

# Welcome to Cache Test for Windows

**Version:** 1.0  
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## **Purpose:**

To benchmark the impacts of configuration changes to drive access performance under the Windows operating system.

## **Development:**

This application was developed using the 16-bit VisualBASIC 4.0 system with the Crescent QuickPak Pro DLL for added functionality. The package was developed under NT v3.51. Please note that the disk size and free space information do not provide correct information when used with the 32-bit NTFS file system.

## **Installation:**

This large install package installs the requisite files for CTW as developed under VB 4.0. As such, the distribution set that is created is unfortunately quite large. Depending on how you obtained this package, you will need to either run the setup.exe program from a directory where you decompressed an archive file, like a ZIP file, or you will need to run setup.exe from a diskette or CD.

Tell the setup program where to install the application. For example, c:\ctw. Next, click on the computer icon button to start the install. I recommend that you have all unnecessary applications closed prior to running the setup program. The ctl3dv2.dll that setup installs seems to be a popular DLL and I have had good luck with telling the setup program to ignore the fact that ctl3dv2 is in use and skip the file. You can try this approach, but you may not be able to run the program afterwards.

The setup program will create a program group called "CTW" and an icon for the application. At this point you can run the program.

Until you register the application, there will be a series of forms prompting you to register the application. Please note that your application is one-time for CTW and that you will be given a user ID and serial number that is then entered in the registration section of CTW to disable the forms.

## **The Process:**

There are really very few things to key in. You need to identify the drive you want to test. This is through the pull down list of available drives.

### **Record Size:**

The record size specifies the number of characters you want to be in each record. The program will take this value and create a string of duplicate characters that have a combined length of your specified length less two. This is because the sequential and random access routines both use two byte record terminators to define a record. The character that is duplicated (n-2) times to create the record is randomly selected during each record pass. For example, if you say the record size is 256, then the program will select a random ASCII value, let's say its an "a", and will create a string of 254 letter "a" characters and two record terminators. The next record may be the "@" character, the next "&", and so on. Each is randomly selected and the random generator is seeded a time related variable. All of the records created are fixed length.

### **Record Count:**

Compared to the previous section, this is an easy explanation, it is the total number of records that you want to transfer to, or from, a drive in each test.

### **Create Log File:**

Check this box if you want CTW to maintain a log file of all scores. The default file name is "CTW.LOG" and will be written in the current directory. The "View Log" command button will look for the specified log file in the current directory only. You can change the name, but if you want to use the "View Log" command button, you shouldn't specify a different directory.

### **Append:**

By default, when CTW creates a log file, it will overwrite an existing one. If you check the append box, it will append the current results to the end of the existing log file.

### **Disable Graphics:**

Taking the time to update screen graphics can slow the testing down immensely. If you want to view the drive performance without any screen writes, check this box. This can get very, very boring.

### **Passes:**

This is the number of times that you want to repeat all selected tests.

### **Pause:**

This will halt the program at the end of each pass to let you view the results.

### **Loop:**

This option is for people who want to stress test a drive or network connection. It will loop the tests over and over until the user clicks on "quit" to stop the process.

### **Test Options:**

There is a check box next to each test and you can disable/enable the tests that you want. If a test is dependent on another test creating the test file and you disable that test, the program will not let you run the dependent test. For example, how can you do a sequential read test if you haven't first created the test file using the sequential write test first? All tests listed after the first write test in the two sections require that the first write test be performed to create the needed data file.

### **Command Buttons:**

#### **“Go”**

Select this to start testing.

#### **“Quit”**

Select this to stop testing after the current test is completed. It will not interrupt a test in process.

#### **“View Log”**

Assuming that you created a log file using the “Create Log File” option, this command button will invoke the Windows Notepad program to let you view it.

#### **“Registration”**

This button invokes the user registration screen where the user enters their assigned user name and serial number. Yes, the system does use schema to determine if they are valid. Please register CTW in order to get your user name and password.

#### **“About”**

Brings up information about CTW.

