

Webster NodeBrain Module

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History

2005-10-12 Title: *NodeBrain Tutorial*
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2010-12-31 Release 0.8.3

- Updates - still needed

Preface

This module is intended for readers seeking an introduction to NodeBrain through a series of simple examples. Other documents are available for readers looking for a more complete reference to the rule language, modules, or API (application programmatic interface).

The intent of the examples in this module is to illustrate individual concepts, not to provide complete working applications or show all related options. We avoid formal syntax descriptions, thinking you are here because you want to figure it out from examples.

Files referenced in this tutorial are included in the tutorial directory of the NodeBrain distribution.

See www.nodebrain.org for more information and the latest update to this document.

Documents

NodeBrain Guide - Information on using **nb**

NodeBrain Tutorial - A gentle introduction to **nb** and the rule language

NodeBrain Language - Rule language syntax and semantics

NodeBrain Library - C API

Document Conventions

Sample code and input/output examples are displayed in a monospace font, indented in HTML and Info, and enclosed in a box in PDF or printed copies. Bold text is used to bring the reader's attention to specific portions of an example. In the following example, the first and last line are associated with the host shell and the lines in between are input or output unique to NodeBrain. The **define** command is highlighted, indicating it is the focus of the example. Lines ending with a backslash `\` indicate when a command is continued on the next displayed line. This is supported by the language within source files, but not for other methods of command input. If you copy an example of a command displayed over multiple lines, you must enter it as a single line when used outside the context of a source file.

```
$ nb
> define myFirstRule on(a=1 and b=2) mood="happy";
> assert mood="sad";
> show mood
mood = "sad"
> assert a=1,b=2,c=3,d="This is an example of a long single line that",\
    e="we depict on multiple lines to fit on the documnet page";
2008/06/05 12:09:08 NB000I Rule myFirstRule fired(mood="happy")
> show mood
mood = "happy"
> quit
$
```

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1 Concepts

A Webster module provides administrators with an HTTPS interface to NodeBrain agents, enabling the use of a web browser as a client. It is not intended as a general purpose web server and should not be used as alternative to web servers like Apache that are designed for general purpose use. However, it can be used to provide access to custom content packaged with a NodeBrain kit or application where a low rate of access is expected.

2 Tutorial

The world is governed more by appearance than realities, so that it is fully as necessary to seem to know something as to know it. —Daniel Webster (1782–1852)

The Webster module enables NodeBrain to pretend to be a web server—not with the goal of providing a web server for web applications in general but to support little web tools associated with NodeBrain applications.

Although Webster supports x509 certificate authentication, let's skip over all that fun stuff and get it running quickly with no security. If you don't secure it with password or certificate authentication, Webster doesn't let you do anything other than display web pages, so other than exposing a port that could be vulnerable to buffer overflow errors if NodeBrain has bugs, there is no risk in running it without security.

For this tutorial, the files are in the `tutorial/Webster` subdirectory of the distribution directory. The server script `webster1` looks like this.

```
#!/usr/local/bin/nb -d
# File: tutorial/Webster/webster1
-rm webster.log
set out=".",log="webster.log";
define webster node webster;
webster. define uri cell "http://0.0.0.0:62443";
webster. define Authenticate cell "no"; # Default is "yes"
```

A Webster server is specified as `identity@interface:port`. You are using the default identity, all interfaces "0.0.0.0", and port 62443. The "443" reminds you that you'd prefer to use HTTPS in a real application. Change the port number if 62443 is used on your system.

If there are no errors in the log file, you can leave your server running and connect with your web browser using the following URL.

```
http://hostname:62443
```

This tutorial continues on the page displayed by your browser.

3 Commands

3.1 Define

Syntax

<i>websterDefinition</i>	::= define § <i>term</i> § node [§ " <i>identity</i> "] [;] •
<i>identity</i>	::= Identity for commands issued by the webster node.
<i>cellOption</i>	::= <i>term</i> . define option cell value [;] •
<i>textOption</i>	::= <i>term</i> . define websterModuleOption text: value
	•
<i>option</i>	::= <i>tlsApiOption</i> <i>websterApiOption</i> <i>websterModuleOption</i>
<i>tlsApiOption</i>	::= See list below
<i>websterApiOption</i>	::= See list below
<i>websterModuleOption</i>	::= See list below

The following NodeBrain TLS API options are specified as cells within the context of a Webster node.

Option	Description
uri	Protocol, interface, and port Default: "https://0.0.0.0:49443"
option	Authentication option Default: "CERTS"
timeout	Read timeout seconds Default: 5
keyfile	File containing the server key Default: "security/ServerKey.pem"
certfile	File containing the server certificate Default: "security/ServerCert.pem"
trustfile	File containing the server key Default: "security/TrustedCertificates.pem"

The following NodeBrain Webster API options are specified as cells within the context of a Webster node.

Option	Description
Filter	NodeBrain translator used as web application filter Define: -none-
DocumentRoot	Root directory for web pages Default: "web"
IndexPath	Page selected by default when resource is a directory Default: "index.html"
IndexQuery	Parameters if the IndexPath accepts them (e.g. cgi script)

Authenticate	Default: -none- Authentication option "yes" "certificate" "password" "no" Default: "yes"
AccessList	Access control list file [deprecated - see Authorize] Default: "security/AccessList.conf"
Config	Configuration file name - see next block of options below Default: ""

The following Webster module options are specified as string or text cells within the context of a Webster node.

Option	Description
Title	Title displayed in the center of a Webster page heading Default: "MyCaboodle"
Link	Link associated with the title in Webster page heading Default: "http://nodebrain.org"
Menu	Menu displayed in top right area of Webster page heading Default: "Webster"
Version	Application version number to display in Webster page heading Default: ""

When Webster module options are specified in a configuration file identified by the `Config` option and illustrated below, the values specified in the configuration file override values specified as cells.

```
# Comment lines start with "#".
# Blank lines are allowed
Title="MyCaboodle";
Version="";
Link="http://nodebrain.org";
Menu="<a href=':page">Webster</a>";
```

One reason you want to use a configuration file is to share these options with cgi scripts.

4 Triggers

The Webster module does not implement any triggers

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