# Wikiprint Book

Title: Tracd

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#### **Tracd**

Tracd is a lightweight standalone Trac web server. It can be used in a variety of situations, from a test or development server to a multiprocess setup behind another web server used as a load balancer.

#### **Pros**

- Fewer dependencies: You don't need to install apache or any other web-server.
- Fast: Should be almost as fast as the mod\_python version (and much faster than the CGI), even more so since version 0.12 where the HTTP/1.1 version of the protocol is enabled by default
- Automatic reloading: For development, Tracd can be used in auto\_reload mode, which will automatically restart the server whenever you make a
  change to the code (in Trac itself or in a plugin).

#### Cons

- · Fewer features: Tracd implements a very simple web-server and is not as configurable or as scalable as Apache httpd.
- No native HTTPS support: sslwrap can be used instead, or stunnel -- a tutorial on how to use stunnel with tracd or Apache with mod\_proxy.

#### **Usage examples**

A single project on port 8080. (http://localhost:8080/)

```
$ tracd -p 8080 /path/to/project
```

Strictly speaking this will make your Trac accessible to everybody from your network rather than *localhost only*. To truly limit it use the --hostname option.

```
$ tracd --hostname=localhost -p 8080 /path/to/project
```

With more than one project. ( http://localhost:8080/project1/ and http://localhost:8080/project2/)

```
$ tracd -p 8080 /path/to/project1 /path/to/project2
```

You can't have the last portion of the path identical between the projects since Trac uses that name to keep the URLs of the different projects unique. So if you use /project1/path/to and /project2/path/to, you will only see the second project.

An alternative way to serve multiple projects is to specify a parent directory in which each subdirectory is a Trac project, using the -e option. The example above could be rewritten:

```
$ tracd -p 8080 -e /path/to
```

To exit the server on Windows, be sure to use CTRL-BREAK -- using CTRL-C will leave a Python process running in the background.

# Installing as a Windows Service

# Option 1

To install as a Windows service, get the **SRVANY** utility and run:

```
C:\path\to\instsrv.exe tracd C:\path\to\srvany.exe
reg add HKLM\SYSTEM\CurrentControlSet\Services\tracd\Parameters /v Application /d "\"C:\path\to\python.exe\" \"C:\path\to\p
net start tracd
```

**DO NOT** use tracd.exe. Instead register python.exe directly with tracd-script.py as a parameter. If you use tracd.exe, it will spawn the python process without SRVANY's knowledge. This python process will survive a net stop tracd.

If you want tracd to start automatically when you boot Windows, do:

```
sc config tracd start= auto
```

The spacing here is important.

Once the service is installed, it might be simpler to run the Registry Editor rather than use the reg add command documented above. Navigate to: HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\tracd\Parameters

Three (string) parameters are provided:

AppDirectory	C:\Python26\
Application	python.exe
AppParameters	scripts\tracd-script.py -p 8080

Note that, if the AppDirectory is set as above, the paths of the executable and of the script name and parameter values are relative to the directory. This makes updating Python a little simpler because the change can be limited, here, to a single point. (This is true for the path to the .htpasswd file, as well, despite the documentation calling out the /full/path/to/htpasswd; however, you may not wish to store that file under the Python directory.)

For Windows 7 User, srvany.exe may not be an option, so you can use <u>WINSERV</u> utility and run:

"C:\path\to\winserv.exe" install tracd -displayname "tracd" -start auto "C:\path\to\python.exe" c:\path\to\python\scripts\t

#### Option 2

Use WindowsServiceScript, available at Trac Hacks. Installs, removes, starts, stops, etc. your Trac service.

#### Option 3

also cygwin's cygrunsrv.exe can be used:

```
$ cygrunsrv --install tracd --path /cygdrive/c/Python27/Scripts/tracd.exe --args '--port 8000 --env-parent-dir E:\IssueTrac
$ net start tracd
```

### **Using Authentication**

Tracd allows you to run Trac without the need for Apache, but you can take advantage of Apache's password tools (htpasswd and htdigest) to easily create a password file in the proper format for tracd to use in authentication. (It is also possible to create the password file without htpasswd or htdigest; see below for alternatives)

Attention: Make sure you place the generated password files on a filesystem which supports sub-second timestamps, as Trac will monitor their modified time and changes happening on a filesystem with too coarse-grained timestamp resolution (like ext2 or ext3 on Linux, or HFS+ on OSX).

