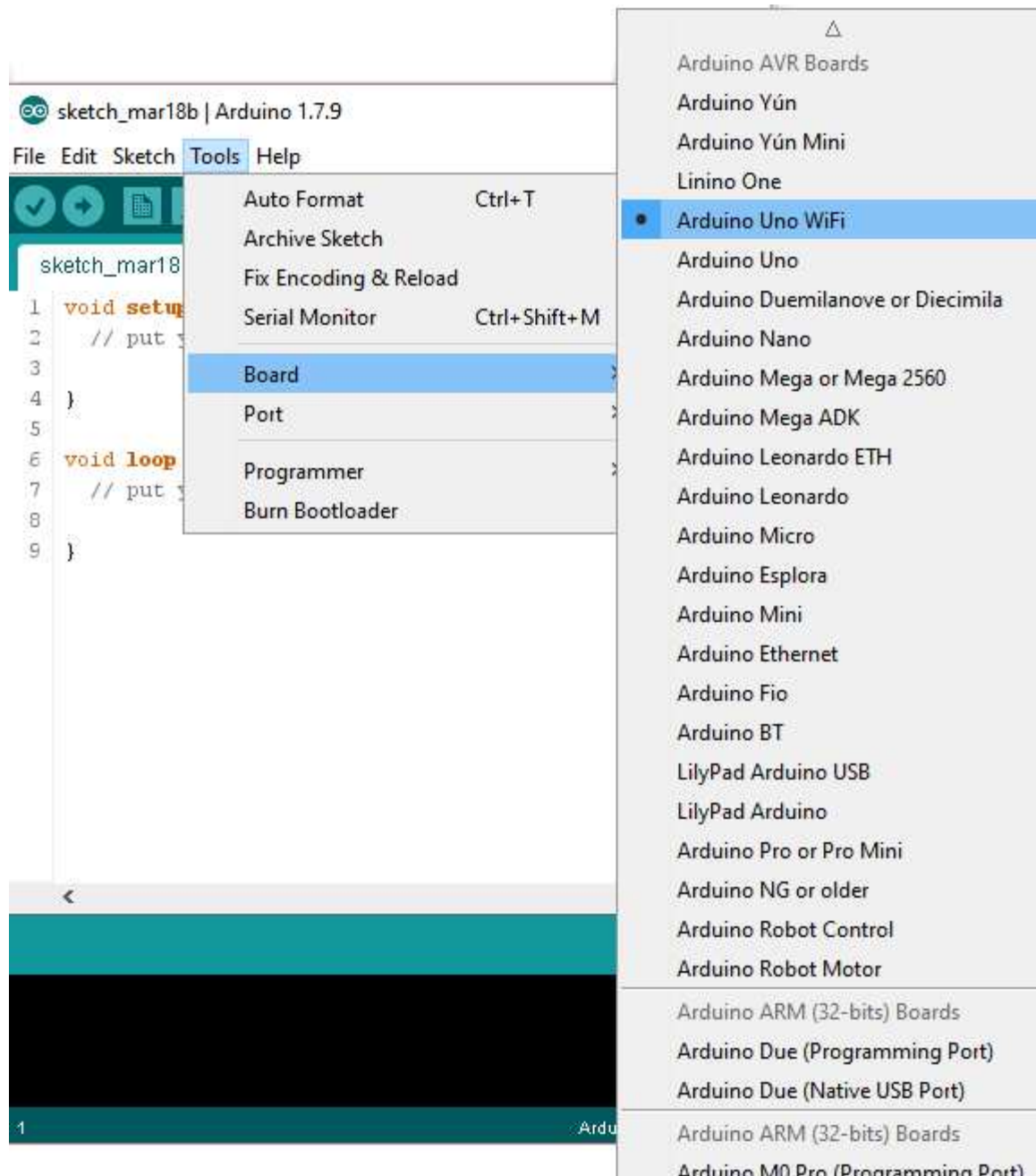
The Arduino UNO Wifi can be programmed in two ways: via Serial or via OTA, both these methods will be shown in this guide.

Programming via Serial

This is the classic procedure used to program all Arduino boards.

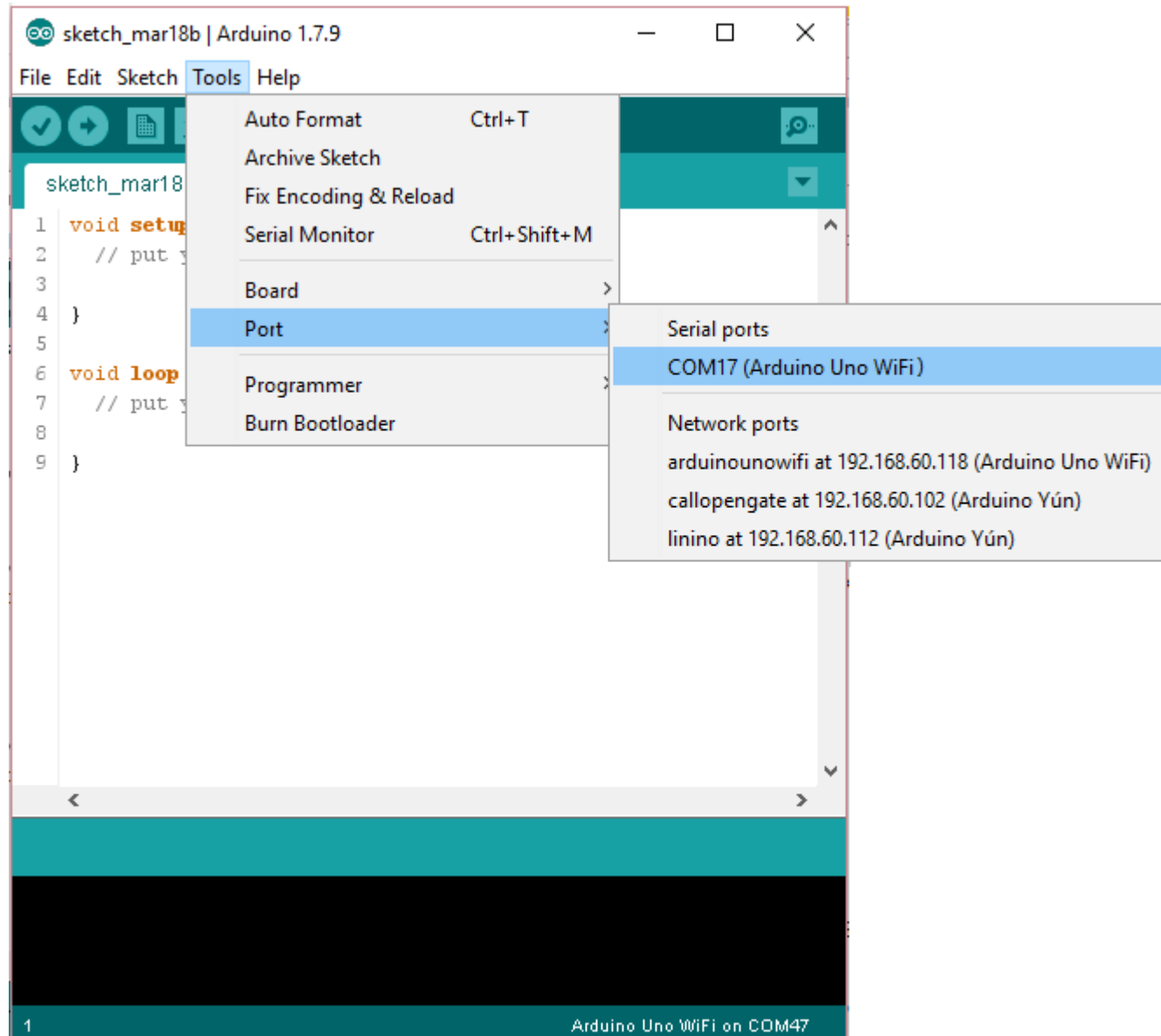
Select the board

Select the **Arduino Uno WiFi** as board from **Tools>Board** menu.



