

# What is a way for a web browser to communicate with a hardware device? [closed]

Asked 16 years, 2 months ago   Modified 8 years, 7 months ago

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6



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Closed 12 years ago.

I have a data acquisition hardware device attached to a PC via USB that I'd like to send some information and settings, acquire some data, and then retrieve the acquired data on the client and send it to the server. The plan is to use a web portal to communicate with the device attached to the client PC. I was planning on writing a DLL to talk to the device. My environment on the client is Windows using Internet Explorer as the browser. The server side is Windows or Linux. What is the best way to communicate from a web browser client to a client-side device?

*Clarification:* The first goal is to allow the client PC to send acquisition settings to the device. The settings may be manually entered at the client or may come from the server. The second goal is to get the acquired data to the server's database. I don't need to display the acquired data at the client.

The hardware device has a CPU but very limited memory. The protocol to communicate with the device is undetermined, but I may access the device like a USB drive.

embedded

device

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edited May 15, 2016 at 15:44



halfer

20.4k ● 19 ● 108 ● 200

asked Oct 16, 2008 at 15:58



Ed Greaves

4,927 ● 3 ● 24 ● 19

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how you hardware device is connected to the pc ? Which bus USB, PCI, other? What is you embedded device capable is it has it's own cpu ? – [Ilya](#) Oct 16, 2008 at 16:31

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8 Answers

Sorted by:

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You could use a Java applet and communicate with the device via serial port.

3

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answered Oct 16, 2008 at 17:41



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johnstok

98.1k ● 12 ● 56 ● 76



Write an ActiveX plugin to collect the data but I am not sure if it will grant you the required permissions. You can try to write a Netscape plugin alternatively if you can run on another browser. I don't know any restrictions other than imposed over the plugin host.

2



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answered Oct 16, 2008 at 16:30



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artificialidiot

5,369 ● 32 ● 27



We have the same need and are evaluating the option of running a proxy on the client that listens on 127.0.0.1:8080. The proxy can talk to the device and any local browser can talk to the proxy by making requests to 127.0.0.1:8080 in js and then forwarding the results to the web portal. No idea if it will work as any security software could disallow the browser from making requests to 127.0.0.1 and squash the entire thing.

2



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answered Dec 2, 2008 at 1:55

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[user42317](#)

63 ● 4

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This is what I was thinking also. Haven't tried it yet, but I don't see why it won't work. – [mydoghasworms](#) Feb 2, 2016 at 11:43

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2

Many devices can send input in the form of keystrokes. When the focus is on an input field, data from the device will fill it with text.



If your data has a fixed length or predictable pattern, you can even automatically submit the data to a server using ajax or similar method.



This approach has been successfully employed with a barcode scanner.

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answered Feb 7, 2011 at 17:02

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[afilina](#)

939 ● 1 ● 11 ● 25



2

It's not the web *browser* that is communicating with the device, it's the web *server*. In other words, write a small web application that instead of (or in addition to) reading data from a database, reads from the device, and present to the user as HTML.





A different way to achieve the same would be to write a daemon that polls from the device and writes to a database, then write a frontend to present the stored data. This scheme is better if you want to present a record of past lectures against time. The first method is better to use the browser as a simple interface to the device.

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edited Feb 5, 2013 at 23:28



Peter Mortensen

31.6k ● 22 ● 109 ● 133

answered Oct 16, 2008 at 16:04



Javier

62.4k ● 9 ● 81 ● 126

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I guess my question wasn't clear, the device is attached to a client and I want to get the raw acquisition data back to the server. The problem I need help with is the communication between the browser and the hardware on the client.

– Ed Greaves Oct 16, 2008 at 16:18

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I believe @Javier answered your question and clarification correctly. The web server needs a method to talk to the client 'server' or process or as @Javier notes, have the client app post to a DB or file on the server. – kenny Oct 16, 2008 at 17:17

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it's quite possible (even easy) to use a small and light local-only webserver (bind to 127.0.0.1) so you can access with your browser. – Javier Oct 16, 2008 at 19:13

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You can take the easy way and use an embedded web server as a service to collect the data and access it like an ordinary web site from the browser. It requires the client to start the service though.

You can use it as a proxy to your portal also, in which case you don't have to deal with security restrictions of multiple domains.

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edited Oct 16, 2008 at 16:34

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answered Oct 16, 2008 at 16:25



artificialidiot

5,369 ● 32 ● 27

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The embedded web server would be on the device? Not possible given our memory limitations. I don't understand what you said about the proxy, please explain.

– Ed Greaves Oct 16, 2008 at 16:41

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Normally this issue is addressed by having a third party software/driver installed on the client machine. GEM Smart card reader uses this approach. However, we need to remember that taking such an approach makes the design deviate from thin-client model. A better way to do would be create a service on the client machine.

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answered Oct 16, 2008 at 16:39

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questzen

3,287 ● 20 ● 21



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If you using USB interface to connect your hardware i would suggest using [USB CDC EEM](#) class that is designed to provide Ethernet other usb simulation and used exactly for this purpose - expose web server on embedded devices, [this one for example](#), in various designs.



Small addition you will need to implement CDC EEM class driver on PC side as well to get this working.



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answered Oct 16, 2008 at 19:30

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Ilya

3,138 ● 4 ● 24 ● 30