Tracd provides support for both Basic and Digest authentication. Digest is considered more secure. The examples below use Digest; to use Basic authentication, replace --auth with --basic-auth in the command line.

The general format for using authentication is:

```
$ tracd -p port --auth="base_project_dir,password_file_path,realm" project_path
```

where:

base\_project\_dir: the base directory of the project specified as follows:

- when serving multiple projects: relative to the project\_path
- when serving only a single project (-s): the name of the project directory

Don't use an absolute path here as this won't work. Note: This parameter is case-sensitive even for environments on Windows.

- password\_file\_path: path to the password file
- realm: the realm name (can be anything)
- project\_path: path of the project
- --auth in the above means use Digest authentication, replace --auth with --basic-auth if you want to use Basic auth. Although Basic authentication does not require a "realm", the command parser does, so the second comma is required, followed directly by the closing quote for an empty realm name.

Examples:

```
$ tracd -p 8080 \
  --auth="project1,/path/to/passwordfile,mycompany.com" /path/to/project1
```

Of course, the password file can be be shared so that it is used for more than one project:

```
$ tracd -p 8080 \
  --auth="project1,/path/to/passwordfile,mycompany.com" \
  --auth="project2,/path/to/passwordfile,mycompany.com" \
  /path/to/project1 /path/to/project2
```

Another way to share the password file is to specify "\*" for the project name:

```
$ tracd -p 8080 \
  --auth="*,/path/to/users.htdigest,mycompany.com" \
/path/to/project1 /path/to/project2
```

### Basic Authorization: Using a htpasswd password file

This section describes how to use tracd with Apache .htpasswd files.

Note: On Windows It is necessary to install the passlib package in order to decode some httpsswd formats. Only SHA-1 passwords (since Trac 1.0) work without this module.

To create a .htpasswd file use Apache's htpasswd command (see below for a method to create these files without using Apache):

```
$ sudo htpasswd -c /path/to/env/.htpasswd username
```

then for additional users:

```
$ sudo htpasswd /path/to/env/.htpasswd username2
```

Then to start tracd run something like this:

```
$ tracd -p 8080 --basic-auth="project,/fullpath/environmentname/.htpasswd,realmname" /path/to/project
```

For example:

```
$ tracd -p 8080 --basic-auth="project,/srv/tracenv/testenv/.htpasswd,My Test Env" /path/to/project
```

Note: You might need to pass "-m" as a parameter to htpasswd on some platforms (OpenBSD).

### Digest authentication: Using a htdigest password file

If you have Apache available, you can use the htdigest command to generate the password file. Type 'htdigest' to get some usage instructions, or read <a href="this page">this page</a> from the Apache manual to get precise instructions. You'll be prompted for a password to enter for each user that you create. For the name of the password file, you can use whatever you like, but if you use something like users.htdigest it will remind you what the file contains. As a suggestion, put it in your projectname/conf folder along with the <a href="trac.ini">trac.ini</a> file.

Note that you can start tracd without the --auth argument, but if you click on the Login link you will get an error.

# **Generating Passwords Without Apache**

Basic Authorization can be accomplished via this **conline HTTP Password generator** which also supports SHA-1. Copy the generated password-hash line to the .htpasswd file on your system. Note that Windows Python lacks the "crypt" module that is the default hash type for htpasswd. Windows Python can grok MD5 password hashes just fine and you should use MD5.

Trac also provides htpasswd and htdigest scripts in contrib:

```
$ ./contrib/htpasswd.py -cb htpasswd user1 user1
$ ./contrib/htpasswd.py -b htpasswd user2 user2
$ ./contrib/htdigest.py -cb htdigest trac user1 user1
$ ./contrib/htdigest.py -b htdigest trac user2 user2
```

## Using md5sum

It is possible to use md5sum utility to generate digest-password file:

```
user=
realm=
password=
path_to_file=
echo ${user}:${realm}:${password}" | md5sum - | sed -e 's/\s\+-//') > ${path_to_file}
```

