

Detritus

Detritus

<http://detritus.lccdigital.com>

<http://www.sourceforge.net/projects/detritus>

File Management on Windows

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Introduction

Windows XP gets very, very slow when it's disk is more than about half full or badly organized.

Disk Cleanup only does a few types of files and ignores many files that are temporary, in caches, or otherwise deletable.

Defrag does a simple minded and partial process compared to disk optimizations as described in the Journal of the ACM in 1975.

Disk Cleanup and Defrag are so poorly designed and implemented that they can thought of better as end user placebos, not effective as programs for disk management.

Detritus.exe describes some of the wasted space on your drives. Eliminate some of them and then re-do defrag and your system will be more sprightly.

BigFiles.bat, DelCache.bat are functioning examples of using modules from River Computing™ or The River™ for further describing and eliminating waste space.

Quick Start

1. Unzip to a directory on the PATH, or to a new directory and add it to the path.

Or, you may simply go to the install directory to run things. You may need an administrator account.

2. Run Detritus to see information about waste space on your Windows system.\
3. Cleaning caches:
 1. Run delcache to examine the various cache files.
 2. It would not hurt to backup your system. CDriveBack works.
 3. Open a text file named “skipdirs” and in it write down a token for the cache directories you don't want emptied.
 4. Run
delcache doit
to empty all caches that do not have a token listed in file skipdirs.
 5. Run bigfiles.bat to see the biggest files.
 1. Delete the ones you do not want.
 2. Move others to CD or USB drive and delete them.
 6. Defrag your system.
 7. Your system will be faster, the disk will not fail as soon.

Detritus

Detritus roams through your drive listing space that is probably wasted. A report from a very clean drive is below.

Generally detritus identifies more than half a gig of things on an XP system that can be safely removed, and often far more than a Gig.

Syntax:

```
detritus [ d:\ ]
```

where [d:\](#) is an optional drive to look at. By default, detritus does the system drive.

Sample Detritus Report

This is from a very clean XP system.

02/15/07	Files in Cache Directories
Cache directories store just-used files in case you need them again.	
Sometimes cache directories are not cleaned of old stuff.	
Older files and ones you don't need are not very useful.	
<hr/>	
53,248	I:\Documents and Settings\Grendel\Application Data\Microsoft\CryptnetUrlCache\Content\
12,288	I:\Documents and Settings\Grendel\Application Data\Microsoft\CryptnetUrlCache\MetaData\
790,528	I:\Documents and Settings\Grendel\Application Data\OpenOffice.org2\user\config\imagecache\
708,608	I:\Documents and Settings\Grendel\Application Data\OpenOffice.org2\user\registry\cache\
4,096	I:\Documents and Settings\Grendel\Local Settings\Application Data\Microsoft\Feeds Cache\FVCJQOSO\
4,096	I:\Documents and Settings\Grendel\Local Settings\Application Data\Microsoft\Feeds Cache\KVRE100Y\
4,096	I:\Documents and Settings\Grendel\Local Settings\Application Data\Microsoft\Feeds Cache\M3P0EW09\
4,096	I:\Documents and Settings\Grendel\Local Settings\Application Data\Microsoft\Feeds Cache\W771PUCP\
626,688	I:\Documents and Settings\Grendel\Local Settings\Application Data\Mozilla\Firefox\Profiles\g9jeqlbu.default\Cache\
1,114,112	I:\Program Files\Common Files\Microsoft Shared\SFPCA Cache\
81.78 M	I:\WINDOWS\Driver Cache\i386\
12,288	I:\WINDOWS\pchealth\helpctr\Config\Cache\
2,183,168	I:\WINDOWS\pchealth\helpctr\OfflineCache\Personal_32#0409\
52.82 M	I:\WINDOWS\system32\dlldatacache\
<hr/>	
140.12 M Total for cache	

02/15/07

Files in I386 Directories

..\Windows\Driver Cache\i386 has some drivers in it that allow you to install hardware without prompting for the CD. How often do you install new hardware?

How hard is it to put in a CD? How long does it take our A-V to scan 81 Meg?

Leaving 82 Meg around for infrequent use is an odd design decision.

Anyway, it is not a cache, it is just a bin of drivers.

