

Title: Trac and mod\_python

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## Trac and mod\_python

Trac supports [mod\\_python](#), which speeds up Trac's response times considerably, especially compared to [CGI](#), and permits use of many Apache features not possible with [tracd/mod\\_proxy](#).

These instructions are for Apache 2; if you are still using Apache 1.3, you may have some luck with [TracModPython2.7?](#).

### Simple configuration

If you just installed mod\_python, you may have to add a line to load the module in the Apache configuration:

```
LoadModule python_module modules/mod_python.so
```

*Note: The exact path to the module depends on how the HTTPD installation is laid out.*

On Debian using apt-get

```
apt-get install libapache2-mod-python libapache2-mod-python-doc
```

(Still on Debian) after you have installed mod\_python, you must enable the modules in apache2 (equivalent of the above Load Module directive):

```
a2enmod mod_python
```

On Fedora use, using yum:

```
yum install mod_python
```

You can test your mod\_python installation by adding the following to your httpd.conf. You should remove this when you are done testing for security reasons. Note: mod\_python.testhandler is only available in mod\_python 3.2+.

```
<Location /mpinfo>
    SetHandler mod_python
    PythonInterpreter main_interpreter
    PythonHandler mod_python.testhandler
</Location>
```

A simple setup of Trac on mod\_python looks like this:

```
<Location /projects/myproject>
    SetHandler mod_python
    PythonInterpreter main_interpreter
    PythonHandler trac.web.modpython_frontend
    PythonOption TracEnv /var/trac/myproject
    PythonOption TracUriRoot /projects/myproject
</Location>
```

The option TracUriRoot may or may not be necessary in your setup. Try your configuration without it; if the URLs produced by Trac look wrong, if Trac does not seem to recognize URLs correctly, or you get an odd "No handler matched request to..." error, add the TracUriRoot option. You will notice that the Location and TracUriRoot have the same path.

The options available are

```
# For a single project
PythonOption TracEnv /var/trac/myproject
# For multiple projects
PythonOption TracEnvParentDir /var/trac/myprojects
# For the index of multiple projects
PythonOption TracEnvIndexTemplate /srv/www/htdocs/trac/project_list_template.html
# A space delimited list, with a "," between key and value pairs.
```

```

PythonOption TracTemplateVars key1,val1 key2,val2
# Useful to get the date in the wanted order
PythonOption TracLocale en_GB.UTF8
# See description above
PythonOption TracUriRoot /projects/myproject
# Override default python egg cache location
PythonOption PYTHON_EGG_CACHE /var/trac/myprojects/egg-cache

```

## Configuring Authentication

Creating password files and configuring authentication works similar to the process for [CGI](#):

```

<Location /projects/myproject/login>
AuthType Basic
AuthName "myproject"
AuthUserFile /var/trac/myproject/.htpasswd
Require valid-user
</Location>

```

Configuration for mod\_ldap authentication in Apache is a bit tricky (httpd 2.2.x and OpenLDAP: slapd 2.3.19)

1. You need to load the following modules in Apache httpd.conf

```

LoadModule ldap_module modules/mod_ldap.so
LoadModule authnz_ldap_module modules/mod_authnz_ldap.so

```

1. Your httpd.conf also needs to look something like:

```

<Location /trac/>
SetHandler mod_python
PythonInterpreter main_interpreter
PythonHandler trac.web.modpython_frontend
PythonOption TracEnv /home/trac/
PythonOption TracUriRoot /trac/
Order deny,allow
Deny from all
Allow from 192.168.11.0/24
AuthType Basic
AuthName "Trac"
AuthBasicProvider "ldap"
AuthLDAPURL "ldap://127.0.0.1/dc=example,dc=co,dc=ke?uid?sub?(objectClass=inetOrgPerson)"
authzldapauthoritative Off
require valid-user
</Location>

```

Or the LDAP interface to a Microsoft Active Directory:

```

<Location /trac/>
SetHandler mod_python
PythonInterpreter main_interpreter
PythonHandler trac.web.modpython_frontend
PythonOption TracEnv /home/trac/
PythonOption TracUriRoot /trac/
Order deny,allow
Deny from all
Allow from 192.168.11.0/24
AuthType Basic
AuthName "Trac"
AuthBasicProvider "ldap"
AuthLDAPURL "ldap://adserver.company.com:3268/DC=company,DC=com?sAMAccountName?sub?(objectClass=user)"

```

```
AuthLDAPBindDN      ldap-auth-user@company.com
AuthLDAPBindPassword "the_password"
authzldapauthoritative Off
# require valid-user
require ldap-group CN=Trac Users,CN=Users,DC=company,DC=com
</Location>
```

Note 1: This is the case where the LDAP search will get around the multiple OUs, connecting to Global Catalog Server portion of AD (Notice the port is 3268, not the normal LDAP 389). The GCS is basically a "flattened" tree which allows searching for a user without knowing to which OU they belong.