Select port

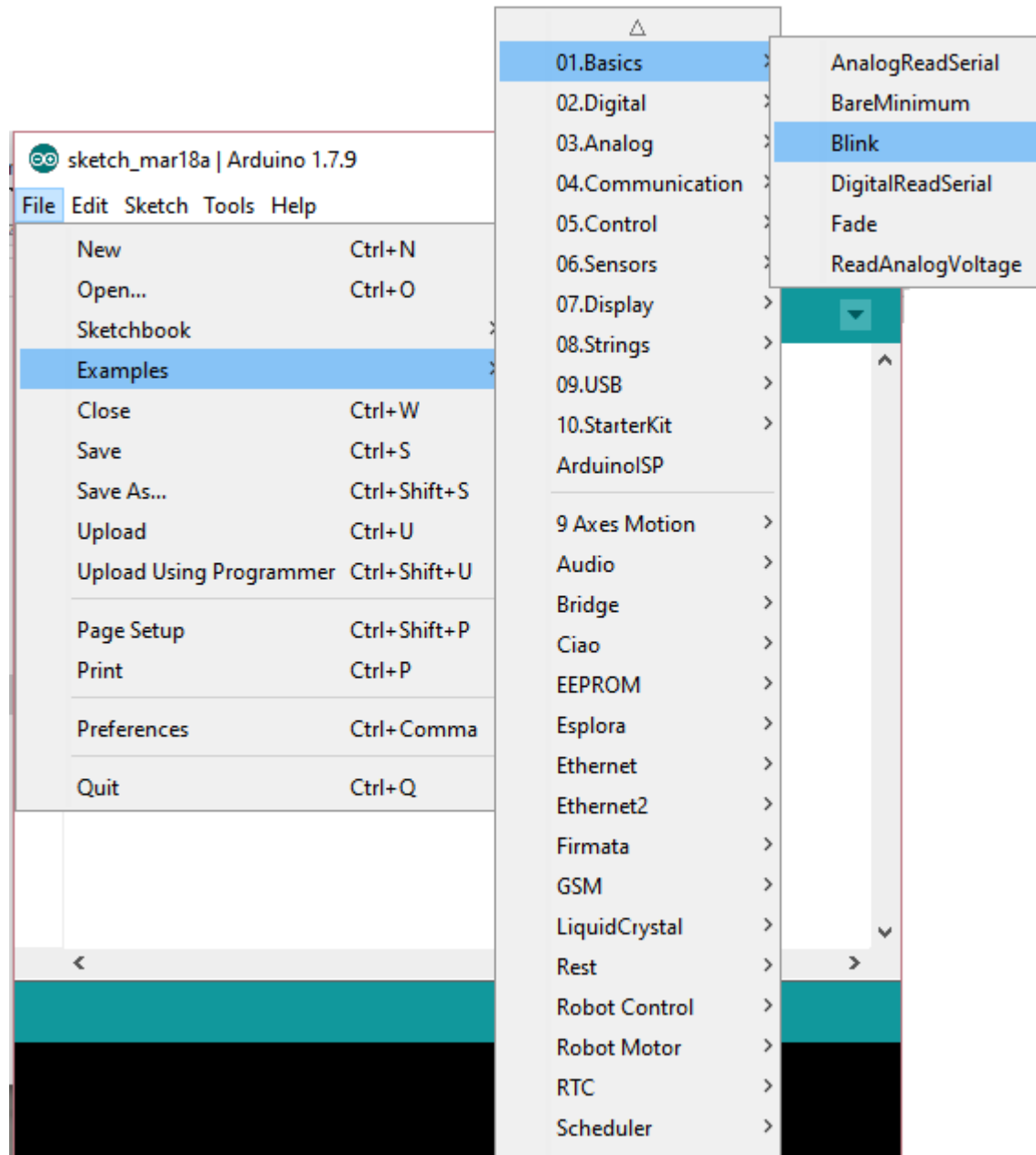
If the board is correctly connected to PC then it will appear in **Tool>Port** menu a device called **COMxx(Arduino Uno WiFi)** as shown in the below image, then select it:

**Note:**

If it doesn't appear as serial device then check the connection, try to change the cable or the USB port.

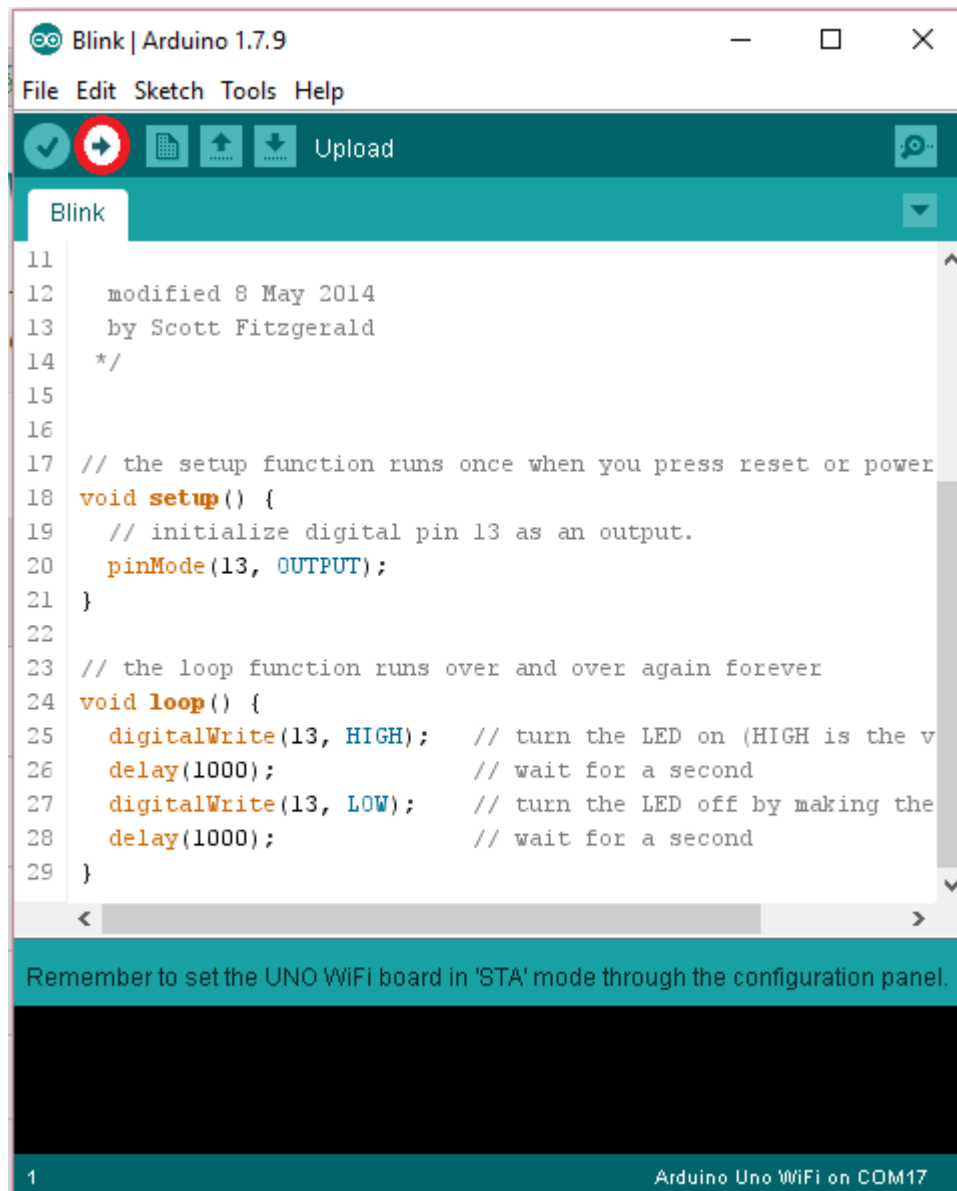
Open the Blink Sketch

Select the **Blink** sketch from **File>Examples>1.Basics** menu.



Upload the sketch

Now you can upload the sketch, clicking on **Upload** button as shown in the below image:

