

The **l3benchmark** package

Experimental benchmarking

The L^AT_EX3 Project*

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1 Additions to **l3sys**: elapsed time

<code>\sys_gzero_timer:</code>	<code>\sys_gzero_timer:</code>
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Resets the timer to zero.

<code>\sys_timer: ★</code>	<code>\sys_timer:</code>
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Expands to the current value of the engine's timer clock, a non-negative integer. In engines without clock support this expands to 0.

2 Benchmark

<code>\g_benchmark_duration_target_fp</code>
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This variable controls roughly for how long `\benchmark:n` will repeat code to more accurately benchmark it. The actual duration of one call to `\benchmark:n` typically lasts between half and twice `\g_benchmark_duration_target_fp` seconds, unless of course running the code only once already lasts longer than this.

<code>\g_benchmark_time_fp</code>
<code>\g_benchmark_ops_fp</code>

Functions such as `\benchmark:n` store the measured time in `\g_benchmark_time_fp` (in seconds). Functions such as `\benchmark_normalized:n` store the estimated number of operations in `\g_benchmark_ops_fp`.

<code>\benchmark_display:</code>
<code>\benchmark_display_in_ops:</code>

`\benchmark_display:`

Prints the time `\g_benchmark_time_fp` (in seconds) or the estimated number of operations `\g_benchmark_ops_fp` to the terminal. These functions are called by functions such as `\benchmark:n` and can be redefined by the user.

*E-mail: latex-team@latex-project.org

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<code>\benchmark_once:n</code>	<code>\benchmark_once:n {<code>}</code>
<code>\benchmark_once_in_ops:n</code>	Measures the time taken by T _E X to run the <i><code></i> once, sets <code>\g_benchmark_time_fp</code> and <code>\g_benchmark_ops_fp</code> , and calls <code>\benchmark_display:.</code> The <i><code></i> is run only once so the time may be quite inaccurate for fast code. The <code>\benchmark_once_silent:n</code> function omits the call to <code>\benchmark_display:</code> , while <code>\benchmark_once_in_ops:n</code> calls <code>\benchmark_display_in_ops:</code> instead.
<code>\benchmark_once_silent:n</code>	
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<code>\benchmark:n</code>	<code>\benchmark:n {<code>}</code>
<code>\benchmark_in_ops:n</code>	Measures the time taken by T _E X to run the <i><code></i> , sets <code>\g_benchmark_time_fp</code> and <code>\g_benchmark_ops_fp</code> , and calls <code>\benchmark_display:.</code> The <i><code></i> may be run many times and not within a group, thus code with side-effects may cause problems. The <code>\benchmark_silent:n</code> function omits the call to <code>\benchmark_display:</code> , while <code>\benchmark_in_ops:n</code> calls <code>\benchmark_display_in_ops:</code> instead.
<code>\benchmark_silent:n</code>	
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<code>\benchmark_tic:</code>	<code>\benchmark_tic: {<slow code>}</code>
<code>\benchmark_toc:</code>	When it is not possible to run <code>\benchmark:n</code> (e.g., the code is part of the execution of a package which cannot be looped) the tic/toc commands can be used instead to time between two points in the code. When executed, <code>\benchmark_tic:</code> will print a line to the terminal, and <code>\benchmark_toc:</code> will print a matching line with a time to indicate the duration between them in seconds. Note that these commands can be nested.

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