Profiling

`Profile.@profile` — Macro

```
@profile
```

`@profile <expression>` runs your expression while taking periodic backtraces. These are appended to an internal buffer of backtraces.

The methods in `Profile` are not exported and need to be called e.g. as `Profile.print()`.

`Profile.clear` — Function

```
clear()
```

Clear any existing backtraces from the internal buffer.

`Profile.print` — Function

```
print([io::IO = stdout,] [data::Vector]; kwargs...)
```

Prints profiling results to `io` (by default, `stdout`). If you do not supply a `data` vector, the internal buffer of accumulated backtraces will be used.

The keyword arguments can be any combination of:

- `format` – Determines whether backtraces are printed with (default, `:tree`) or without (`:flat`) indentation indicating tree structure.
- `C` – If `true`, backtraces from C and Fortran code are shown (normally they are excluded).
- `combine` – If `true` (default), instruction pointers are merged that correspond to the same line of code.
- `maxdepth` – Limits the depth higher than `maxdepth` in the `:tree` format.

- `sortedby` – Controls the order in `:flat` format. `:filefuncline` (default) sorts by the source line, `:count` sorts in order of number of collected samples, and `:overhead` sorts by the number of samples incurred by each function by itself.
- `noisefloor` – Limits frames that exceed the heuristic noise floor of the sample (only applies to format `:tree`). A suggested value to try for this is 2.0 (the default is 0). This parameter hides samples for which `n <= noisefloor * √N`, where `n` is the number of samples on this line, and `N` is the number of samples for the callee.
- `mincount` – Limits the printout to only those lines with at least `mincount` occurrences.
- `recur` – Controls the recursion handling in `:tree` format. `:off` (default) prints the tree as normal. `:flat` instead compresses any recursion (by ip), showing the approximate effect of converting any self-recursion into an iterator. `:flatc` does the same but also includes collapsing of C frames (may do odd things around `jl_apply`).

```
print([io::IO = stdout,] data::Vector, lidict::LineInfoDict; kwargs...)
```

Prints profiling results to `io`. This variant is used to examine results exported by a previous call to `retrieve`. Supply the vector `data` of backtraces and a dictionary `lidict` of line information.

See `Profile.print([io], data)` for an explanation of the valid keyword arguments.

`Profile.init` — Function

```
init(; n::Integer, delay::Real))
```

Configure the `delay` between backtraces (measured in seconds), and the number `n` of instruction pointers that may be stored. Each instruction pointer corresponds to a single line of code; backtraces generally consist of a long list of instruction pointers. Default settings can be obtained by calling this function with no arguments, and each can be set independently using keywords or in the order `(n, delay)`.

`Profile.fetch` — Function

```
fetch() -> data
```

Returns a copy of the buffer of profile backtraces. Note that the values in `data` have meaning only

on this machine in the current session, because it depends on the exact memory addresses used in JIT-compiling. This function is primarily for internal use; `retrieve` may be a better choice for most users.

`Profile.retrieve` — Function

```
retrieve() -> data, lidict
```

"Exports" profiling results in a portable format, returning the set of all backtraces (`data`) and a dictionary that maps the (session-specific) instruction pointers in `data` to `LineInfo` values that store the file name, function name, and line number. This function allows you to save profiling results for future analysis.

`Profile.callers` — Function

```
callers(funcname, [data, lidict], [filename=<filename>], [linerange=<start:stop
```

Given a previous profiling run, determine who called a particular function. Supplying the filename (and optionally, range of line numbers over which the function is defined) allows you to disambiguate an overloaded method. The returned value is a vector containing a count of the number of calls and line information about the caller. One can optionally supply backtrace `data` obtained from `retrieve`; otherwise, the current internal profile buffer is used.

`Profile.clear_malloc_data` — Function

```
clear_malloc_data()
```

Clears any stored memory allocation data when running julia with `--track-allocation`. Execute the command(s) you want to test (to force JIT-compilation), then call `clear_malloc_data`. Then execute your command(s) again, quit Julia, and examine the resulting `*.mem` files.

« Printf The Julia REPL »

Powered by Documenter.jl and the Julia Programming Language.