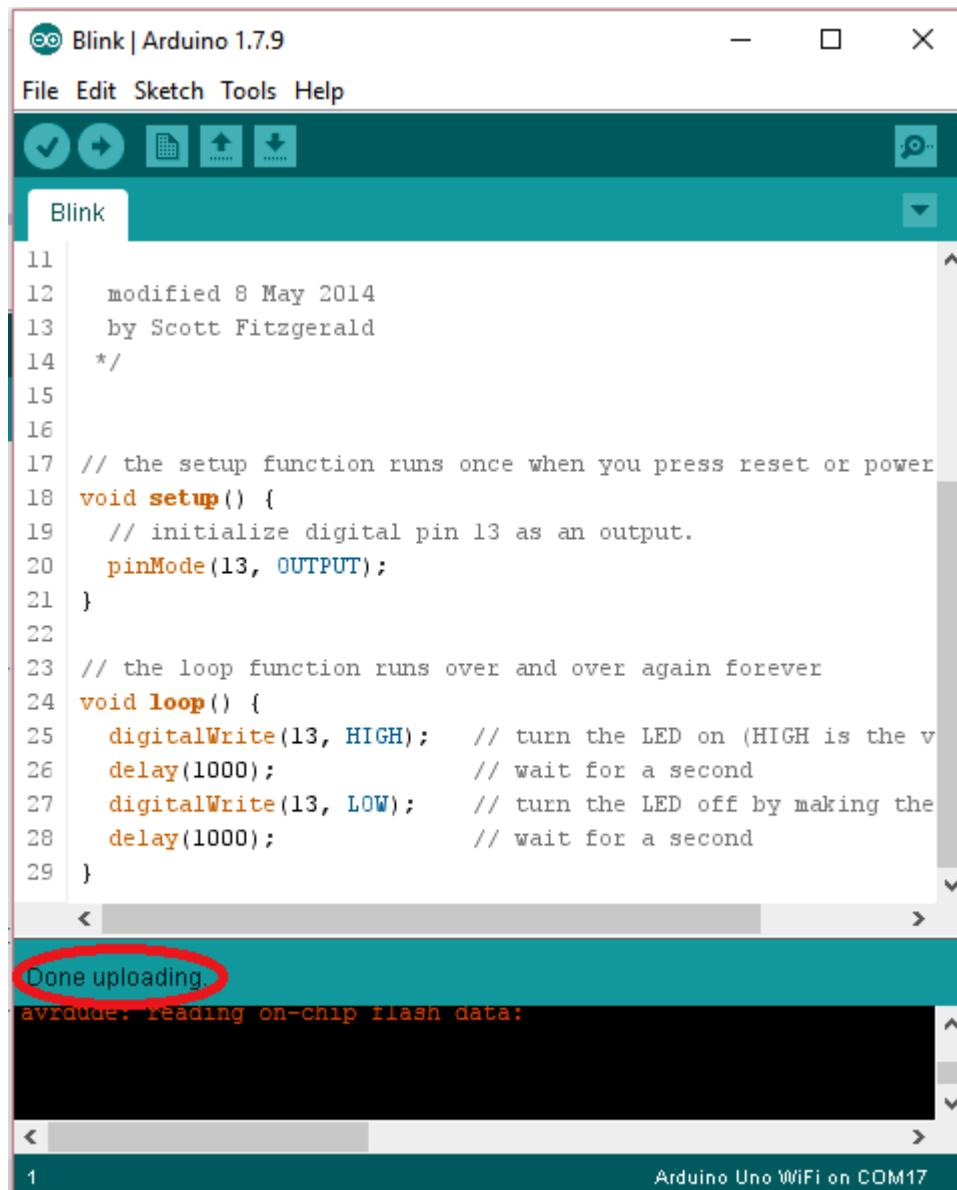


```
11
12   modified 8 May 2014
13   by Scott Fitzgerald
14   */
15
16
17   // the setup function runs once when you press reset or power
18   void setup() {
19     // initialize digital pin 13 as an output.
20     pinMode(13, OUTPUT);
21   }
22
23   // the loop function runs over and over again forever
24   void loop() {
25     digitalWrite(13, HIGH);   // turn the LED on (HIGH is the v
26     delay(1000);              // wait for a second
27     digitalWrite(13, LOW);    // turn the LED off by making the
28     delay(1000);              // wait for a second
29   }
```

Remember to set the UNO WiFi board in 'STA' mode through the configuration panel.

1 Arduino Uno WiFi on COM17

Wait that the operation is completed.



The screenshot shows the Arduino IDE interface. The title bar reads 'Blink | Arduino 1.7.9'. The menu bar includes 'File', 'Edit', 'Sketch', 'Tools', and 'Help'. Below the menu bar is a toolbar with icons for checking, running, serial monitor, and uploading/downloading. The sketch editor displays the 'Blink' sketch with the following code:

```
11
12   modified 8 May 2014
13   by Scott Fitzgerald
14   */
15
16
17   // the setup function runs once when you press reset or power
18   void setup() {
19     // initialize digital pin 13 as an output.
20     pinMode(13, OUTPUT);
21   }
22
23   // the loop function runs over and over again forever
24   void loop() {
25     digitalWrite(13, HIGH);   // turn the LED on (HIGH is the v
26     delay(1000);              // wait for a second
27     digitalWrite(13, LOW);    // turn the LED off by making the
28     delay(1000);              // wait for a second
29   }
```

Below the sketch editor, a status bar shows 'Done uploading.' circled in red. Below that, a serial monitor window displays 'avrdude: Reading on-chip flash data:'. At the bottom, a status bar indicates '1' and 'Arduino Uno WiFi on COM17'.

Programming via OTA

Power the board, for example connected it to PC using the USB cable or using an external power.

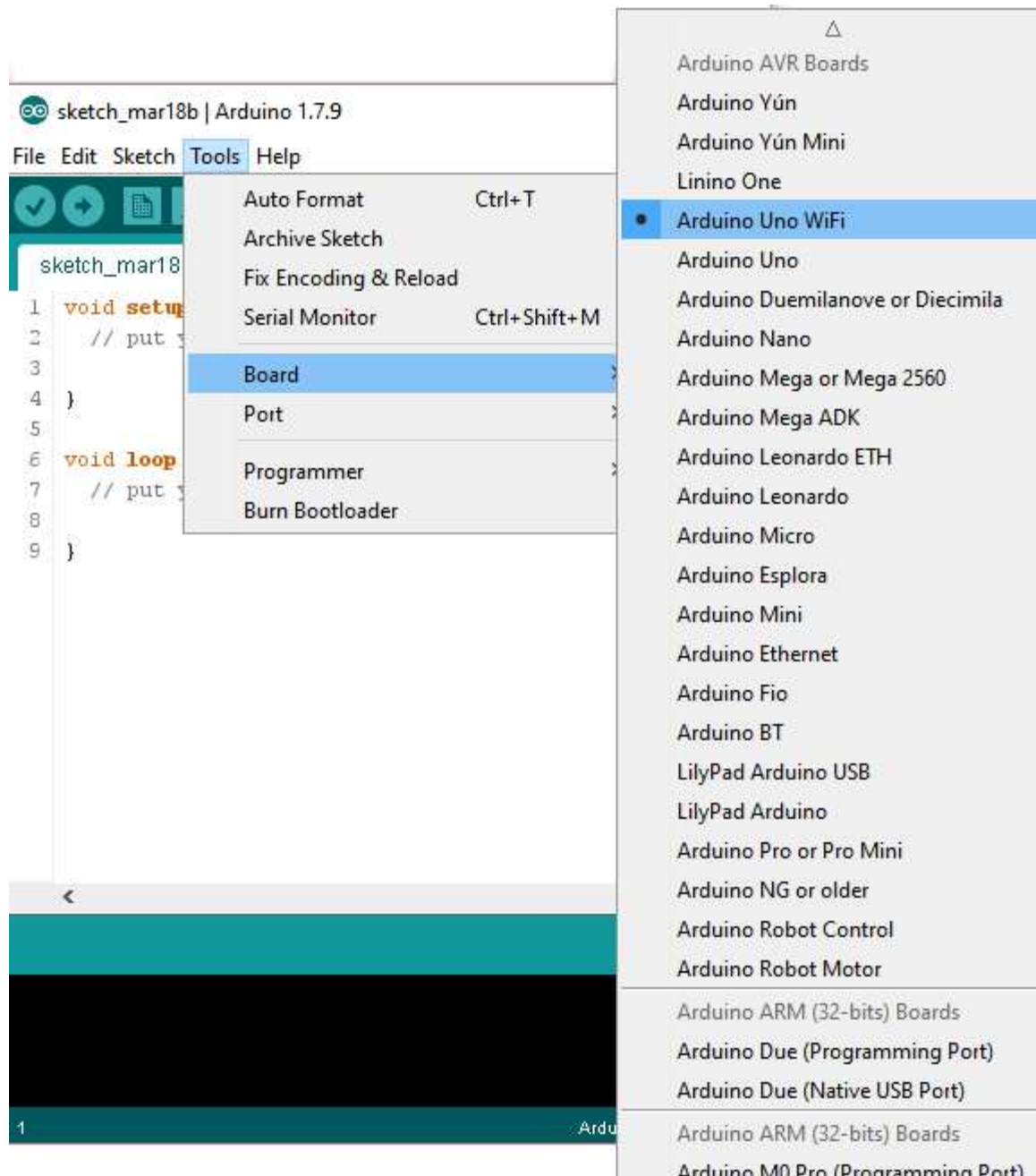
Connect the PC on the same board network.

Now the procedure to program the board via OTA is the same of that shown above but it differs only when you select the port. Now you must select the board from network ports menu.

Below all steps:

