



## YOU ARE READING THIS BECAUSE:

- You know the embedded systems industry.
- You know one of the largest challenges is to identify and remotely access small embedded devices located behind firewalls.
- You also know that having these small devices serve web-GUI's via a web server, with TCP-state, graphics, style sheets, multiple languages etc. directly to a browser is even trickier

Especially if you want to use regular web technology.

## WHAT IF:

All the end user would have to do is type a device name in any browser to access a full blown HTML graphical user interface with the latest device data.

**Learn how this is done on inexpensive SOC platforms using our low bandwidth protocol, read what customers say, and join the nabto:// revolution**



# CREATE A WEB SERVER IN 953 BYTES

Nabto is HTTP 2.0 - or you could say HTTP for devices. Our technology replaces existing access solutions such as GSM/3G industrial modem access, closed telecom network services (MPLS) and proprietary self built solutions with high maintenance costs.

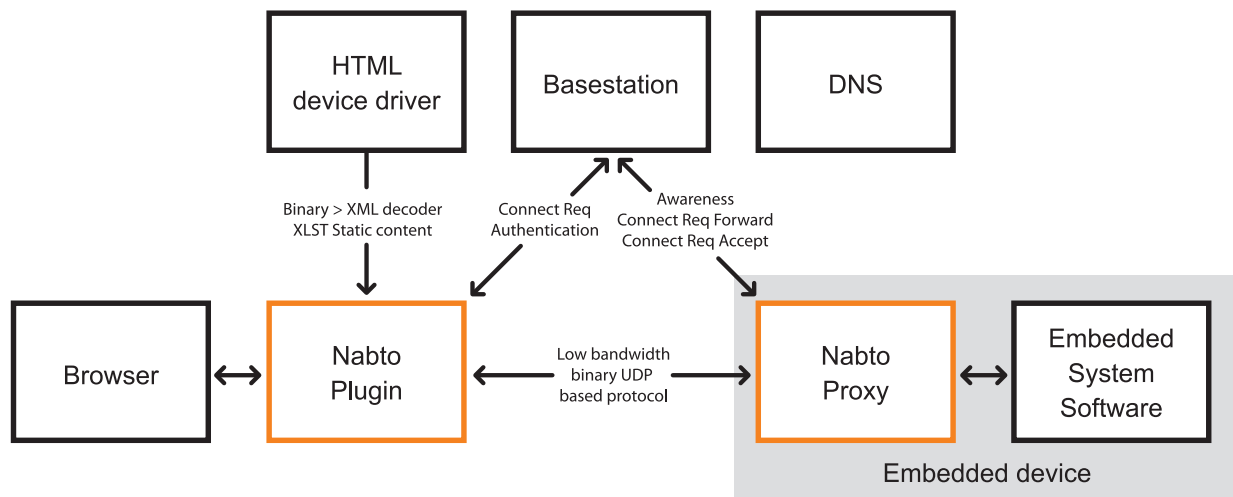
We address the fact that regular web technology was built around a strong server and a weak client, while in the embedded world, it's the other way around.

Nabto fuses the best of VoIP and HTTP technologies in a browser recognizable, low-bandwidth nabto:// protocol

creating a perfect fit for the embedded scenario on even small SOC platforms; All graphics and HTML rendering are moved from the low resource embedded web server to the high resource browser. Instead of having a thermostat send you 5 kB HTML and graphics to illustrate the temperature, the server only needs to transmit the temperature in a single byte. The browser receives all the large-footprint data through a third-party base station and HTML device drivers.

**This process works with embedded web servers as small as 953 bytes.**

## SCHEMATICS OF THE NABTO PLATFORM:



### **Nabto plug-in:**

The plug-in will register in the browser to serve "nabto://" requests.

### **Nabto proxy:**

A proxy/server that handles communication from/to the base station and plug-in.

