repoze.profile Documentation

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Contents

This package provides a WSGI middleware component which aggregates profiling data across *all* requests to the WSGI application. It provides a web GUI for viewing profiling data.

CHAPTER 1

Installation

Install using setuptools, e.g. (within a virtualenv):

```
$ easy_install repoze.profile
```

CHAPTER 2

Configuration via Python

Wire up the middleware in your application:

```
from repoze.profile import ProfileMiddleware
middleware = ProfileMiddleware(
               app,
               log_filename='/foo/bar.log',
               cachegrind_filename='/foo/cachegrind.out.bar',
               discard_first_request=True,
               flush_at_shutdown=True,
               path='/__profile__',
               unwind=False,
              )
```

The configuration options are as follows:

```
- ``log_filename`` is the name of the file to which the accumulated
  profiler statistics are logged.

- ``cachegrind_filename`` is the optional name of the file to which
  the accumulated profiler statistics are logged in the KCachegrind
  format.

- If ``discard_first_request`` to true (the default), then the
  middleware discards the statistics for the first request:  the
  rationale is that there are a bunch of lazy / "first time"
  initializations which distort measurement of the application's
  normal performance.

- If ``flush_at_shutdown`` is true (the default), profiling data will
  be deleted when the middleware instance disappears (via its
  __del__).  If it's false, profiling data will not be deleted.

- ``path`` is the URL path to the profiler UI.  It defaults to
  ``/__profile__``.
```

```
- ``unwind`` is a configuration flag which indicates whether the app_iter
  returned by the downstream application should unwound and its results read
  into memory.  Setting this to true is useful for applications which use
  generators or other iterables to do "real work" that you'd like to
  profile, at the expense of consuming a lot of memory if you hit a URL
  which returns a lot of data.  It defaults to false.
```

CHAPTER 3

Configuration via Paste

Wire the middleware into a pipeline in your Paste configuration, for example:

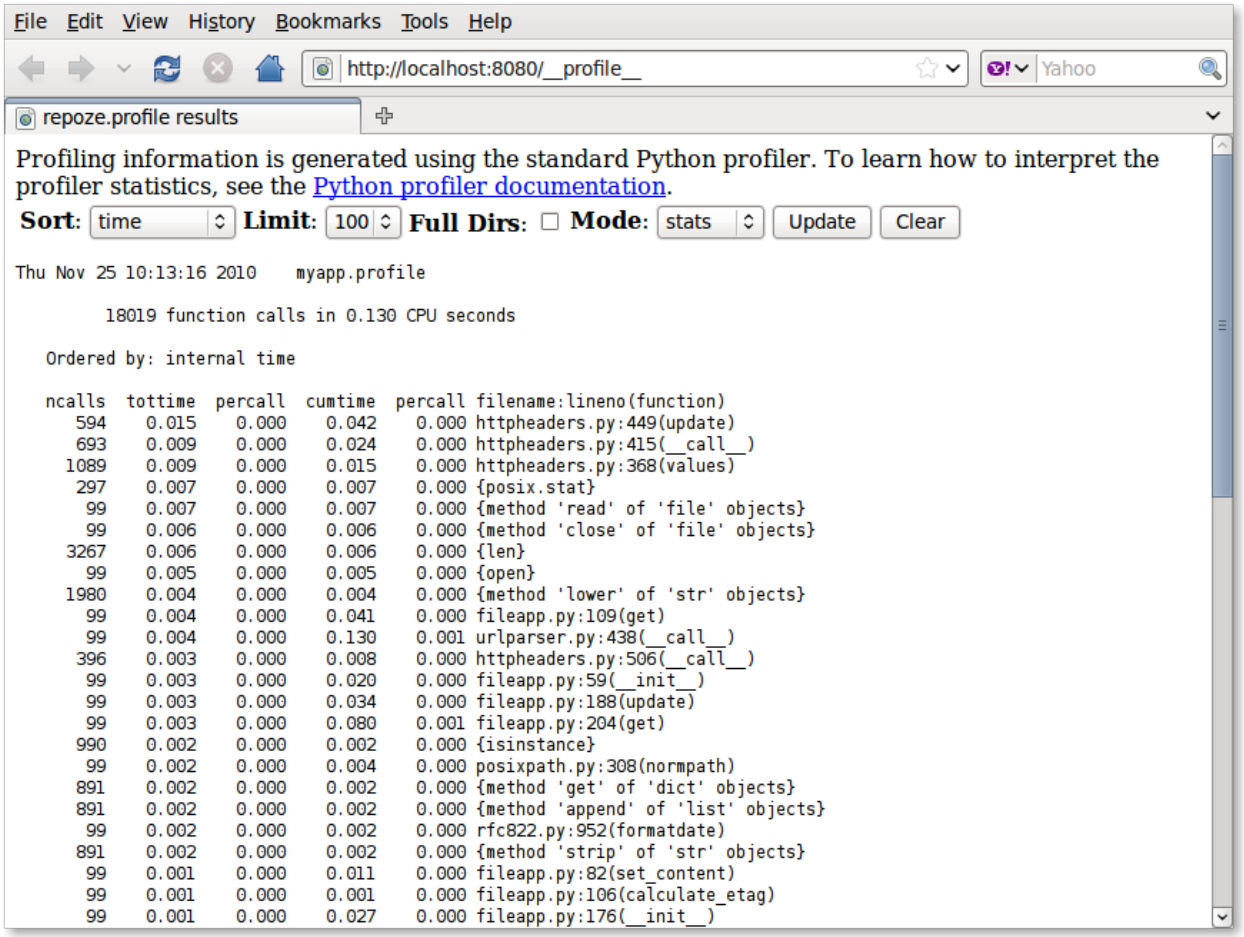
```
[filter:profile]
use = egg:repoze.profile
log_filename = myapp.profile
cachegrind_filename = cachegrind.out.myapp
discard_first_request = true
path = /__profile__
flush_at_shutdown = true
unwind = false
...

[pipeline:main]
pipeline = egg:Paste#cgitb
           egg:Paste#httpexceptions
           profile
           myapp
```

