# AUTOMGEN WEB Server

For implementing a SCADA accessible from a web browser

## 1- Introduction

The AUTOMGEN WEB server is used to implement SCADA applications which are accessible from a web browser.





Computer with AUTOMGEN[8] installed and WEB server The computer is possibly connected to a a PLC.

Client application: whole system has a WEB browser installed and connected to a LAN or Internet.

There are multiple applications, from simple access to a SCADA screen in intranet to access to control of a PLC from a mobile phone with Internet browsing software installed.

## 2- Implementation

The WEB server is composed of an executable named "webserver.exe" which is in the AUTOMGEN installation directory. The server parameters are in a file named httpd.xml which is in the same directory. This file contains the port used (80 by default for an http server) as well as the directory containing the html files (by default the "webserver\html" sub-directory of the AUTOMGEN installation directory. This file can be edited with a simple text editor.

To start the WEB server, launch the webserver.exe executable. The "webserver\html" subdirectory contains an application example.  After launching the WEB server, you can immediately launch your Internet explorer on the same PC and connect to the WEB server by entering the address http://127.0.0.1 (local address of the PC where the server is launched).

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The image below shows what should appear on your Internet explorer.
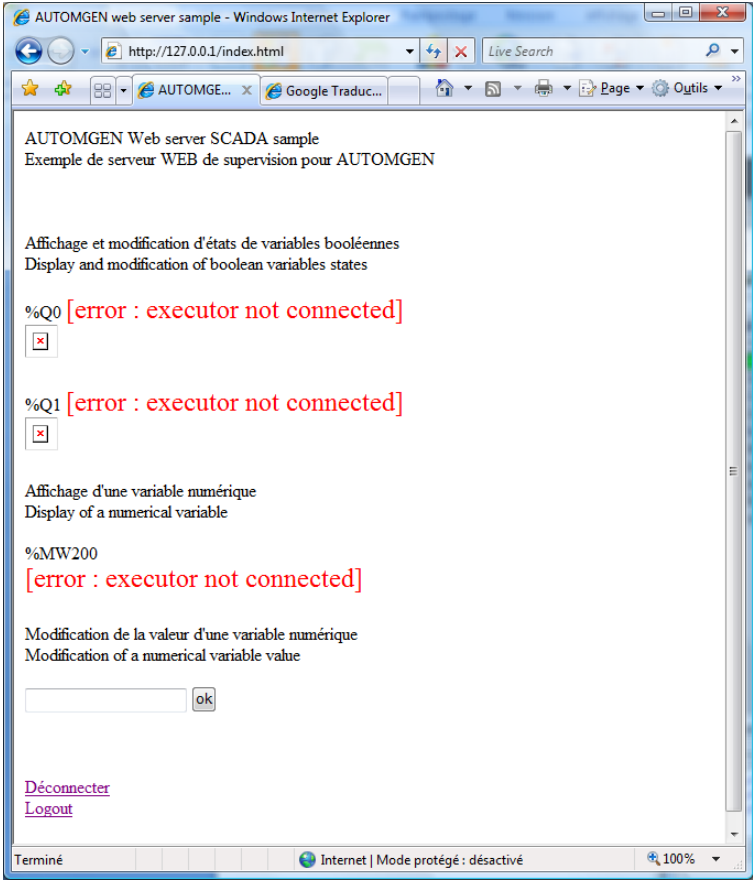


To obtain access to displaying and editing variable states, just launch AUTOMGEN and then the execution of an application (by clicking on GO).

