

## What is CliBench?

CliBench is a Win32 application designed for measuring your system's performance. You can test raw CPU power, the computers memory interface and the harddisks transfer speed. It supports Windows NT 4.0 as well as Windows 95.

## How do I test?

You should shut down all running applications before testing. Then start CliBench by clicking on the programs icon. Under the test menu you will find the following options:

- |                       |  |
|-----------------------|--|
| Dhrystones:           | This is the version 2.1 of the well known Dhrystone benchmark. You cannot compare these results directly with results you get using other compilers. I tried compiling it without optimizations and I got 155 Mips. Fully optimized I reached even 420 Mips, which is faster than a Alpha Station! Dhrystone gives you an impression of your computer's cpu power for standard applications. |
| Whetstones:           | The famous Whetstone benchmark. It is kind of an industry standard especially on Unix systems. It measures the especially the cpu's floating point unit, which usually is used for scientific applications and graphic intensive games.  |
| Eight Queens Problem: | A famous algorithm. It's goal is to find all solutions on how to place eight queens on a checker board without checking themselves. It shows you how good your system can handle function calls. This is a recursive version after Niklaus Wirth.  |
| Number Crunching:     | By doing some calculations with different data types and conversions between them this test shows you how fast your system handles simple operations.  |
| Floating point unit:  | This test does a lot of FPU intensive operations. It shows nicely the difference between a Cyrix/IBM 6x86 and an Intel Pentium Processor.  |
| Memory throughput:    | This test checks your memory subsystems speed. The value it shows is the average throughput for arrays from 2 kBytes to 4 Mbytes size. You should run this test several times to ensure that there is enough free memory available. The first two or three times you're running it most systems are swapping which reduces drastically the performance.                                      |
| Disk throughput:      | Tests the transfer speed for write and read accesses on disk devices. You should have at least 5 Mbytes free space on the drive your testing. It shows you also the CPU usage during the   |

read/write accesses. This depends on how smart your disk Interface is (SCSI or not), if it supports busmastering and of course on the transfer speed itself.

Run checked tests: Well, first you have to choose which tests you'd like to do. Then select this option and the tests start running.

## What do the results tell me?

The first thing I have to say is the following: Don't get depressed if you do not have the fastest machine on earth, I don't have it neither. But the results can show you some fine details, for example the influence of the memory access cycles (x2222, x3333, ...) you can modify in your computers bios. It also shows you the advantages of disk controllers supporting busmastering. You don't really need SCSI for this but the Intel PIIXIDE chipset found on all Triton pentium boards supports this, too (Only if you have a busmaster driver installed!).

Here are some tips how to interpret the results:

- Dhystone: This test should run fully in level 1 cache. The higher the clock rate of your CPU and the more sophisticated its architecture the better the results.
- Whetstone: The higher the better. Usually this test runs fully in level 2 cache. If you're system has very low results you probably do not have level 2 cache or it is switched to write through or you have a very slow CPU for floating point intensive applications.
- Eight Queens Problem: Depends also on the level 2 cache and the CPU. The more sophisticated the CPU is the better are the results (Prediction branches, and so on).
- Number Crunching: If your CPU has a high clock rate and it can execute simple calculations in one or two clocks you'll get good results.
- Floating point unit: This depends almost on your CPU. Intel processors are faster than Cyrix/IBM or AMD, but PowerPC or Alpha systems are even much faster.
- Memory throughput: Depends on the size of level 1 cache on the CPU, the size and type level two cache (asynchronous SRAM, pipeline burst SRAM) and the type of DRAM installed (SDRAM, EDO, Page Mode Ram,...) and how fast your motherboard can access it (read/write cycles, latency,...).
- Disk throughput: Depends on the type of harddisk, its interface, the computers mass storage interface, the drivers your operating system uses, the file system on the disk, the size of the partition, and so on. If the maximum and the minimum values differ extremely, your harddisk is probably quite full or fragmented. If you get high CPU usage values your CPU has to do all I/O and there's no busmastering (What a shame a some \$100 chip and all it has to do is writing bytes on a disk!).

## About the licence

This program is shareware. You may evaluate it some days and you may spread the program as much as you like. But if it is useful to you please support shareware authors and send me a 10 dollar bill. Just put the money in an envelope with some words of enthusiasm and send it to my place. You may also write or e-mail me your results and proposals, which I would enjoy very much.

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