CHAPTER 4

Viewing the Profile Statistics

As you exercise your application, the profiler collects statistics about the functions or methods which are called, including timings. Please see the Python profilers documentation for an explanation of the data which the profiler gathers.

Once you have some profiling data, you can visit the configured `path` in your browser to see a user interface displaying profiling statistics (e.g. `http://localhost:8080/__profile__`).


File Edit View History Bookmarks Tools Help
http://localhost:8080/__profile__
Yahoo
repoze.profile results
Profiling information is generated using the standard Python profiler. To learn how to interpret the profiler statistics, see the Python profiler documentation.
Sort: time Limit: 100 Full Dirs: Mode: stats Update Clear
Thu Nov 25 10:13:16 2010 myapp.profile
18019 function calls in 0.130 CPU seconds
Ordered by: internal time
ncalls tottime percall cumtime percall filename:lineno(function)
594 0.015 0.000 0.042 0.000 httpheaders.py:449(update)
693 0.009 0.000 0.024 0.000 httpheaders.py:415(__call__)
1089 0.009 0.000 0.015 0.000 httpheaders.py:368(values)
297 0.007 0.000 0.007 0.000 {posix.stat}
99 0.007 0.000 0.007 0.000 {method 'read' of 'file' objects}
99 0.006 0.000 0.006 0.000 {method 'close' of 'file' objects}
3267 0.006 0.000 0.006 0.000 {len}
99 0.005 0.000 0.005 0.000 {open}
1980 0.004 0.000 0.004 0.000 {method 'lower' of 'str' objects}
99 0.004 0.000 0.041 0.000 fileapp.py:109(get)
99 0.004 0.000 0.130 0.001 urlparser.py:438(__call__)
396 0.003 0.000 0.008 0.000 httpheaders.py:506(__call__)
99 0.003 0.000 0.020 0.000 fileapp.py:59(__init__)
99 0.003 0.000 0.034 0.000 fileapp.py:188(update)
99 0.003 0.000 0.080 0.001 fileapp.py:204(get)
990 0.002 0.000 0.002 0.000 {isinstance}
99 0.002 0.000 0.004 0.000 posixpath.py:308(normpath)
891 0.002 0.000 0.002 0.000 {method 'get' of 'dict' objects}
891 0.002 0.000 0.002 0.000 {method 'append' of 'list' objects}
99 0.002 0.000 0.002 0.000 rfc822.py:952(formatdate)
891 0.002 0.000 0.002 0.000 {method 'strip' of 'str' objects}
99 0.001 0.000 0.011 0.000 fileapp.py:82(set_content)
99 0.001 0.000 0.001 0.000 fileapp.py:106(calculate_etag)
99 0.001 0.000 0.027 0.000 fileapp.py:176(__init__)

CHAPTER 5

Profiling individual functions

Sometimes it might be needed to profile a specific function, be it for analyzing a bottleneck found with the full profiling, or to compare different approaches to the same problem. This package provides a decorator for this case. To use it, simply decorate the desired function like this:

```
from repoze.profile.decorator import profile

@profile('Descriptive title', sort_columns=('time', 'cumtime'), lines=30)
def my_bottleneck():
    # some really time consuming code
```

The results of the profiling will be sent to standard out. The `title` will appear at the top of the results, for guidance. All other arguments are optional. `sort_columns` allows specifying the columns to sort the timing results. See the Python profilers documentation for available options. `lines` is the number of lines of results to print. Default is 20. Zero means no limit.

CHAPTER 6

Reporting Bugs / Development Versions

Visit https://github.com/repoze/repoze.profile/ to report bugs. Fork the repository to submit patches as pull requests.

CHAPTER 7

Indices and tables

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