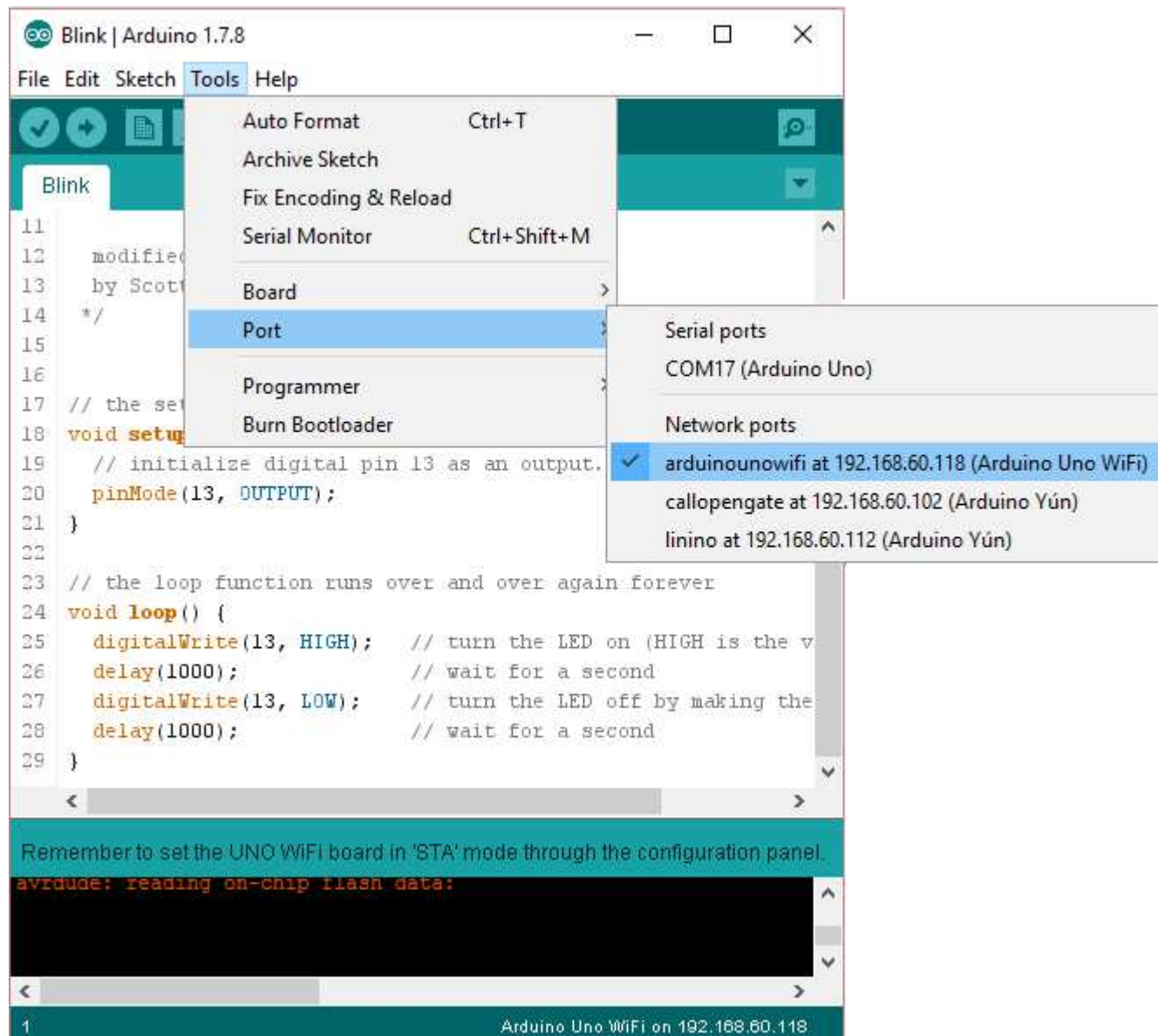
Select the board

Select the **Arduino Uno WiFi** as board from **Tools>Board** menu.



Select port

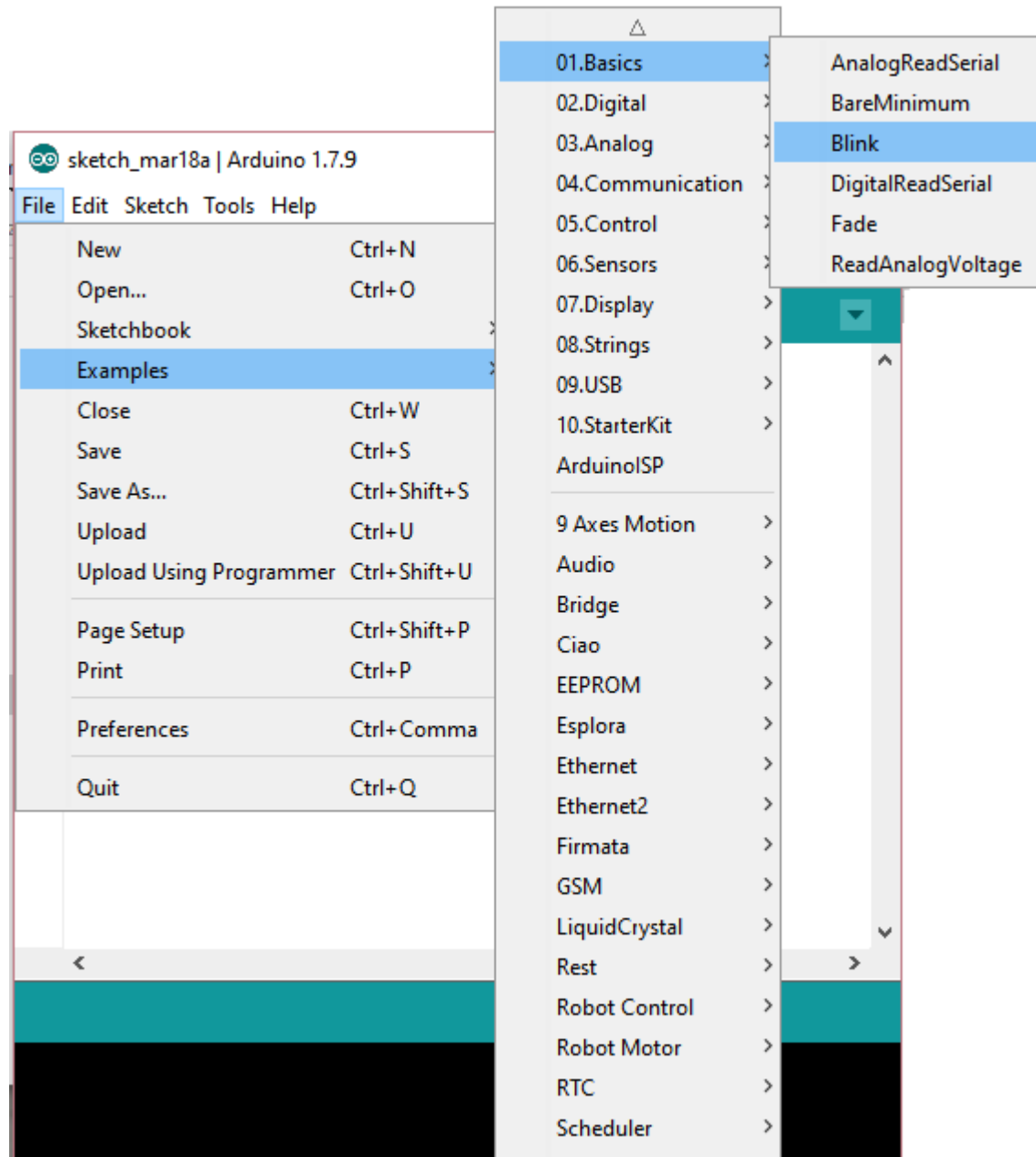
Select the board from **Tool>Port>Network ports** menu it will appear a device as shown in the below image:

**Note:**

Be sure that the PC and the board are connected to the same network and that the board is in STA MODE, for more information look the Getting started guide.