Next this should appear:
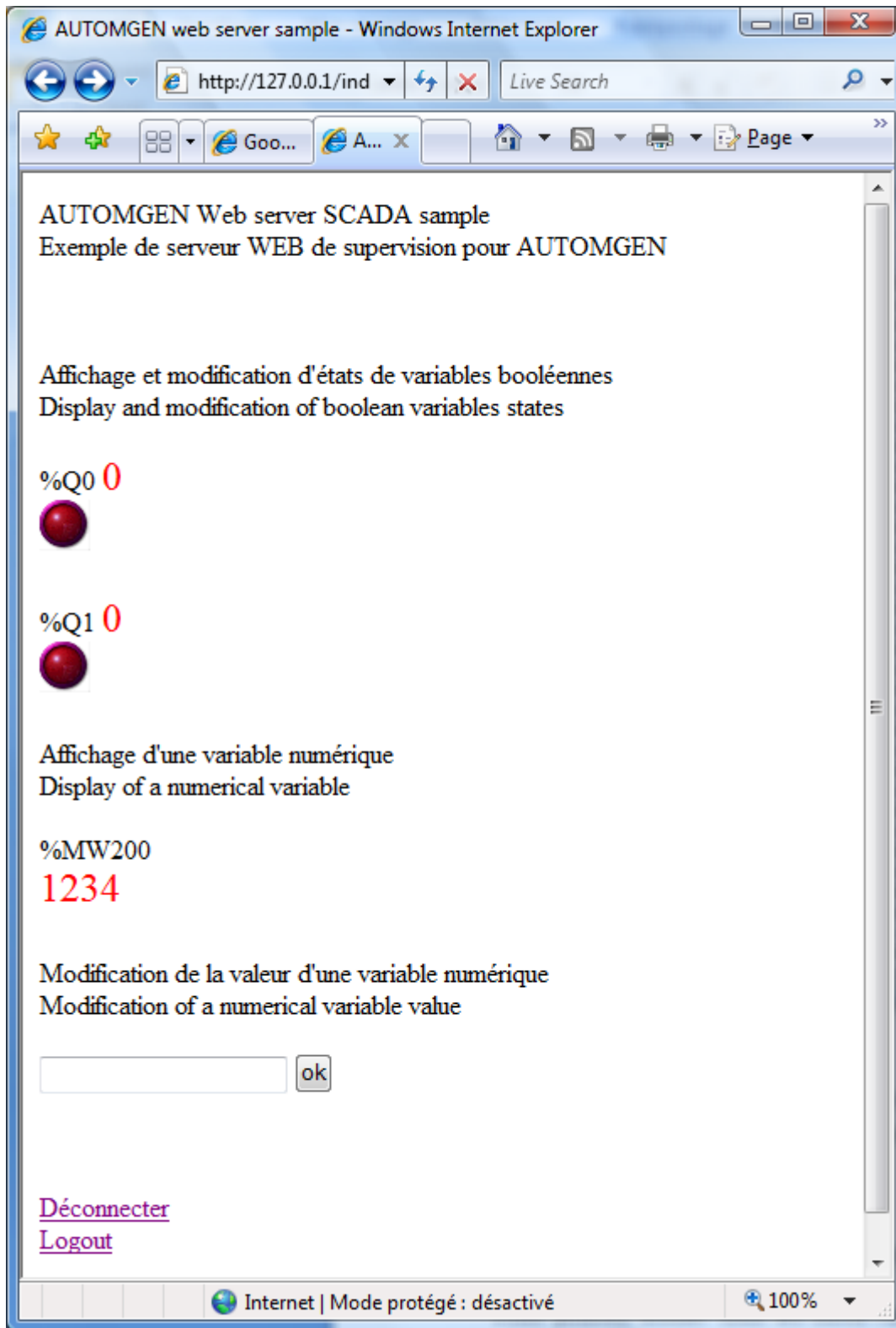


Then you can edit and display the state of the application variables provided as an example from Internet explorer.

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## 3- Defining applications

You can use the normal tools to create the HTML page/s which compose the application. The syntax {{variable name}} is used to enter the state of a variable. AUTOMGEN variable syntax is used (see the specific AUTOMGEN manual for more information). For example {{O4}} will be replaced by the value of output 4, {{m200}} will be replaced by the value of word 200. Only the following types of variables can be used: i for inputs, o for outputs, b for bits, m for 16 bit words and I for 32 bit words. To use different images for displaying the state of Boolean variables (like in the example), use the syntax {{variable name}} in the name of the image file. For example image{{o3}}.jpg will use the file image0.jpg if output 3 is in state 0 or image1.jpg if the variable is in state 1.

