

Little Benchmark: HDD L^AT_EX2

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2 Requirements

Operating system: Linux, Windows XP or newer
Library: libboost 1.40 , libcrypto++ 5.6.0-5

3 Features

Portability (not tested yet)

Multi threading for controllers and NCQ tests

Test read by 1 character and stream

Test read by chunk useful for server disk drivers speciality if test in multi threading (no implemented yet)

Read files are being validated with sha512 hash sum after read test in order to check if we read what we supposed to read

Nanoseconds precision

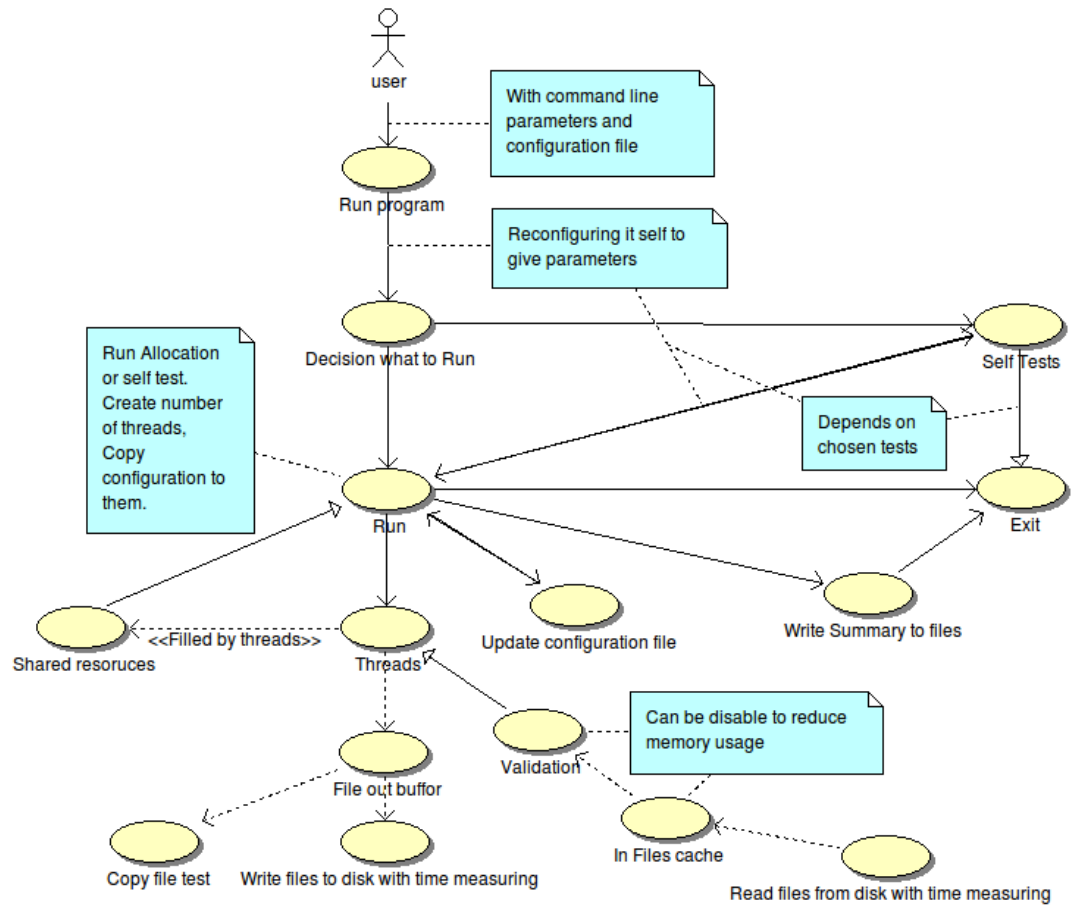
Human readable output (style of log, formatted text, or xml(N/A) file)

Easy and fully customizable by command line or configuration file

Tests designed for hybrid drives(currently not enabled)

Free of charge but don't forget to appreciate my job by [donation](#)

4 How does it work



Simplified use case diagram

5 Installation

5.1 Package

Binaries and source can be downloaded from:

Git Not uploaded yet

SVN Not uploaded yet

5.2 Linux

5.2.1 From Repository(not uploaded yet)

Open terminal and copy content:

```
sudo add-apt-repository ppa:buskol-waw-pl/littlebenchmark-hdd
sudo apt-get update
sudo apt-get install littlebenchmark-hdd
```

5.2.2 From source

Open terminal:

```
$ cd .../LittleBenchmark/HDD
$ ./configure
$ make && make test && make install && make clean
```

5.3 Windows

Windows port will be done latter.

5.3.1 From source

What is needed to compile from source: (Working on it...)

MiniGw gcc Compiler to make things possible.

CodeBlocks IDE.

Boost library This Library takes care about porting issues between Linux and Windows.

Crypto++ Cryptographic library for file validation.

Notpad++ For file editing with out blowing encoding.

Set up Compiler:

Check download C++ , C - objective, msys* stuff

After installation successful end.

Press button with windows logo + break/pause got to environment variable

Edit Path, add

```
" ;C:\MiniGw\bin;C:\MinGW\msys\1.0\bin"
```

Set up boost:
open command line
ctrl + r type cmd

```
cd boost_dir/  
bootstrap.bat
```

Insert to project.config.jam "using gcc ;"

```
bjam --tool-set=gcc --build-dir=boost-build --build-type=complete stage release --without-  
bjam --build-dir=boost-build --toolset=gcc install --without-python
```

Compile Project with Codeblocks: Settings-¿Global Variables-¿New
Name it boost

```
base bath C:\boost  
include bath C:\Boost\include\boost-1_41  
lib bath C:\boost
```

6 Configuration

Configuration file is in "user home directory"/.littlebenchmark/hdd

Please Run binary with -M option to set max string and char size in order to avoid memory allocation error.

To get information what options can be specified run program with -h option.

7 Known issues

Before appalling any solution in Linux run terminal session `ctrl+alt+F1` and login with root privilege, in order to avoid any sort of problems! After applying solution check if you can login in other terminal session and unlock lock screen.

Before applying any solution on WinCrap pray and backup important data.

Memory leak 32 records lost when running with -M
Solution unknown: Lost is in static allocated memory.

Strange Log Output Example:

```
Min:1e+09s
Max:[Failed to measure: time difference to small]
Avg:-nans
```

Memory allocation failed or your hard drive for given data is immeasurable fast :-)

Linux Memory leak caused by bug in *pwd.h* library

```
#include <pwd.h> /*12 records lost*/
struct passwd *pw;
```

Solution: line 7-9 word "*compat*" have to be replaced with "*files*"

```
lukasz@lukasz-compal:~$ cat -n /etc/nsswitch.conf
1 # /etc/nsswitch.conf
2 #
3 # Example configuration of GNU Name Service Switch functionality.
4 # If you have the 'glibc-doc-reference' and 'info' packages installed, try:
5 # 'info libc "Name Service Switch"' for information about this file.
6
7 passwd:          compat
8 group:           compat
9 shadow:          compat
10
11 hosts:          files mdns4_minimal [NOTFOUND=return] dns mdns4
12 networks:       files
13
14 protocols:      db files
15 services:       db files
16 ethers:         db files
17 rpc:            db files
18
19 netgroup:       nis
```

12 records in worst case scenario can take max 8192 bytes, libc-freeres won't do the job so please apply solution