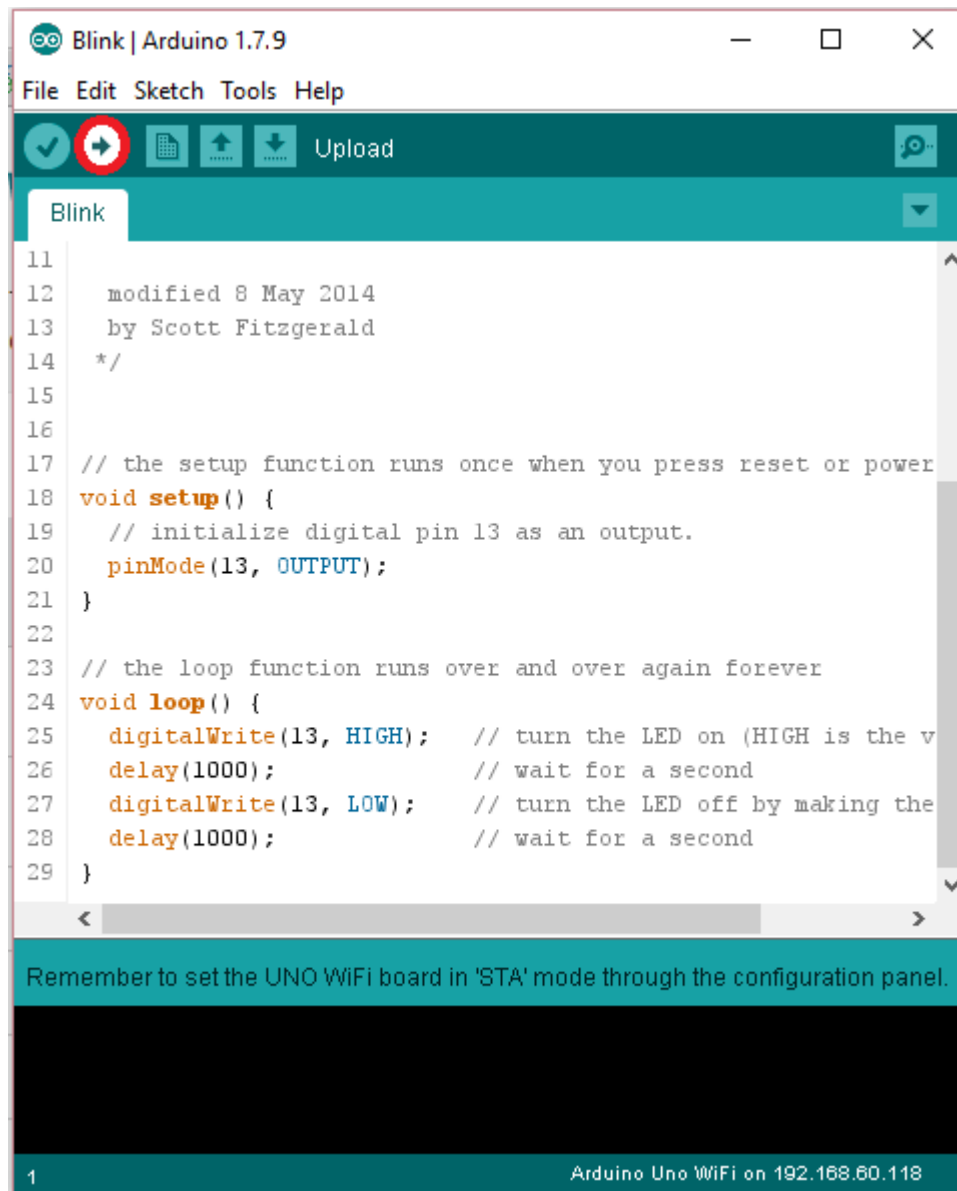
Open the Blink Sketch

Select the **Blink** sketch from **File>Examples>1.Basics** menu.



Upload the sketch

Now you can upload the sketch, clicking on **Upload** button, as shown in the below image:

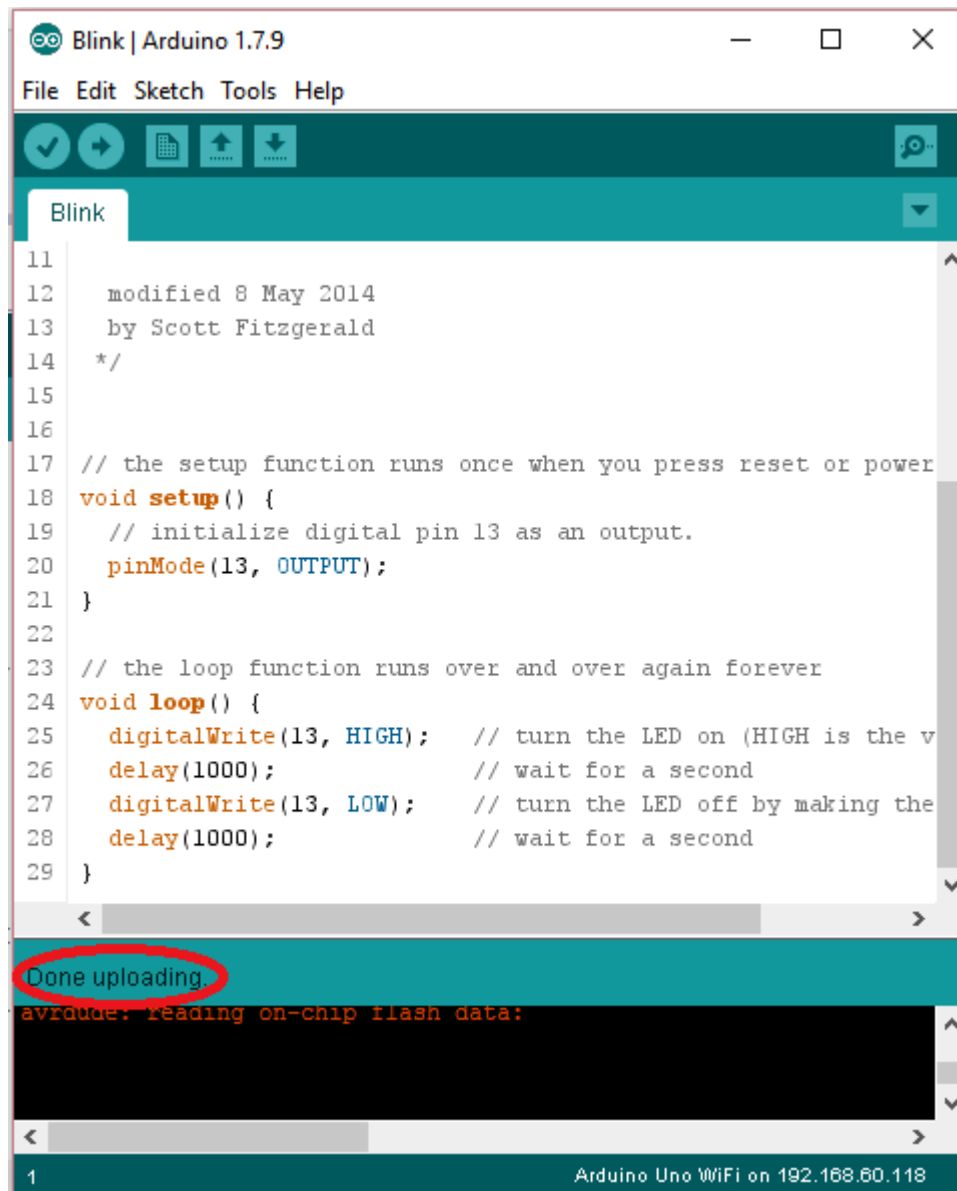


```
11
12   modified 8 May 2014
13   by Scott Fitzgerald
14   */
15
16
17   // the setup function runs once when you press reset or power
18   void setup() {
19     // initialize digital pin 13 as an output.
20     pinMode(13, OUTPUT);
21   }
22
23   // the loop function runs over and over again forever
24   void loop() {
25     digitalWrite(13, HIGH);   // turn the LED on (HIGH is the v
26     delay(1000);              // wait for a second
27     digitalWrite(13, LOW);    // turn the LED off by making the
28     delay(1000);              // wait for a second
29   }
```

Remember to set the UNO WiFi board in 'STA' mode through the configuration panel.

1 Arduino Uno WiFi on 192.168.60.118

Wait the end of the operation.



The screenshot shows the Arduino IDE interface with the 'Blink' sketch loaded. The code is as follows:

```
11
12   modified 8 May 2014
13   by Scott Fitzgerald
14   */
15
16
17   // the setup function runs once when you press reset or power
18   void setup() {
19     // initialize digital pin 13 as an output.
20     pinMode(13, OUTPUT);
21   }
22
23   // the loop function runs over and over again forever
24   void loop() {
25     digitalWrite(13, HIGH);   // turn the LED on (HIGH is the v
26     delay(1000);              // wait for a second
27     digitalWrite(13, LOW);    // turn the LED off by making the
28     delay(1000);              // wait for a second
29   }
```

Below the code editor, a status bar indicates 'Done uploading.' This message is circled in red. Below this, a black console window shows the text 'avrdude: reading on-chip flash data:'. At the bottom of the IDE, a status bar shows '1' and 'Arduino Uno WiFi on 192.168.60.118'.

If the Uploading is been correctly completed then the **Led13** will blink each second.

Now try to upload another example or try to create your custom sketch.

Look these examples:

- [Button Example](#)
- [Read Analog Voltage Example](#)
- [Servo Example](#)

- [CiaoRestClient-ThingSpeak](#)
- [ReadMacAddress](#)
- [RestServer and RestClient](#)
- [WebServer](#)
- [WebServerBlink](#)

The Arduino UNO WiFi has a Web panel that it can be reached in different ways:

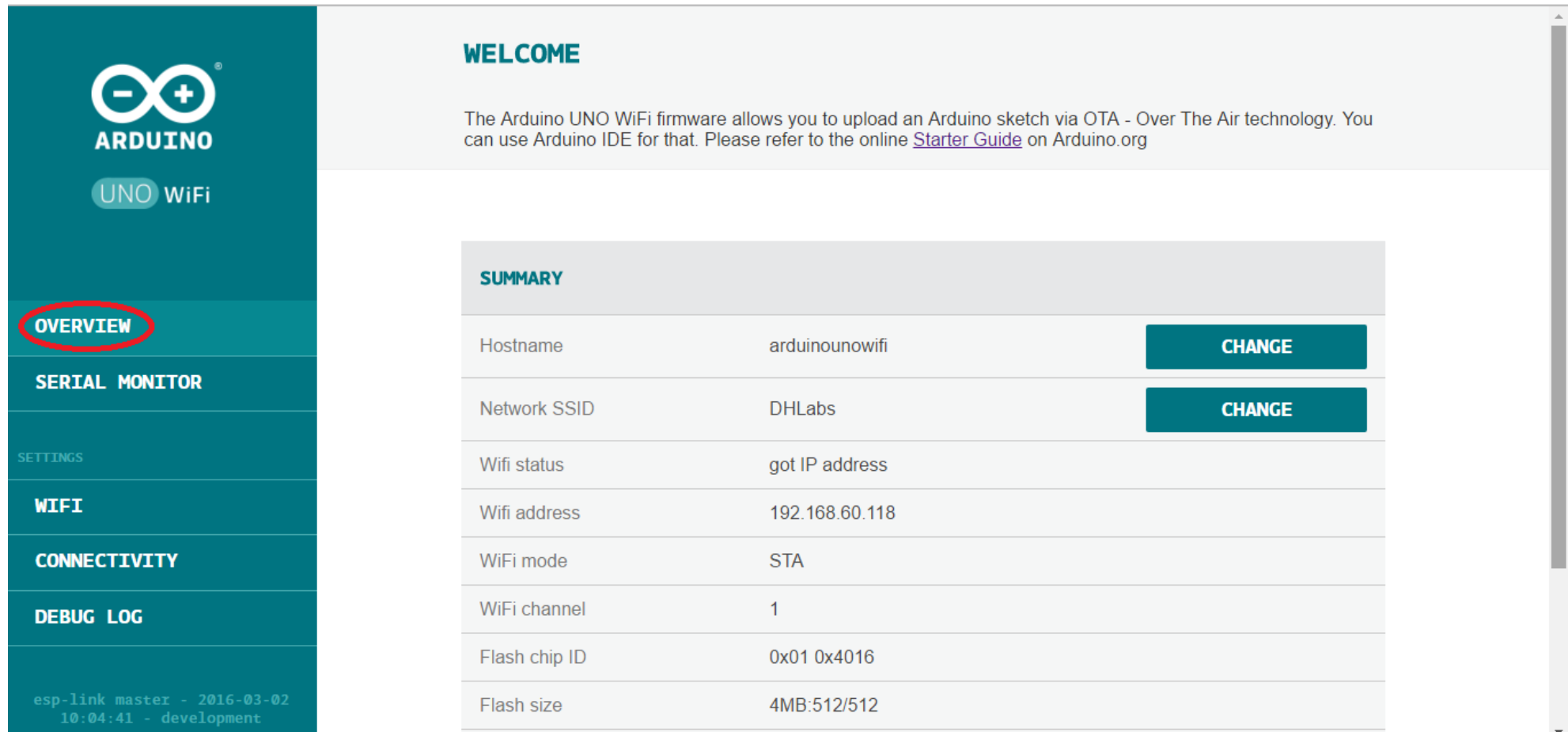
- If the board isn't been configurated yet, you can access inserting in the browser this link: <http://192.168.240.1/>

In this case look the getting started guide to configure it.

- If the board is been correctly configured then you can insert the ip address (xxx.xxx.xxx.xxx) or the hostname(hostname.local/) from browser.

The Web panel has a simple menu that it is formed from five items: OVERVIEW, SERIAL MONITOR, WIFI,CONNECTIVITY and DEBUG LOG.

The Home page of the Web Panel corresponds to OVERVIEW menu, as shown in the below image:

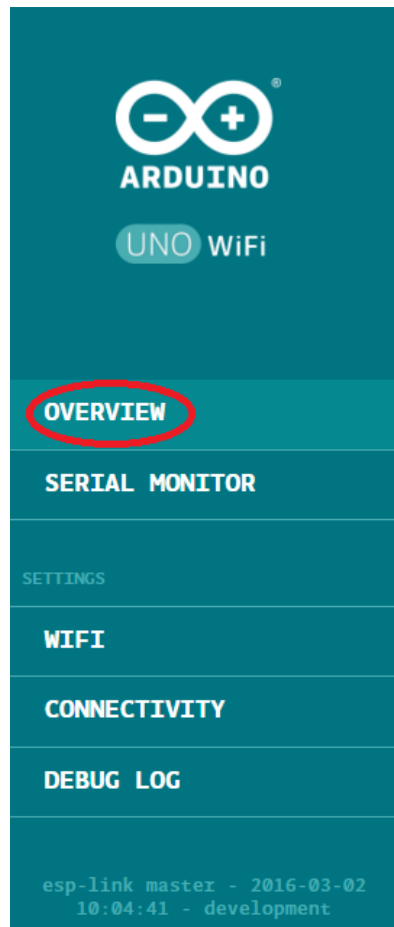


WELCOME

The Arduino UNO WiFi firmware allows you to upload an Arduino sketch via OTA - Over The Air technology. You can use Arduino IDE for that. Please refer to the online [Starter Guide](#) on Arduino.org

SUMMARY		
Hostname	arduinounowifi	CHANGE
Network SSID	DHLabs	CHANGE
Wifi status	got IP address	
Wifi address	192.168.60.118	
WiFi mode	STA	
WiFi channel	1	
Flash chip ID	0x01 0x4016	
Flash size	4MB:512/512	

In the **Overview** are shown all the informations about the configuration board: the hostname, the network SSID, Wifi address, Wifi mode,...

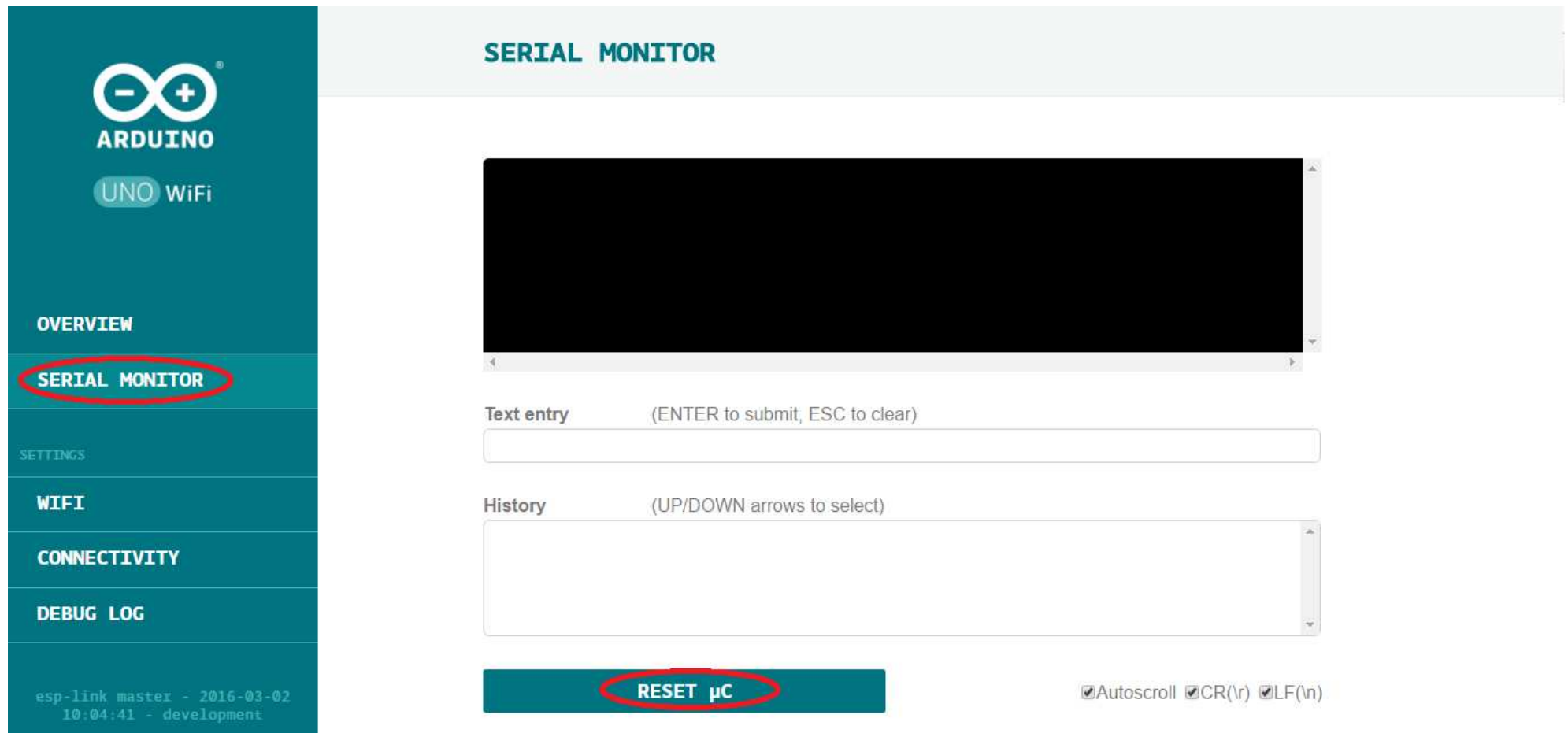


SUMMARY		
Hostname	arduinounowifi	CHANGE
Network SSID	DHLabs	CHANGE
Wifi status	got IP address	
Wifi address	192.168.60.118	
WiFi mode	STA	
WiFi channel	1	
Flash chip ID	0x01 0x4016	
Flash size	4MB:512/512	
Current partition	user2.bin	
SLIP status	disabled	
MQTT status	disabled/disconnected	
Serial baud	9600	

Clicking on **SERIAL MONITOR** appears a serial monitor useful to display the results when you upload a sketch.

