

Module <HTTP> of subsystem “Protocols”

| | |
|---------------------|---|
| <i>Module:</i> | HTTP |
| <i>Name:</i> | HTTP |
| <i>Type:</i> | Protocol |
| <i>Source:</i> | prot_HTTP.so |
| <i>Version:</i> | 1.4.1 |
| <i>Author:</i> | Roman Savochenko |
| <i>Translated:</i> | Maxim Lysenko |
| <i>Description:</i> | Provides support for the HTTP protocol for WWW-based user interfaces. |
| <i>License:</i> | GPL |

Contents table

| | |
|--|---|
| Module <HTTP> of subsystem “Protocols” | 1 |
| Introduction | 1 |
| 1. The modules of user WEB-interface | 3 |

Introduction

Module of the transport protocol HTTP is designed to support the implementation of network protocol HTTP (Hypertext Transfer Protocol) in the system OpenSCADA.

HTTP Protocol is used to transfer the WWW contents. For example, via HTTP the following types of documents are transmitted: html, xhtml, png, java, and many others. Adding the HTTP support in OpenSCADA system together with the Sockets transport allows to implement various user functions based on the WWW interface. As of the version 1.3.0, the module implements two main methods of the HTTP protocol: GET and POST. HTTP module provides control of the integrity of HTTP-queries and, in agreement with Sockets transport, allows to “collect” holistic requests of their fragments, as well as maintain the keeping of the connection alive (Keep-Alive).

For flexible connection of the user interfaces to the module the modular mechanism within the module HTTP is used. In the role of modules the modules of subsystem the “User interfaces” are used with the additional information field “SubType” with the value of “WWW”.

In the requests for the Web resources the URL(Universal Resource Locator) are commonly used, hence the URL is passed as the main parameter via HTTP. The first element of the requested URL is used to identify the module UI. For example URL: http://localhost:10002/WebCfg means – address to module WebCfg on the host http://localhost:10002. In the case of an incorrect indication of the module ID, or when you address without identifier of the module at all, HTTP module generates the dialogue of the information on the input and with the choice of one of the available user interfaces. Example of a dialogue is shown in Figure 1. Module supports authentication in the system OpenSCADA while providing authorized access to the WEB-interface modules (Fig.2). Dialogue is formed in the language of XHTML 1.0 Transitional!

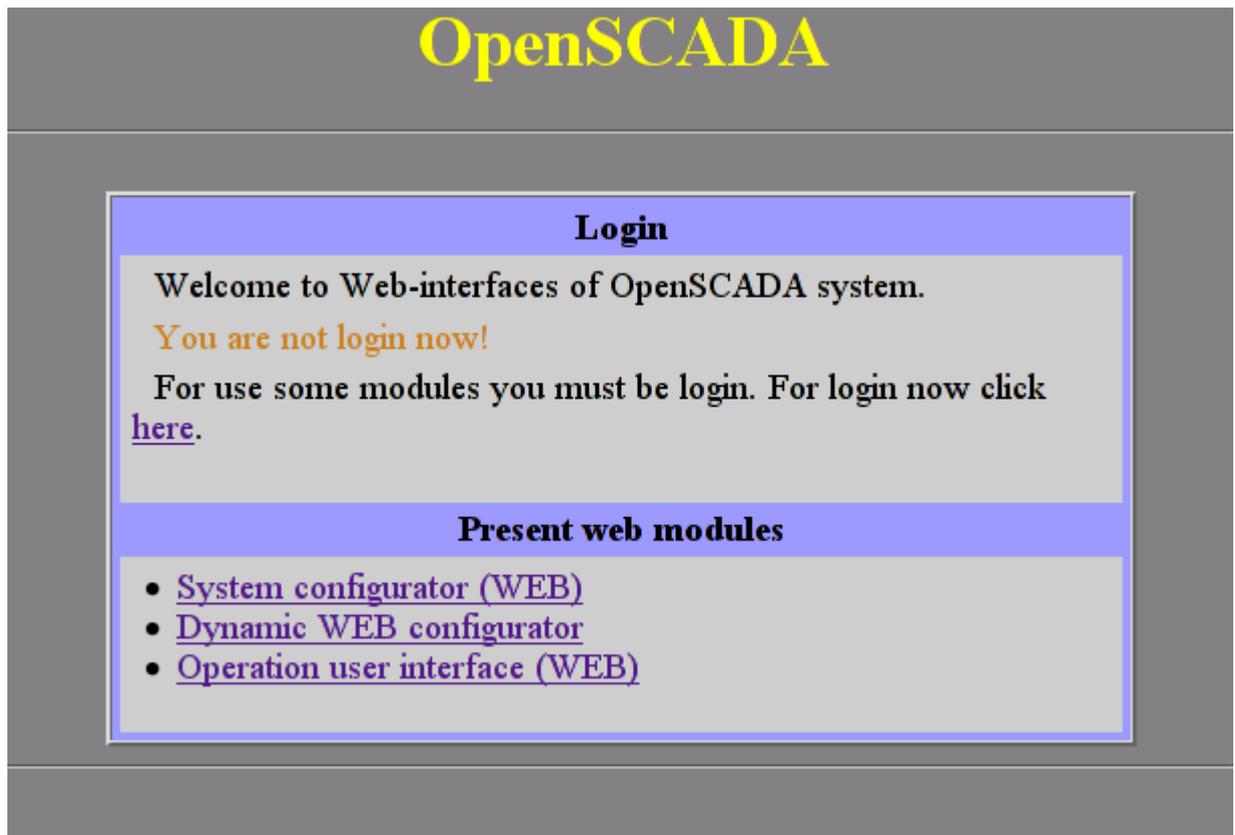


Fig.1. Dialog of the choice of WWW-interface module.



Fig.2. Authentication dialogue in the system OpenSCADA.

1. The modules of user WEB-interface

Modules of the user interface (UI) designed to work with HTTP module, should indicate an information field "SubType" with the value "WWW" and "Auth" field with the value "1" if the module requires an authentication at login. For communication of HTTP module and UI modules an advanced communication mechanism is used. This mechanism involves the export of interface functions. In this case the UI modules must export the following function:

- *void HttpGet(const string &url, string &page, const string &sender, vector<string> &vars, const string &user);* — GET method with the parameters:
 - url* — address of the request;
 - page* — page with the answer;
 - sender* — address of the sender;
 - vars* — request variables;
 - user* — user of the system.
- *void HttpPost(const string &url, string &page, const string &sender, vector<string> &vars, const string &user);* — POST method with the parameters:
 - url* — address of the request;
 - page* — page with the answer and with the contents of the body of the POST request;
 - sender* — address of the sender;
 - vars* — request variables;
 - user* — user of the system.

Then, in the case of a HTTP GET request, the function `HttpGet` will be called, and in the case of the POST request, the function `HttpPost` will be called in the appropriate UI module.