

Examples > WiFi Library

WiFi Web Client

This example shows you how to make a HTTP request using a WiFi shield. It returns a Google search for the term "Arduino" (<http://www.google.com/search?q=arduino>). The results of this search are viewable as HTML through your Arduino's serial window.

This example is written for a network using WPA encryption. For WEP or WPA, change the `Wifi.begin()` call accordingly.

Hardware Required

- Arduino WiFi Shield
- Shield-compatible Arduino board

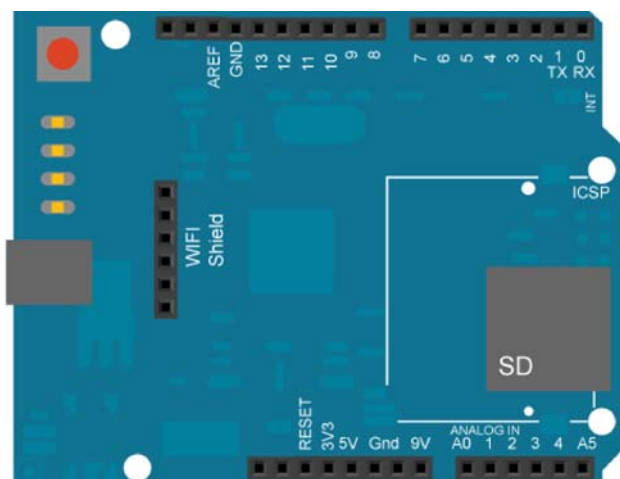
Circuit

The WiFi shield uses pins 10, 11, 12, and 13 for the SPI connection to the HDG104 module. Digital pin 4 is used to control the slave select pin on the SD card.

You should have access to a 802.11b/g wireless network that connects to the internet for this example. You will need to change the network settings in the sketch to correspond to your particular networks SSID.

For networks using WPA/WPA2 Personal encryption, you need the SSID and password. The shield will not connect to networks using WPA2 Enterprise encryption.

WEP network passwords are hexadecimal strings known as keys. A WEP network can have 4 different keys; each key is assigned a "Key Index" value. For WEP encrypted networks, you need the SSID, the key, and key number.



(http://www.arduino.cc/en/uploads/Tutorial/WiFiShield_bb.png)

image developed using Fritzing (<http://www.fritzing.org>). For more circuit examples, see the Fritzing project page (<http://fritzing.org/projects/>)

In the above image, the Arduino would be stacked below the WiFi shield.

Code:

```
/*
  Web client

  This sketch connects to a website (http://www.google.com)
  using a WiFi shield.

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  WEP or WPA, change the Wifi.begin() call accordingly.

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  Circuit:
  * WiFi shield attached

  created 13 July 2010
  by dlf (Metodo2 srl)
  modified 31 May 2012
  by Tom Igoe
*/

#include <SPI.h>
#include <WiFi.h>

char ssid[] = "yourNetwork"; // your network SSID (name)
char pass[] = "secretPassword"; // your network password (use for WPA, or use as key for WEP)
int keyIndex = 0; // your network key Index number (needed only for WEP)

int status = WL_IDLE_STATUS;
// if you don't want to use DNS (and reduce your sketch size)
// use the numeric IP instead of the name for the server:
//IPAddress server(74,125,232,128); // numeric IP for Google (no DNS)
char server[] = "www.google.com"; // name address for Google (using DNS)

// Initialize the Ethernet client library
// with the IP address and port of the server
// that you want to connect to (port 80 is default for HTTP):
WiFiClient client;

void setup() {
  //Initialize serial and wait for port to open:
  Serial.begin(9600);
  while (!Serial) {
    ; // wait for serial port to connect. Needed for Leonardo only
  }

  // check for the presence of the shield:
  if (WiFi.status() == WL_NO_SHIELD) {
    Serial.println("WiFi shield not present");
    // don't continue:
    while(true);
  }

  // attempt to connect to Wifi network:
  while (status != WL_CONNECTED) {
    Serial.print("Attempting to connect to SSID: ");
    Serial.println(ssid);
    // Connect to WPA/WPA2 network. Change this line if using open or WEP network:
    status = WiFi.begin(ssid, pass);

    // wait 10 seconds for connection:
    delay(10000);
  }
  Serial.println("Connected to wifi");
  printWifiStatus();

  Serial.println("\nStarting connection to server...");
  // if you get a connection, report back via serial:
  if (client.connect(server, 80)) {
    Serial.println("connected to server");
    // Make a HTTP request:
    client.println("GET /search?q=arduino HTTP/1.1");
  }
}
```

```

        client.println("Host: www.google.com");
        client.println("Connection: close");
        client.println();
    }
}

void loop() {
    // if there are incoming bytes available
    // from the server, read them and print them:
    while (client.available()) {
        char c = client.read();
        Serial.write(c);
    }

    // if the server's disconnected, stop the client:
    if (!client.connected()) {
        Serial.println();
        Serial.println("disconnecting from server.");
        client.stop();

        // do nothing forevermore:
        while(true);
    }
}

void printWifiStatus() {
    // print the SSID of the network you're attached to:
    Serial.print("SSID: ");
    Serial.println(WiFi.SSID());

    // print your WiFi shield's IP address:
    IPAddress ip = WiFi.localIP();
    Serial.print("IP Address: ");
    Serial.println(ip);

    // print the received signal strength:
    long rssi = WiFi.RSSI();
    Serial.print("signal strength (RSSI):");
    Serial.print(rssi);
    Serial.println(" dBm");
}

```

[Get Code] (<http://www.arduino.cc/en/Tutorial/WiFiWebClient?action=sourceblock&num=1>)

See Also:

- [ConnectNoEncryption](http://www.arduino.cc/en/Tutorial/ConnectNoEncryption) (<http://www.arduino.cc/en/Tutorial/ConnectNoEncryption>) : Demonstrates how to connect to an open network
- [ConnectWithWEP](http://www.arduino.cc/en/Tutorial/ConnectWithWEP) (<http://www.arduino.cc/en/Tutorial/ConnectWithWEP>) : Demonstrates how to connect to a network that is encrypted with WEP
- [ConnectWithWPA](http://www.arduino.cc/en/Tutorial/ConnectWithWPA) (<http://www.arduino.cc/en/Tutorial/ConnectWithWPA>) : Demonstrates how to connect to a network that is encrypted with WPA2 Personal
- [ScanNetworks](http://www.arduino.cc/en/Tutorial/ScanNetworks) (<http://www.arduino.cc/en/Tutorial/ScanNetworks>) : Displays all WiFi networks in range
- [WiFiChatServer](http://www.arduino.cc/en/Tutorial/WiFiChatServer) (<http://www.arduino.cc/en/Tutorial/WiFiChatServer>) : Set up a simple chat server
- [WiFiWebClient](http://www.arduino.cc/en/Tutorial/WiFiWebClient) (<http://www.arduino.cc/en/Tutorial/WiFiWebClient>) : Connect to a remote webserver
- [WiFiWebClientRepeating](http://www.arduino.cc/en/Tutorial/WiFiWebClientRepeating) (<http://www.arduino.cc/en/Tutorial/WiFiWebClientRepeating>): Repeatedly make HTTP calls to a server
- [WiFiWebServer](http://www.arduino.cc/en/Tutorial/WiFiWebServer) (<http://www.arduino.cc/en/Tutorial/WiFiWebServer>) : Serve a webpage from the WiFi shield

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