### **Base station:**

The DNS address of the embedded

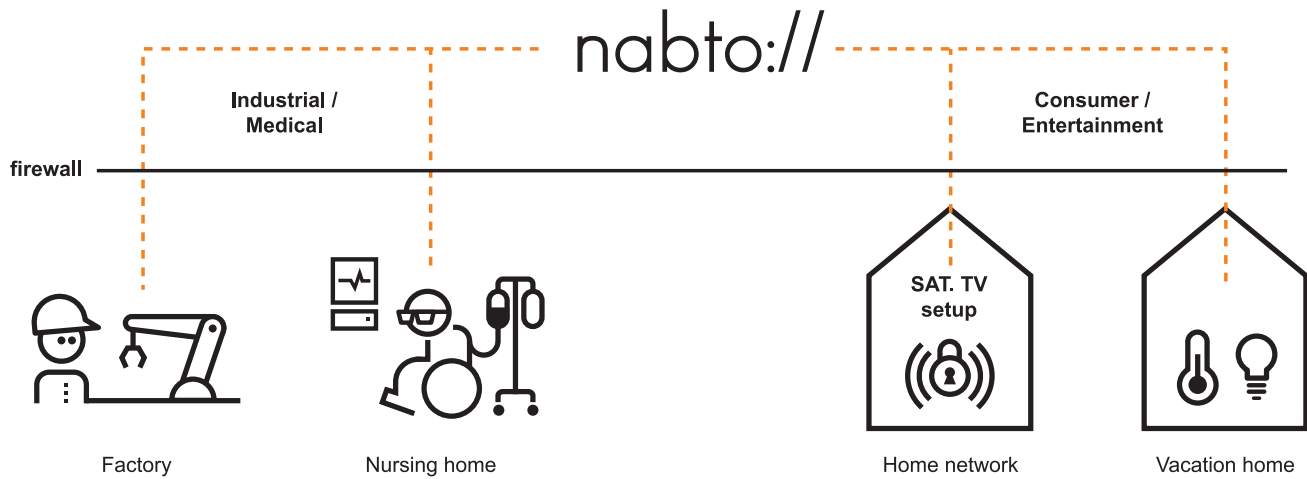
device resolves to the basestation(s), hereby giving the plug-in and embedded device an easy method to establish contact to the base station. The base station software can be located on a Linux or Microsoft Windows server, router hardware or in the "cloud".

### **HTML device driver:**

The HTML device driver is a .zip file, located on a public web server. The

HTML device driver can thereby be referenced by a simple URL and stores the following information:

- Graphics: GIF, JPG, PNG etc
- Style sheets
- Javascript
- Request Mapping
- Response Mapping
- Static HTML pages
- HTML template

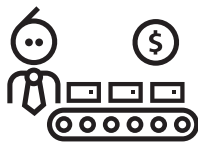


“Nabto gives us a significant, competitive advantage, while also saving energy and costs. We avoid the challenges of having to assign dynamic IP addresses to each of our routers placed in the home. In future products, we even bypass the router completely. Using Nabto’s low-footprint solution enables us to access the embedded processor directly in a more seamless set-up.”

*Henning Overgaard, CEO of Flex-Control, a manufacturer of home automation products.*

### USE SCENARIOS:

Nabto brings the pervasive internet a step closer. Consider it similar to a conventional VoIP device where people can contact you on your specific phone number, regardless of your IP address and firewall configuration. Our technology can be implemented in anything from blood pressure monitors to video recorders. The majority of the 10 billion microprocessors used in embedded devices last year were small 8 and 16-bit processors like the ones implemented by Nabto customer Flex-Control.



#### YOUR VALUE: WITH NABTO YOU CAN:

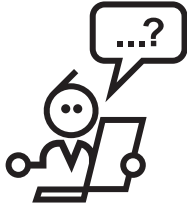
- reach behind firewalls to connect small, embedded processors on SOC platforms to the pervasive internet.
- render device data in a full-blown HTML graphical user interface accessed directly from any browser.
- achieve a cost efficient, low web server overhead
- perform direct remote support; access the customer’s device directly, examine log files, upgrade firmware and take other support related actions.



#### YOUR CUSTOMER’S VALUE: WITH NABTO THEY CAN:

- remotely access device data through a familiar browser interface from either a laptop or mobile platform.
- obtain quick, hassle-free remote support.

## THE FAQS.



### How secure is this?

More secure than online banking. Nabto uses the same x.509 certification as many financial institutions, but instead of having the authentication happen when the user access the site, authentication happens at the third party base station.

### What if there is no internet connection?

Nabto works in LANs as well. Even when the LAN is just a network cable from device to laptop. In a LAN setting, the HTML

device driver is typically either cached or stored locally on DVD/CD.

### What about localization?

Nabto allows you to assign HTML device drivers in different languages to different devices while keeping the same firmware.

### What about OEMs?

Same goes for OEMs. You can keep OEM templates and graphics in separate HTML device drivers without changing the firmware.

## ABOUT NABTO:

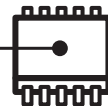
Nabto is short for **N**etwork **A**ccess **B**ridge **T**o and was founded in 2007 in Aarhus, Denmark by Carsten Rhod Gregersen, who saw an opportunity to connect all digital devices on the Internet in a new and simple way. A vision he implemented and led to Nabto winning the Scandinavian Industry Expo's Invention Contest 2009.

Read more about the technology and join the nabto:// revolution by downloading a free consumer version of Nabto's browser plug-in at [www.nabto.com](http://www.nabto.com)

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simply connect



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