4,096 I:\Program Files\Java\jre1.5.0_07\lib\i386\

81.78 M I:\WINDOWS\Driver Cache\i386\

36,864 I:\WINDOWS\system32\ReinstallBackups\0025\DriverFiles\i386\

81.83 M Total for i386

02/15/07

Files in Inetlog Directories

InetLogs are logs of your internet travels. Unless you go to only one or two sites. Most of these are useless except for checking on your use of illicit sites. We do that on the server anyway.

8,638,464 I:\WINDOWS\Internet Logs\

8,638,464 Total for inetlog

02/15/07

Files in Logs Directories

Logs are of all sorts of things. The ones about errors are useful.

With a little luck they will show you hardware or software problems.

If you are not having problems are log files more than a meg needed?

More than 50K?

8,192 I:\Documents and Settings\All Users\WINDOWS\clamwin\log\

8,192 Total for logs

02/15/07 Files in Prefetch Directories

Unknown type prefetch

2,891,776 I:\WINDOWS\Prefetch\

2,891,776 Total for prefetch

02/15/07 Files in Sysrest Directories

Unknown type sysrest

20,480 I:\System Volume Information\

20,480 Total for sysrest

02/15/07

Files in Temp Directories

Temp files ought to have been deleted when the creating program was done with their temporary use. If MS were not immune to embarrassment, they would blush as even one of these files shows sloppy work.

3,584,000 I:\Documents and Settings\Grendel\Local Settings\Temp\

4,096 I:\Documents and Settings\Grendel\Local Settings\Temporary Internet Files\

53,248 ..\Content.IE5\

258,048 ..\Content.IE5\0T2BSTY3\

135,168 ..\Content.IE5\8XIB012Z\

516,096 ..\Content.IE5\G5YNG1AB\

176,128 ..\Content.IE5\OHUNCXU7\

4,096 I:\Documents and Settings\LocalService.NT AUTHORITY.000\Local Settings\Temporary Internet Files\

36,864 ..\Content.IE5\

4,096 ..\Content.IE5\6YW01EIM\

4,096 ..\Content.IE5\7ZU7BLAH\

4,096 ..\Content.IE5\BRGWXD2F\

4,096 ..\Content.IE5\L75X7Z3G\

159,744 I:\WINDOWS\temp\

4,943,872 Total for temp

02/15/07

Files with the ext (suffix) of bak

BAK files, are backup and restore files for any application. If the application or program has finished you may consider removing these if you do not want the backup.

20,480 I:\Documents and Settings\Grendel\Application
Data\Mozilla\Firefox\Profiles\g9jeqlbu.default\bookmarks.bak

12,288 I:\WINDOWS\pchealth\helpctr\Config\Cache\Personal_32_1033.dat.bak

110,592 I:\WINDOWS\system32\NtmsData\NTMSDATA.BAK

110,592 I:\Documents and Settings\Grendel\Application
Data\Mozilla\Firefox\Profiles\g9jeqlbu.default\

253,952 Total for files named*.bak

02/15/07

Files with the ext (suffix) of dmp

Dmp files are supposed to go into the Windows directory, and even there it is usually a waste of time to save them, unless, of course, you are pursuing an issue with a publisher.

8,192 I:\Documents and Settings\All Users\WINDOWS\Application Data\Microsoft\Dr Watson\user.dmp

8,192 I:\Documents and Settings\All Users\Application Data\Microsoft\Dr Watson\user.dmp

8,192 I:\Documents and Settings\All Users\WINDOWS\Application Data\Microsoft\Dr Watson\

24,576 Total for files named *.dmp

02/15/07 Files with the ext (suffix) of log

Log files can show up anywhere, no only in log directories. These log can likely be trimmed with no harm, or deleted, particularly after a reboot.