Editing of the variable state is done by going to a page with the "variable=value" parameter. For example, a link "index.html ?o10=1" will go to the index.html page by setting variable o10 to 1. For Boolean variables, a value of –1 generates an inversion of the variable state.

Look at the coding of the page index.html which provides an example and makes it possible to understand all of these syntaxes.

## 4- Protection by password

Access to the pages can be protected by a password. To do this, edit the "password" parameter in the file "httpd.xml". When this is documented, server access requests are routed to the "password.html" page.

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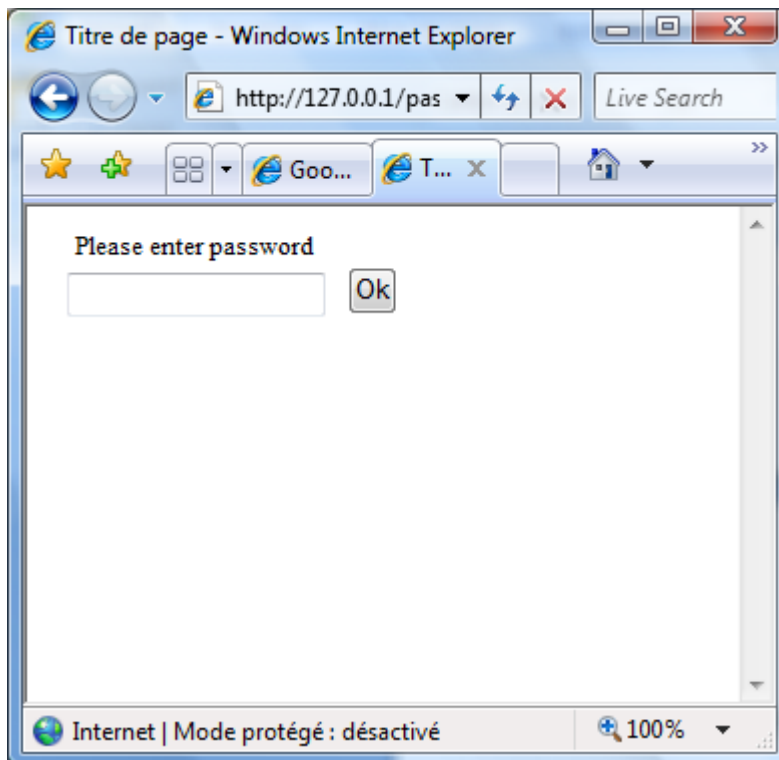
If the user enters a correct password, then access to the application home page is authorized. Access is authorized until you log off, this is done by going to the page index.html with the "password=" parameter (see the application provided as an example).

## 5- Advanced functions

5.1- Automatic page refresh

The following HTML code :

```
<meta http-equiv="Refresh" content="5; URL=index.html">
```

can be added to the HTML file header to automatically refresh the pages. Here, 5 represents the refresh period in seconds. This is used in the application provided as an example.

5.2- Prevent flashing

The following HTML code :

```
<meta http-equiv="Page-Enter" content="blendTrans(duration=0.1)">
```

to add to the HTML file header, is used to obtain a transition without flashing during page refresh. Attention, this is not supported by all Internet browsers. This is used in the application provided as an example.

## 6- Details of the httpd.xml parameter file

```xml
<?xml version="1.0"?>
<config>
  <!-- Port used by the http server to listen for incoming connections -->
  <!-- Port utilisé par le serveur pour recevoir les connexions entrantes -->
  <item name="port" value="80" />

  <!-- Root directory containing the server document -->
  <!-- Répertoire contenant les fichiers de l'application -->
  <item name="document_root" value="webserver\html" />

  <!-- Default file to append if not specified in the uri -->
  <!-- Nom de la page d'accueil de l'application -->
  <item name="default_file" value="index.html" />

  <!-- Number of thread in the pool serving the requests -->
  <!-- Nombres de connexions simultanées possible -->
  <item name="threadpoolsize" value="10" />

  <!-- password -->
  <!-- mot de passe -->
  <item name="password" value="" />

</config>
```

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