Arduino SD Card Web Server

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Part 4 of the Arduino Ethernet Shield Web Server Tutorial

The Arduino, Arduino Ethernet shield and micro SD card are used to make a web server that hosts a web page on the SD card. When a browser requests a web page from the Arduino web server, the Arduino will fetch the web page from the SD card.

Creating the Web Page

Because the web page is to be stored on the SD card, it must first be created using a text editor and then copied to the SD card.

Web Page Editor

A text editor such as Geany can be used – it is available to download for Windows and will be in the repositories for most Ubuntu based Linux distributions. Geany has syntax

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highlighting and will automatically close HTML tags for you which makes web page editing easier. It is possible to use any other text editor, even Windows Notepad.

Web Page

Create the following web page in a text editor. When you save the text file, give it the name: **index.htm**

```
<!DOCTYPE html>
<html>
    <head>
        <title>Arduino SD Card Web Page</title>
    </head>
    <body>
        <h1>Hello from the Arduino SD Card!</h1>
        <p>A web page from the Arduino SD card server.
    </body>
</html>
```

Nothing new here, it is the same as the web page from the first web server in this tutorial with just the text changed. Test this web page by opening it in a web browser.

Copying the Web Page

You will need a micro SD card slot on your computer or a card reader that is capable of reading and writing a micro SD card.

Insert the micro SD card into the slot on the computer or card reader that is plugged into the computer and copy the **index.htm** file to the micro SD card.

Now plug the SD card into the micro SD card slot on the Ethernet shield.

SD Card Web Server

Hardware

You should now have the micro SD card with web page copied to it inserted into the card slot on the Arduino Ethernet shield. The Ethernet shield should be plugged into a compatible Arduino and into an Ethernet cable connected to your network. The Arduino / Ethernet shield should be powered from a USB cable.

Arduino Sketch

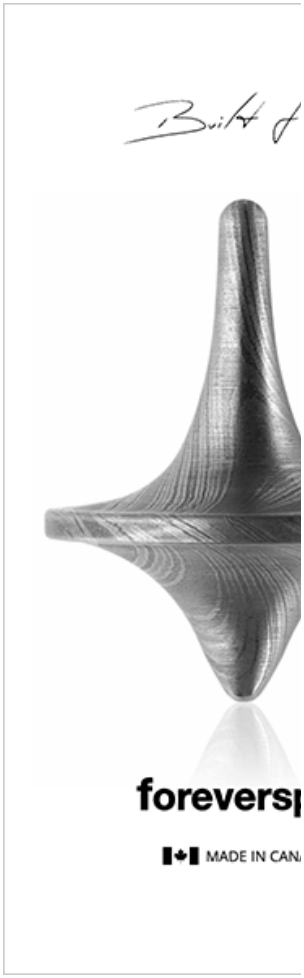
The Arduino sketch that fetches the web page from the SD card and sends it to the browser is shown below.

```
/*-----------------------------------------------
  Program:      eth_websrv_SD

  Description:  Arduino web server that serves up a
                page. The web page is stored on the

  Hardware:     Arduino Uno and official Arduino Eth
                shield. Should work with other Ardui
                compatible Ethernet shields.
                2Gb micro SD card formatted FAT16

  Software:     Developed using Arduino 1.0.3 softwa
                Should be compatible with Arduino 1.
                SD card contains web page called ind

  References:   - WebServer example by David A. Mell
                  modified by Tom Igoe
                - SD card examples by David A. Melli
                  Tom Igoe
                - Ethernet library documentation:
```

Using the Sketch

Copy the above sketch and paste it into the Arduino IDE. Load the sketch to the Arduino and then surf to the IP

address set in the sketch with your web browser. The web page that you created should be displayed in the browser as it is served up by the Arduino SD card web server.



Fault Finding

If the previous sketch in this tutorial worked, then the only thing that can go wrong is with initializing the SD card and finding the index.htm file on the card. If the file is not on the card or does not have the exact name index.htm, then the server will not be able to display the web page.

Open up the Arduino serial monitor window to see SD card diagnostic information.

Sketch Explanation

This sketch is a modified version of the **eth_websrv_page** sketch from the Basic Arduino Web Server part of this tutorial.

Additional Code

The sketch now initializes the SD card in the **setup()** function and sends diagnostic information out of the serial port that can be viewed in the Arduino serial monitor window.

Instead of sending the web page line by line from within the code as in the **eth_websrv_page** sketch, this new sketch now opens the **index.htm** file from the SD card and sends the contents to the web client (the web browser).

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I made one change. I moved the ethernet begin statement to the bottom of the //initialize SD Card section because the ethernet stopped working because the SD card had not yet been initialized. I got that from the warning on your first page. Thanks.

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