4,096 I:\Documents and Settings\Administrator\NTUSER.DAT.LOG
241,664 I:\Documents and Settings\Grendel\ntuser.dat.LOG
8,192 I:\Documents and Settings\Grendel\Local Settings\Application Data\Microsoft\Windows\UsrClass.dat.LOG
40,960 I:\Documents and Settings\LocalService.NT AUTHORITY.000\ntuser.dat.LOG
8,192 I:\Documents and Settings\LocalService.NT AUTHORITY.000\Local Settings\Application Data\Microsoft\Windows\UsrClass.dat.LOG
32,768 I:\Documents and Settings\NetworkService.NT AUTHORITY.000\ntuser.dat.LOG
8,192 I:\Documents and Settings\NetworkService.NT AUTHORITY.000\Local Settings\Application Data\Microsoft\Windows\UsrClass.dat.LOG
4,096 I:\Program Files\Common Files\VMware\VMware Virtual Image Editing\vmware-vmount-1.log
4,096 I:\Program Files\Common Files\VMware\VMware Virtual Image Editing\vmware-vmount-2.log
4,096 I:\Program Files\Common Files\VMware\VMware Virtual Image Editing\vmware-vmount.log
20,480 I:\System Volume Information\tracking.log
24,576 I:\vm\vmware-0.log
24,576 I:\vm\vmware-1.log
24,576 I:\vm\vmware-2.log
20,480 I:\vm\vmware.log
0 I:\WINDOWS\0.log
4,096 I:\WINDOWS\comsetup.log
8,192 I:\WINDOWS\FaxSetup.log
4,096 I:\WINDOWS\iis6.log
4,096 I:\WINDOWS\imsins.log
4,096 I:\WINDOWS\msgsocm.log
4,096 I:\WINDOWS\ntdtcsetup.log
8,192 I:\WINDOWS\ocgen.log
4,096 I:\WINDOWS\ocmsn.log
0 I:\WINDOWS\setupact.log
4,096 I:\WINDOWS\setupapi.log
0 I:\WINDOWS\setuperr.log

0 I:\WINDOWS\Sti_Trace.log
4,096 I:\WINDOWS\tsoc.log
4,096 I:\WINDOWS\wiadebug.log
4,096 I:\WINDOWS\wiaservc.log
8,192 I:\WINDOWS\WindowsUpdate.log
0 I:\WINDOWS\Debug\PASSWD.LOG
2,662,400 I:\WINDOWS\Internet Logs\tvDebug.log
131,072 I:\WINDOWS\system32\CatRoot2\edb.log
131,072 I:\WINDOWS\system32\CatRoot2\res1.log
131,072 I:\WINDOWS\system32\CatRoot2\res2.log
36,864 I:\WINDOWS\system32\config\DEFAULT.LOG
4,096 I:\WINDOWS\system32\config\SAM.LOG
4,096 I:\WINDOWS\system32\config\SECURITY.LOG
4,096 I:\WINDOWS\system32\config\SOFTWARE.LOG
1,732,608 I:\WINDOWS\system32\config\SYSTEM.LOG
65,536 I:\WINDOWS\system32\wbem\Logs\wbemess.log
8,192 I:\WINDOWS\system32\wbem\Logs\wbemprox.log
4,096 I:\WINDOWS\system32\wbem\Logs\wmiprox.log
4,096 I:\WINDOWS\temp\vmware-vmount-1.log
4,096 I:\WINDOWS\temp\vmware-vmount-2.log
4,096 I:\WINDOWS\temp\vmware-vmount-3.log
4,096 I:\WINDOWS\temp\vmware-vmount-4.log
4,096 I:\WINDOWS\temp\vmware-vmount-5.log
4,096 I:\WINDOWS\temp\vmware-vmount-6.log
4,096 I:\WINDOWS\temp\vmware-vmount-7.log
4,096 I:\WINDOWS\temp\vmware-vmount-8.log
4,096 I:\WINDOWS\temp\vmware-vmount.log
4,096 I:\Documents and Settings\Administrator\

5,492,736 Total for files named*.log

02/15/07

Files with the ext (suffix) of tmp

Temp directories store files used temporarily by a program.

Once the program has stopped or crashed, they are no longer needed.

0 I:\Documents and Settings\Grendel\Local Settings\Temp\sv207.tmp

0 I:\WINDOWS\msdownld.tmp

4,096 I:\WINDOWS\temp\ZLT02264.TMP

4,096 I:\WINDOWS\temp\ZLT02267.TMP

4,096 I:\Documents and Settings\Grendel\Local Settings\Temp\

12,288 Total for files named *.tmp

02/15/07

Files named ntuser.dat

NTUser.dat is a piece of the registry that has been placed in the user's area. The only known purpose for putting pieces of the registry would be to avoid programming bugs with different users updating a single registry.

There are many disadvantages with keeping a piece here and a piece there.

All the world's other multi user databases manage simultaneous update.

I guess the MS designers got confused. It was too hard.