#### **“Exit”**

Gee, could this be where we leave the program?

### **What do the tests do???**

#### **Sequential Write:**

This test writes the specified number of records to the specified drive in the form of DOS text files. Each record is terminated with a carriage return (0x0D) and line feed (0x0A). Each record is written after the previous one.

#### **Sequential Read:**

This test reads each record one after another until all have been read.

### **Random Write 1-by-1:**

This test writes the specified number of records to the specified drive set up in a manner to facilitate random access. However, this test writes all of the records in sequential manner. It should score very close, if not identical, to the sequential write.

### **Random Read 1-by-1:**

This test reads each record one after another until all have been read. This test should score very close, if not identical, to the sequential read.

### **Read Step 10:**

This test skips 10 records and reads the next one. Thus, it reads records: 1, 11, 21, 31, etc.

### **Random Read:**

This test randomly selects which record to read. It does this for the number of times that you have specified in the record count. There is no guarantee that all records will be read or that some records may be read multiple times.

### **Random Write:**

This test randomly selects which record to write/update with a newly generated random character string. It does this for the number of times that you have specified in the record count. There is no guarantee that all records will be read or that some records may be read multiple times.

### **Random R&W:**

This test first randomly decides if it will read or write during the current pass. It then randomly selects the record location and either performs a write/update with new random data or it reads the record. It does this for the number of times that you have specified in the record count. As with the random read and random write individual tests, there are no assurances that all records will be tested or that some records may be acted on multiple times.

### **Crescendo R&W:**

This test performs four operations during each cycle and they are:

1. Get the next preceding record starting at the end of the file and moving to the beginning.
2. Get the following record start at the beginning of the file and moving to the end.
3. Perform a write at the location tested in #1.
4. Perform a write at the location tested in #2.

For example:

Count	Cycle	Task
1.	1.	Read the first record
1.	2.	Read the last record
1.	3.	Write a random string over the first record
1.	4.	Write a random string over the last record
2.	5.	Read record number two
2.	6.	Read the next-to-the-last record.
2.	7.	Write a random string over the second record
2.	8.	Write a random string over the next-to-the-last record.

- 3.                    9.                    Read the third record
  - 
  - 
  -
- <this continues up to the specified record count.

This test is designed to force caches/buffers to update frequently.

### **End Notes:**

One trend I am reading about and makes sense is to stuff as much RAM as you can in your servers, etc. What people are looking at isn't the old "Gee Bob, how much should I have for my applications" approach, but one of "how much RAM do I need for my applications and to load as much of my primary database tables into cache buffers as is possible?" It's a fundamental shift, but one that does make sense. If your servers are taking hits out of RAM instead of the mechanical drives, performance will go way up.

### **Known Bugs:**

- The version of Crescent's QuickPak Pro library I have can not accurately get information from a drive formatted using NTFS. This problem is limited only to the drive size, cluster size and free space information. It will not affect test scores.

### **Versions:**

1.0      11/21/95

Initial public release.

1.0 - 5.0A DOS

Yes, this is the Windows version of the DOS Cache Test utility. We will not be developing the DOS app any further beyond v5.0a.

### **Attention Cache Test for DOS Users:**

This product is a fundamentally different application than its DOS predecessor and we are considering it a new application. The Windows version is a ground up rewrite with a lot of development. If you are registered for the DOS application currently, then you are registered only for the DOS application and not the Windows application. You will need to register your Windows application independently.

### **Register:**

Please register this shareware application. Upon registering this utility for \$20 per copy, we can send you an e-mail and/or USPS mail with your registered name and serial number. Please send payment, cash or postal order please, in US dollars to:

George Spafford  
1301 Harrison Avenue  
Saint Joseph, MI 49085  
USA

e-mail: **il@execpc.com**

(That's lower-case "IL" as in "InterLink".)

If you want me to e-mail your user name and password to you, please be sure to legibly give me your address when you send payment.

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The QPRO200.DLL is the property of Crescent Software for use in their QuickPak Pro for Windows programming tool box for Visual BASIC.

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