Note 2: Active Directory requires an authenticating user/password to access records (AuthLDAPBindDN and AuthLDAPBindPassword).

Note 3: The directive "require ldap-group ..." specifies an AD group whose members are allowed access.

## Setting the PythonPath

If the Trac installation isn't installed in your Python path, you'll have to tell Apache where to find the Trac mod\_python handler using the PythonPath directive:

```
<Location /projects/myproject>
...
PythonPath "sys.path + ['/path/to/trac']"
...
</Location>
```

Be careful about using the PythonPath directive, and *not* SetEnv PYTHONPATH, as the latter won't work.

## Setting up multiple projects

The Trac mod\_python handler supports a configuration option similar to Subversion's SvnParentPath, called TracEnvParentDir:

```
<Location /projects>
SetHandler mod_python
PythonInterpreter main_interpreter
PythonHandler trac.web.modpython_frontend
PythonOption TracEnvParentDir /var/trac
PythonOption TracUriRoot /projects
</Location>
```

When you request the /projects URL, you will get a listing of all subdirectories of the directory you set as TracEnvParentDir that look like Trac environment directories. Selecting any project in the list will bring you to the corresponding Trac environment.

If you don't want to have the subdirectory listing as your projects home page you can use a

```
<LocationMatch "/.+/">
```

This will instruct Apache to use mod\_python for all locations different from root while having the possibility of placing a custom home page for root in your DocumentRoot folder.

You can also use the same authentication realm for all of the projects using a <LocationMatch> directive:

```
<LocationMatch "/projects/[^/]+/login">
AuthType Basic
AuthName "Trac"
AuthUserFile /var/trac/.htpasswd
Require valid-user
</LocationMatch>
```

## Virtual Host Configuration

Below is the sample configuration required to set up your trac as a virtual server (i.e. when you access it at the URLs like <http://trac.mycompany.com>):

```
<VirtualHost >
  DocumentRoot /var/www/myproject
  ServerName trac.mycompany.com
  <Location />
    SetHandler mod_python
    PythonInterpreter main_interpreter
    PythonHandler trac.web.modpython_frontend
    PythonOption TracEnv /var/trac/myproject
    PythonOption TracUriRoot /
  </Location>
  <Location /login>
    AuthType Basic
    AuthName "MyCompany Trac Server"
    AuthUserFile /var/trac/myproject/.htpasswd
    Require valid-user
  </Location>
</VirtualHost>
```

if you have issues with login try using `<LocationMatch>` instead of `<Location>`

For a virtual host that supports multiple projects replace "TracEnv" `/var/trac/myproject` with "TracEnvParentDir" `/var/trac/`

Note: DocumentRoot should not point to your Trac project env. As Asmodai wrote on #trac: "suppose there's a webserver bug that allows disclosure of DocumentRoot they could then leech the entire Trac environment".

## Troubleshooting

In general, if you get server error pages, you can either check the Apache error log, or enable the PythonDebug option:

```
<Location /projects/myproject>
  ...
  PythonDebug on
</Location>
```

For multiple projects, try restarting the server as well.

## Expat-related segmentation faults

This problem will most certainly hit you on Unix when using Python 2.4. In Python 2.4, some version of Expat (an XML parser library written in C) is used, and if Apache is using another version, this results in segmentation faults. As Trac 0.11 is using Genshi, which will indirectly use Expat, that problem can now hit you even if everything was working fine before with Trac 0.10.

See Graham Dumpleton's detailed [\[explanation and workarounds\]](#) for the issue.

## Form submission problems

If you're experiencing problems submitting some of the forms in Trac (a common problem is that you get redirected to the start page after submission), check whether your DocumentRoot contains a folder or file with the same path that you mapped the mod\_python handler to. For some reason, mod\_python gets confused when it is mapped to a location that also matches a static resource.

## Problem with virtual host configuration

If the `<Location />` directive is used, setting the DocumentRoot may result in a *403 (Forbidden)* error. Either remove the DocumentRoot directive, or make sure that accessing the directory it points to is allowed (in a corresponding `<Directory>` block).

Using `<Location />` together with `SetHandler` resulted in having everything handled by mod\_python, which leads to not being able download any CSS or images/icons. I used `<Location /trac> SetHandler None </Location>` to circumvent the problem, though I do not know if this is the most elegant solution.