524,288 I:\Documents and Settings\Administrator\NTUSER.DAT
225,280 I:\Documents and Settings\Default User\NTUSER.DAT
262,144 I:\Documents and Settings\Default User.WINDOWS\NTUSER.DAT
2,359,296 I:\Documents and Settings\Grende\NTUSER.DAT
262,144 I:\Documents and Settings\LocalService\NTUSER.DAT
229,376 I:\Documents and Settings\LocalService.NT AUTHORITY\NTUSER.DAT
229,376 I:\Documents and Settings\LocalService.NT AUTHORITY.000\NTUSER.DAT
262,144 I:\Documents and Settings\NetworkService\NTUSER.DAT
229,376 I:\Documents and Settings\NetworkService.NT AUTHORITY\NTUSER.DAT
229,376 I:\Documents and Settings\NetworkService.NT AUTHORITY.000\NTUSER.DAT
262,144 I:\WINDOWS\repair\ntuser.dat

5,074,944 Total for files named *ntuser.dat

-- Final Total --

249.31 M total cluster space used by files that are mostly

Detritus

Note that sizes listed are cluster space used, not file space, to better show how much real disk space is used.

Script or Batch Files

There are batch files included, *bigfiles.bat*, *delcache.bat* and *trimlogs.bat*

Bigfiles.bat – List the Large Files.

Syntax:

```
bigfiles [d:] [masklist [num ] ] ]
```

Defaults: bigfiles does the current working directory's drive as a default.

Options/Parameters:

d: Look on drive *d* where *d* may be any legitimate drive, or “*” for “d:” does all drives.

Masklist A list of up to twenty masks for files to consider. The list must be commaseparated with no internal blanks unless the entire list is quoted,

e.g.

```
*.odt,*.doc  
*.c,*.cpp,*.h,*.bas,*.for,*.mak
```

num An optional max number of file to list, the default is 50.

Sample Bigfiles Output

Not available	i:\WINDOWS\temp\scs7.tmp
63,044,788	i:\WINDOWS\Driver Cache\i386\driver.cab
33,795,700	i:\Program Files\Java\jre1.5.0_07\lib\rt.jar
28,340,224	i:\WINDOWS\Help\win32.FTS
20,033,075	i:\lcc\bin\win32.hlp
18,738,937	i:\WINDOWS\Driver Cache\i386\sp2.cab
18,597,793	i:\Program Files\OpenOffice.org 2.0\share\dict\ooo\th_en_US_v2.dat
14,459,392	i:\Documents and Settings\Grendel\Local Settings\Application Data\{3248F0A6-6813-11D6-A77B-00B0D0150070}\J2SE Runtime Environment 5.0 Update 7.msi
14,028,800	i:\Program Files\DevStudio\VB\vbonline\VBONLINE.M14
13,107,200	i:\WINDOWS\system32\oembios.bin
13,107,200	i:\WINDOWS\system32\dllcache\oembios.bin
12,591,104	i:\WINDOWS\pchealth\helpctr\Database\HCdata.edb
12,189,696	i:\Program Files\Java\jre1.5.0_07\bin\client\classes.jsa
11,272,192	i:\WINDOWS\system32\config\software
10,485,760	i:\WINDOWS\system32\config\software.sav
10,387,456	i:\WINDOWS\repair\software

