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[Home](#) ▶ [Tutorials](#) ▶ [Arduino](#) ▶ [Ethernet Shield Web Server Tutorial](#) ▶ SD Card AJAX Web Server

## Arduino SD Card Ajax Web Server

Created on: 25 March 2013

### Part 13 of the Arduino Ethernet Shield Web Server Tutorial

An Arduino Ethernet shield web server that hosts a web page on the SD card. The web page displays the status of a switch and uses Ajax to update the status of the switch.

In previous parts of this tutorial, an SD card hosted web page was never used to display the status of Arduino inputs – all the web pages displaying I/O were part of the Arduino sketch.

This part of the tutorial now displays an Arduino input on an SD card hosted web page.

### Circuit Diagram

A switch is interfaced to pin 3 of the Arduino for this example.

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### Arduino Ethernet Shield Tutorial

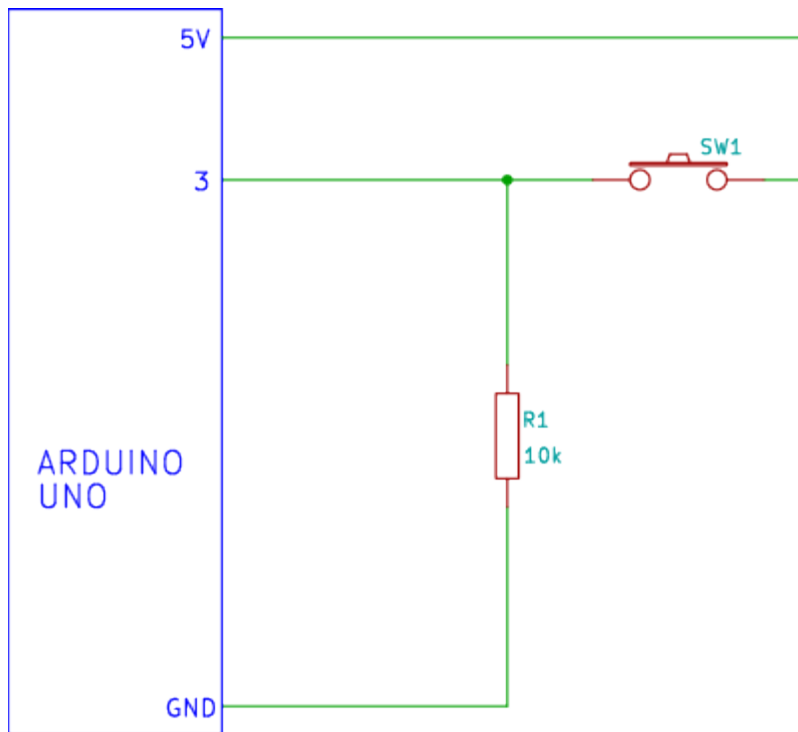
Tutorials

Arduino

Part 1:  
Ethernet  
Shield Tutorial  
Introduction  
and Hardware

Part 2: Basic  
Arduino Web  
Server

Part 3: HTML  
Web Page  
Structure



**Part 4:**  
Arduino SD  
Card Web  
Server

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**Part 5:**  
Arduino Web  
Server LED  
Control

---

**Part 6:**  
Reading a  
Switch

---

**Part 7:**  
Reading a  
Switch using  
AJAX

---

**Part 8:**  
Reading a  
Switch  
Automatically  
using AJAX

---

**Part 9:**  
Reading an  
Analog Input  
and Switches  
using AJAX

---

**Part 10:**  
Linking Web  
Pages

---

**Part 11:** Web  
Page Images

---

**Part 12:** CSS  
Introduction

---

## Code and Web Page

The code (Arduino sketch) and web page for this part of the tutorial are basically a combination of [part 4 \(Arduino SD card web server\)](#) and [part 8 \(reading switch status automatically using Ajax\)](#) of this tutorial.

No video has been included with this tutorial as the output will look the same as part 8 of this tutorial, but with the title and heading text changed.

## Web Page

The web page consisting of HTML and JavaScript (to implement Ajax) is shown below:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Arduino SD Card Web Page using Ajax</title>
    <script>
      function GetSwitchState()
      {
        nocache = "&nocache=" + Math.random() * 1000000;
        var request = new XMLHttpRequest();
        request.onreadystatechange = function()
        {
          if (this.readyState == 4) {
            if (this.status == 200) {
              if (this.responseText != null) {
                document.getElementById("switch_txt").innerHTML = this.responseText;
              }
            }
          }
        }
        request.open("GET", "ajax_switch" + nocache, true);
        request.send(null);
        setTimeout('GetSwitchState()', 1000);
      }
    </script>
  </head>
  <body onload="GetSwitchState()">
    <h1>Arduino Switch State from SD Card Web Page using Ajax</h1>
    <p id="switch_txt">Switch state: Not requested...</p>
  </body>
</html>
```

### Web Page Hosted on SD Card (index.htm)

This web page is saved to the micro SD card as **index.htm** – it is basically the same HTML/JavaScript that was produced by the Arduino sketch in [part 8 \(reading switch status automatically using Ajax\)](#), but with the title and heading text changed.

Copy and paste the web page from the listing below.

```
<!DOCTYPE html>
<html>
  <head>
    <title>Arduino SD Card Web Page using Ajax</
    <script>
      function GetSwitchState()
      {
        nocache = "&nocache=" + Math.random() *
        var request = new XMLHttpRequest();
        request.onreadystatechange = function()
        {
          if (this.readyState == 4) {
            if (this.status == 200) {
              if (this.responseText != nul
                document.getElementById
              }
            }
          }
        }
      }
    </script>
  </head>
  <body onload="GetSwitchState()">
    <h1>Arduino Switch State from SD Card Web Page using Ajax</h1>
    <p id="switch_txt">Switch state: Not requested...</p>
  </body>
</html>
```

### Part 13: Reading a Switch with SD Card Web Server and Ajax

### Part 14: Reading Inputs with Ajax and XML

### Part 15: Analog Value Displayed on Gauge

### Part 16: Inputs and Outputs (I/O)

### Part 17: Accessing HTML Tags with CSS and JavaScript

### Part 18: CSS for Positioning, Sizing and Spacing

### Summary and Conclusion



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## Arduino Sketch

The Arduino sketch for this part of the tutorial is shown below. It requires the above HTML/JavaScript to be available on the micro SD card in the index.htm file.

```

/*-----
Program:      eth_websrv_SD_Ajax

Description:  Arduino web server that serves up a
              that displays the status of a switch
              to pin 3 of the Arduino.
              The web page is stored on the SD card
              The web page contains JavaScript code
              Ajax to request the state of the switch
              second.

Hardware:     Arduino Uno and official Arduino Ethernet
              shield. Should work with other Arduino
              compatible Ethernet shields.
              2Gb micro SD card formatted FAT16
              Push button switch interfaced to pin
              Arduino

Software:     Developed using Arduino 1.0.5 software
              Should be compatible with Arduino 1.0
    
```

## How the Sketch Works

This sketch works in the same way as the sketch from [part 8 \(reading switch status automatically using Ajax\)](#), except that instead of sending the web page line by line from the Arduino sketch code, the web page is sent from the index.htm file on the SD card.

Because we are using Ajax, the web page (when loaded in the web browser) sends the same request for the switch status as the sketch in part 8 of this tutorial. If we were not using Ajax, then the Arduino would need to read the index.htm file from the SD card and modify the part that shows the switch status, then send back the whole web page with the modified part – depending on if the switch is on or off.

[← Go back to Part 12](#)

[Go to Part 14 →](#)

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