## Using .htaccess

Although it may seem trivial to rewrite the above configuration as a directory in your document root with a `.htaccess` file, this does not work. Apache will append a `/"` to any Trac URLs, which interferes with its correct operation.

It may be possible to work around this with `mod_rewrite`, but I failed to get this working. In all, it is more hassle than it is worth. Stick to the provided instructions. :)

### Win32 Issues

If you run trac with `mod_python < 3.2` on Windows, uploading attachments will **not** work. This problem is resolved in `mod_python 3.1.4` or later, so please upgrade `mod_python` to fix this.

### OS X issues

When using `mod_python` on OS X you will not be able to restart Apache using `apachectl restart`. This is apparently fixed in `mod_python 3.2`, but there's also a patch available for earlier versions [\[here\]](#).

### SELinux issues

If Trac reports something like: *Cannot get shared lock on db.lock* The security context on the repository may need to be set:

```
chcon -R -h -t httpd_sys_content_t PATH_TO_REPOSITORY
```

See also <http://subversion.tigris.org/faq.html#reposperms>

### FreeBSD issues

Pay attention to the version of the installed `mod_python` and `sqlite` packages. Ports have both the new and old ones, but earlier versions of `pysqlite` and `mod_python` won't integrate as the former requires threaded support in python, and the latter requires a threadless install.

If you compiled and installed `apache2`, `apache` wouldn't support threads (cause it doesn't work very well on FreeBSD). You could force thread support when running `./configure` for `apache`, using `--enable-threads`, but this isn't recommendable. The best option

[http://modpython.org/pipermail/mod\\_python/2006-September/021983.html](http://modpython.org/pipermail/mod_python/2006-September/021983.html) seems to be adding to `/usr/local/apache2/bin/ennvars` the line

```
export LD_PRELOAD=/usr/lib/libc_r.so
```

### Subversion issues

If you get the following Trac Error `Unsupported version control system "svn"` only under `mod_python`, though it works well on the command-line and even with [TracStandalone](#), chances are that you forgot to add the path to the Python bindings with the [PythonPath](#) directive. (The better way is to add a link to the bindings in the Python `site-packages` directory, or create a `.pth` file in that directory.)

If this is not the case, it's possible that you're using Subversion libraries that are binary incompatible with the `apache` ones (an incompatibility of the `apr` libraries is usually the cause). In that case, you also won't be able to use the `svn` modules for Apache (`mod_dav_svn`).

You also need a recent version of `mod_python` in order to avoid a runtime error (argument number 2: a 'apr\_pool\_t \*' is expected) due to the default usage of multiple sub-interpreters. `3.2.8` *should* work, though it's probably better to use the workaround described in [#3371](#), in order to force the use of the main interpreter:

```
PythonInterpreter main_interpreter
```

This is anyway the recommended workaround for other well-known issues seen when using the Python bindings for Subversion within `mod_python` ([#2611](#), [#3455](#)). See in particular Graham Dumpleton's comment in [#3455](#) explaining the issue.

### Page layout issues

If the formatting of the Trac pages look weird chances are that the style sheets governing the page layout are not handled properly by the web server. Try adding the following lines to your `apache` configuration:

```
Alias /myproject/css "/usr/share/trac/htdocs/css"
<Location /myproject/css>
    SetHandler None
```

```
</Location>
```

Note: For the above configuration to have any effect it must be put after the configuration of your project root location, i.e. `<Location /myproject />`.

### HTTPS issues

If you want to run Trac fully under https you might find that it tries to redirect to plain http. In this case just add the following line to your apache configuration:

```
<VirtualHost *: >
    DocumentRoot /var/www/myproject
    ServerName trac.mycompany.com
    SetEnv HTTPS 1
    ....
</VirtualHost>
```

### Fedora 7 Issues

Make sure you install the 'python-sqlite2' package as it seems to be required for [TracModPython](#) but not for tracd

### Segmentation fault with php5-mhash or other php5 modules

You may encounter segfaults (reported on debian etch) if php5-mhash module is installed. Try to remove it to see if this solves the problem. See debian bug report <http://bugs.debian.org/cgi-bin/bugreport.cgi?bug=411487>

Some people also have troubles when using php5 compiled with its own 3rd party libraries instead of system libraries. Check here <http://www.djangoproject.com/documentation/modpython/#if-you-get-a-segmentation-fault>

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See also [TracGuide](#), [TracInstall](#), [TracCgi](#), [TracFastCgi](#)