The screenshot shows the Arduino IDE Serial Monitor window. On the left is a teal sidebar with the Arduino logo and 'UNO WiFi' text. Below the logo are menu items: 'OVERVIEW', 'SERIAL MONITOR' (highlighted with a red circle), 'SETTINGS', 'WIFI', 'CONNECTIVITY', 'DEBUG LOG', and a footer with 'esp-link master - 2016-03-02' and '10:04:41 - development'. The main area has a light gray header 'SERIAL MONITOR'. Below it is a large black text area. Underneath is a 'Text entry' field with the hint '(ENTER to submit, ESC to clear)'. Below that is a 'History' list with the hint '(UP/DOWN arrows to select)'. At the bottom left is a teal 'RESET µC' button. At the bottom right are three checked checkboxes: 'Autoscroll', 'CR(\r)', and 'LF(\n)'.

Furthermore in this section it is possible to reset the microcontroller clicking on RESET uC button.



Instead selecting from left menu the **WIFI** section, you can change the hostname simply typing the new hostname in the dedicated bar and after to click on CHANGE button, as shown in the below image:

ARDUINO
UNO WiFi

OVERVIEW
SERIAL MONITOR
SETTINGS
WIFI
CONNECTIVITY
DEBUG LOG

esp-link master - 2016-03-02
10:04:41 - development

WIFI CONFIGURATION

HOSTNAME

Type hostname here...

CHANGE

WIFI STATUS

WiFi channel	1
Configured network	DHLabs
WiFi status	got IP address
WiFi address	192.168.60.118
WiFi rssi	-56dB
WiFi phy	11n
WiFi MAC	5c:cf:7f:10:eb:e5
WiFi mode	STA

SWITCH TO STA+AP MODE

WIFI CONNECTION

To connect to a WiFi network, please select one of the detected networks, enter the password, and hit the connect button...

Network SSID

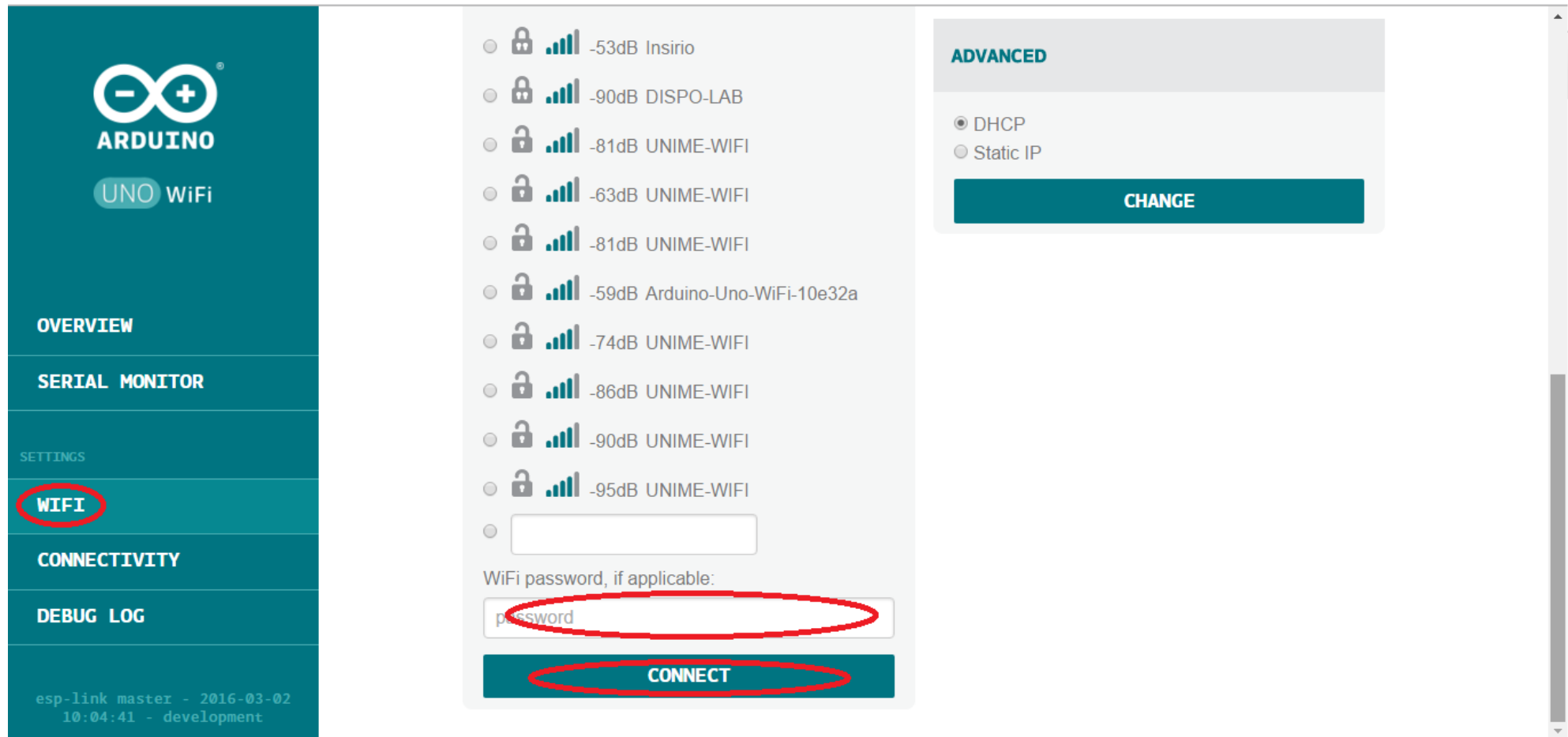
- ☒ -53dB DHLabs
- ☐ -52dB Inspiro

It is possible also to switch to STA MODE or STA+AP MODE clicking the specific button, but keep in mind that it is advised to switch only in STA MODE because so the board will be visible on the Arduino IDE and, furthermore, you will be able to protect it from possible attacks, since it will no longer be visible as open network.

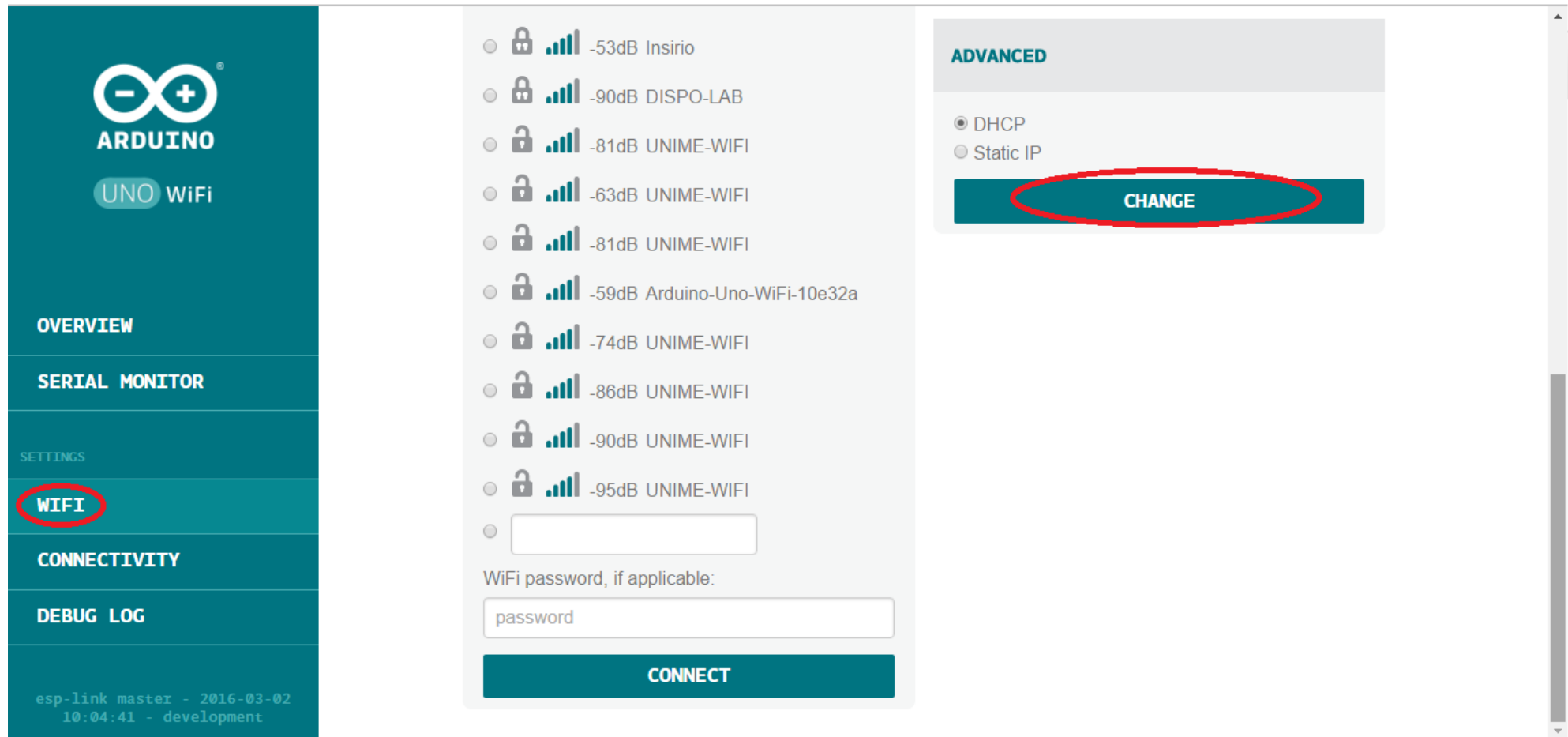
The screenshot displays the Arduino Uno WiFi web interface. On the left sidebar, the 'WIFI' menu item is highlighted with a red circle. The main content area is titled 'WIFI CONFIGURATION'. It includes a 'HOSTNAME' section with a text input field and a 'CHANGE' button. Below this is the 'WIFI CONNECTION' section, which provides instructions on how to connect to a network and lists detected networks. On the right, the 'WIFI STATUS' table shows the current configuration and status. At the bottom right, a 'SWITCH TO STA+AP MODE' button is circled in red.