#### Reference

Here's the online help, as a reminder (tracd --help):

```
Usage: tracd [options] [projenv] ...
Options:
--version
                      show program's version number and exit
-h, --help
                      show this help message and exit
-a DIGESTAUTH, --auth=DIGESTAUTH
                      [projectdir],[htdigest_file],[realm]
--basic-auth=BASICAUTH
                      [projectdir],[htpasswd_file],[realm]
 -p PORT, --port=PORT the port number to bind to
-b HOSTNAME, --hostname=HOSTNAME
                      the host name or IP address to bind to
 --protocol=PROTOCOL http|scgi|ajp|fcgi
-q, --unquote
                      unquote PATH_INFO (may be needed when using ajp)
 --http10
                      use HTTP/1.0 protocol version instead of HTTP/1.1
--http11
                      use HTTP/1.1 protocol version (default)
 -e PARENTDIR, --env-parent-dir=PARENTDIR
                      parent directory of the project environments
 --base-path=BASE_PATH
                      the initial portion of the request URL's "path"
 -r, --auto-reload
                      restart automatically when sources are modified
    --single-env
                      only serve a single project without the project list
 -d, --daemonize
                      run in the background as a daemon
 --pidfile=PIDFILE
                      when daemonizing, file to which to write pid
 --umask=MASK
                      when daemonizing, file mode creation mask to use, in
                      octal notation (default 022)
 --group=GROUP
                      the group to run as
 --user=USER
                      the user to run as
```

Use the -d option so that tracd doesn't hang if you close the terminal window where tracd was started.

### **Tips**

# Serving static content

If tracd is the only web server used for the project, it can also be used to distribute static content (tarballs, Doxygen documentation, etc.)

This static content should be put in the \$TRAC\_ENV/htdocs folder, and is accessed by URLs like spect\_URL>/chrome/site/....

Example: given a \$TRAC\_ENV/htdocs/software-0.1.tar.gz file, the corresponding relative URL would be /////chrome/site/software-0.1.tar.gz, which in turn can be written as htdocs:software-0.1.tar.gz (<a href="TracLinks">TracLinks</a> syntax)
or [//project\_name>/chrome/site/software-0.1.tar.gz] (relative link syntax).

# Using tracd behind a proxy

In some situations when you choose to use tracd behind Apache or another web server.

In this situation, you might experience issues with redirects, like being redirected to URLs with the wrong host or protocol. In this case (and only in this case), setting the [trac] use\_base\_url\_for\_redirect to true can help, as this will force Trac to use the value of [trac] base\_url for doing the redirects.

If you're using the AJP protocol to connect with tracd (which is possible if you have flup installed), then you might experience problems with double quoting. Consider adding the --unquote parameter.

See also ■TracOnWindowslisAjp, ■TracNginxRecipe.

#### Authentication for tracd behind a proxy

It is convenient to provide central external authentication to your tracd instances, instead of using --basic-auth. There is some discussion about this in #9206.

Below is example configuration based on Apache 2.2, mod\_proxy, mod\_authnz\_ldap.

First we bring tracd into Apache's location namespace.

```
<Location /project/proxified>
    Require ldap-group cn=somegroup, ou=Groups,dc=domain.com
    Require ldap-user somespecificusertoo
    ProxyPass http://localhost:8101/project/proxified/
    # Turns out we don't really need complicated RewriteRules here at all
    RequestHeader set REMOTE_USER %{REMOTE_USER}s
</Location>
```

Then we need a single file plugin to recognize HTTP\_REMOTE\_USER header as valid authentication source. HTTP headers like HTTP\_FOO\_BAR will get converted to Foo-Bar during processing. Name it something like remote-user-auth.py and drop it into proxified/plugins directory:

Add this new parameter to your Traclni:

```
[trac]
...
obey_remote_user_header = true
...
Run tracd:
tracd -p 8101 -s proxified --base-path=/project/proxified
```

Note that if you want to install this plugin for all projects, you have to put it in your global plugins\_dir and enable it in your global trac.ini.

```
Global config (e.g. /srv/trac/conf/trac.ini):
```

```
[components]
remote-user-auth.* = enabled
[inherit]
plugins_dir = /srv/trac/plugins
[trac]
obey_remote_user_header = true
```

Environment config (e.g. /srv/trac/envs/myenv):

[inherit]
file = /srv/trac/conf/trac.ini

# Serving a different base path than /

Tracd supports serving projects with different base urls than /project>. The parameter name to change this is

\$ tracd --base-path=/some/path

See also: <u>TracInstall</u>, <u>TracCgi</u>, <u>TracModPython</u>, <u>TracGuide</u>, <u>■Running tracd.exe as a Windows service</u>