WIFI STATUS	
WiFi channel	1
Configured network	DHLabs
WiFi status	got IP address
WiFi address	192.168.60.118
WiFi rssi	-56dB
WiFi phy	11n
WiFi MAC	5c:cf:7f:10:eb:e5
WiFi mode	STA

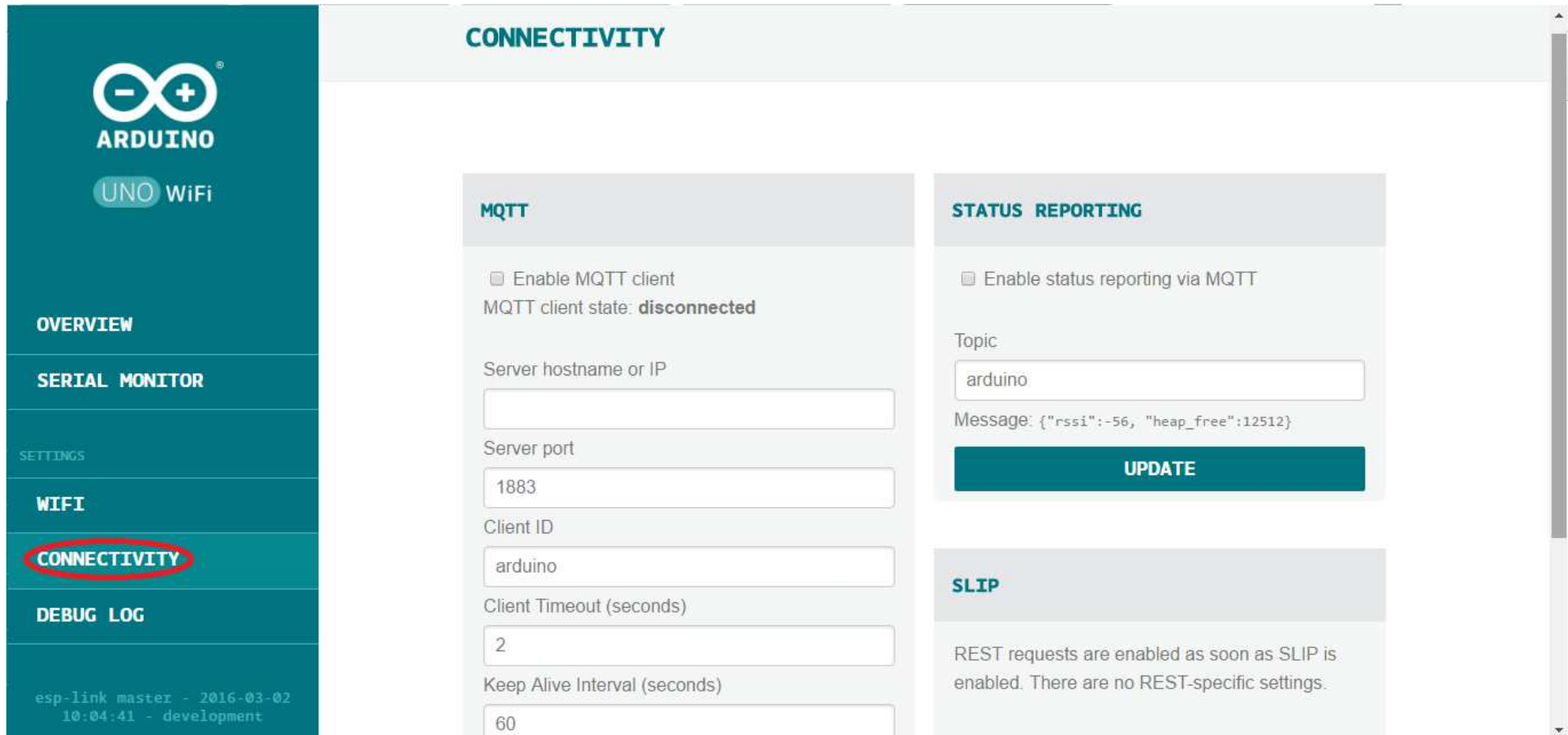
It is possible to connect the board to a network selecting it, inserting the correct password and clicking on CONNECT button.



In this section you can also choose if to use the DHCP or the Static IP, as shown in the picture:



In the **CONNECTIVITY** section you can enable the connection services for example the client MQTT and the SLIP:



The screenshot displays the Arduino Uno WiFi web interface. On the left is a teal sidebar with the Arduino logo and 'UNO WiFi' text. It contains a vertical menu with 'OVERVIEW', 'SERIAL MONITOR', 'SETTINGS', 'WIFI', 'CONNECTIVITY' (highlighted with a red circle), and 'DEBUG LOG'. At the bottom of the sidebar, it shows 'esp-link master - 2016-03-02 10:04:41 - development'. The main content area has a light gray header with the title 'CONNECTIVITY'. Below this, there are two columns of settings. The left column is titled 'MQTT' and includes a checkbox for 'Enable MQTT client' (unchecked), the text 'MQTT client state: disconnected', and input fields for 'Server hostname or IP', 'Server port' (1883), 'Client ID' (arduino), 'Client Timeout (seconds)' (2), and 'Keep Alive Interval (seconds)' (60). The right column is titled 'STATUS REPORTING' and includes a checkbox for 'Enable status reporting via MQTT' (unchecked), a 'Topic' input field (arduino), a 'Message' field showing a JSON object, and a teal 'UPDATE' button. Below these is a section titled 'SLIP' with text stating that REST requests are enabled as soon as SLIP is enabled.

CONNECTIVITY

MQTT

☐ Enable MQTT client
MQTT client state: **disconnected**

Server hostname or IP

Server port

Client ID

Client Timeout (seconds)

Keep Alive Interval (seconds)

STATUS REPORTING

☐ Enable status reporting via MQTT

Topic


Message: {"rssi":-56, "heap_free":12512}

UPDATE

SLIP

REST requests are enabled as soon as SLIP is enabled. There are no REST-specific settings.

Finally in the **DEBUG LOG** it is shown the debug log and it is possible to reboot the WiFi clicking the WiFi REBOOT button:


ARDUINO
UNO WiFi

OVERVIEW

SERIAL MONITOR

SETTINGS

WIFI

CONNECTIVITY

DEBUG LOG

esp-link master - 2016-03-02
10:04:41 - development

DEBUG LOG

```
585341> bss6: UNIME-WIFI (-77)
585341> bss7: UNIME-WIFI (-83)
585341> bss8: UNIME-WIFI (-84)
585341> bss9: UNIME-WIFI (-89)
585341> bss10: UNIME-WIFI (-94)
585341> bss11: UNIME-WIFI (-94)
585342> us1
587153> GET scan: cgiData=0 noAps=11
587173> GET scan: cgiData=1 noAps=11
```

REFRESH

WIFI REBOOT

GETTING STARTED

FIRST STEPS

WHAT IS ARDUINO

BASIC CONCEPTS

Getting started with your board

- [Start with Arduino UNO](#)
- [Start with Arduino Nano](#)
- [Start with Arduino Yun](#)
- [Start with Arduino Mega 2560](#)
- [Start with Arduino Tian](#)
- [Start with Arduino Industrial 101](#)
- [Start with Arduino M0 Pro](#)
- [Start with Arduino Leonardo ETH](#)
- [Start with Arduino DUE](#)
- [Start with Arduino M0](#)
- [Start with Arduino Yun Mini](#)

- [Start with Arduino MEGA ADK](#)
- [Start with Arduino Leonardo](#)
- [Start with Arduino Robot](#)
- [Start with Arduino ETHERNET](#)
- [Start with Arduino Micro](#)
- [Start with Arduino Mini](#)
- [Start with Arduino ESPLORA](#)
- [Start with Arduino STAR OTTO](#)

Getting started with your shield

- [Start with Arduino ETHERNET SHIELD 2](#)
- [Start with Arduino GSM SHIELD 2](#)
- [Start with Arduino WIFI SHIELD](#)

Getting started with your accessories

- [Start with Arduino Robot LCD](#)
- [Start with Arduino ISP](#)
- [Start with Arduino USB 2 Serial Micro](#)
- [Start with Arduino USB 2 Serial Mini](#)
- [Start with Arduino Mini USB Adapter](#)

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