10,026,590	i:\Program Files\Ulead Systems\Ulead PhotoImpact 4.2\PRODUCTS.HLP
9,028,431	i:\Program Files\Common Files\Java\Update\Base Images\jre1.5.0.b64\core2.zip
8,403,968	i:\WINDOWS\Installer\207eb.msi
8,384,000	i:\WINDOWS\system32\shell32.dll
7,679,963	i:\WINDOWS\Help\Tours\mmTour\segment5.swf
7,677,952	i:\Documents and Settings\Grendel\Application Data\Mozilla\Firefox\Profiles\g9jeqlbu.default\urlclassifier2.sqlite
7,649,534	i:\Program Files\Common Files\Java\Update\Base Images\jre1.5.0.b64\core1.zip
7,604,331	i:\Program Files\Mozilla Firefox\firefox.exe
7,110,807	i:\Program Files\ClamWin\lib\clamwin.zip
6,979,584	i:\Program Files\OpenOffice.org 2.0\program\gengal.rdb
6,935,528	i:\Documents and Settings\Grendel\Local Settings\Application Data\IconCache.db
6,127,616	i:\Program Files\OpenOffice.org 2.0\program\types.rdb
6,049,280	i:\WINDOWS\system32\ieframe.dll
6,019,888	i:\Program Files\VMware\VMware Player\bin-debug\vmware-vmx.exe
5,931,008	i:\Program Files\OpenOffice.org 2.0\program\sw680mi.dll
5,861,376	i:\Program Files\OpenOffice.org 2.0\program\svx680mi.dll
5,457,797	i:\Program Files\OpenOffice.org 2.0\share\config\images_crystal.zip
5,451,776	i:\WINDOWS\system32\V2iDiskLib.dll
5,332,992	i:\WINDOWS\system32\wbem\Repository\FS\OBJECTS.DATA
5,017,600	i:\Program Files\OpenOffice.org 2.0\program\sc680mi.dll
5,016,433	i:\Program Files\OpenOffice.org 2.0\share\config\images_industrial.zip
4,967,216	i:\Program Files\VMware\VMware Player\bin\vmware-vmx.exe
4,898,304	i:\Program Files\Common Files\Wise Installation Wizard\WIS6B619ED4492F4AD2BCA7563AFC938B0F_1_1_5_0113.MSI
4,874,240	i:\WINDOWS\system32\wmp.dll
4,714,496	i:\Program Files\AMD\CPUInfo\qt-mt333.dll
4,560,552	i:\Program Files\Common Files\Java\Update\Base Images\jre1.5.0.b64\patch-jre1.5.0_07.b03\patchjre.exe
4,449,889	i:\Program Files\OpenOffice.org 2.0\share\config\images.zip
4,423,680	i:\Program Files\OpenOffice.org 2.0\program\services.rdb
4,399,505	i:\WINDOWS\srchasst\iis302en.lex
4,393,096	i:\Program Files\Spybot - Search & Destroy\SpybotSD.exe
4,349,727	i:\Program Files\Common Files\mozilla.org\GRE\1.7.13_2006041421\Setup GRE\gre.xpi
4,256,768	i:\Program Files\Movie Maker\WMM2RES.dll
4,190,352	i:\WINDOWS\Resources\Themes\Luna\luna.msstyles
4,171,017	i:\Program Files\OpenOffice.org 2.0\share\config\images_hicontrast.zip

Bigfiles Notes

Once your disk is cleaned up Bigfiles is mostly used for checking to see that nothing weird arrived on your hard drive, like a movie that some hacker is distributing with your home bot.

There are not many very large files in the listing above. That is because our ISOs, multimedia, compilers and so forth are on other drives. Using different partitions for different things simplifies backups and restores, which is why our system drive is **I:**.

DelCache – Empty Cache Directories

Delcache empties cache directories. This can be quite useful particularly if you run delcache.bat at startup or shutdown.

Delcache syntax:

```
delcache [ doit ]
```

Option:

The “doit” option tells delcache to actually perform the deletes. Without the doit option, delcache.bat lists the cache directories.

Delcache Notes

Delcache searches all drives.

Delcache empties cache directories, it does not delete them.

Before you run delcache with the doit option you should examine the list of caches to be emptied. You also should have a backup, <http://www.sourceforge.net/projects/cdriveback> works nicely.

The reason is simple, some casual designers actually have cache directories with things other than cached files in them, for example Joomla has a directory with code for handling caches in a directory named, you guessed it, “cache”. Room for improvement.

How to Skip Cache Directories

Delcache will look for a file named “skipdirs” in the current working directory when it is run. If the file exists each line may have a token or fragment of the name of directories to skip, that is not to empty.

To skip the joomla directories we just need the token (or fragment) “joomla” and all caches with “joomla” in the path and file name will be skipped. If you wish to skip the dll cache directory, just enter “dllcache”. If you wish to skip all of the Windows system directory enter “windows” or “win32” depending on you OS. Skipping Windows is not advised, there is a lot useless cache info kept under the system directory.

File: Skipdirs

```
joomla  
dllcache
```

Suggested Startup Script Template

You may consider putting a startup script in your startup folder, or autoexec.bat, or as a login script.

We suggest the following. We do not warranty i at all. And you should verify that it's actions are appropriate for your setup. It is your responsibility.

Deleting Cache Directories

We can with relative safety delete all the cache files, except

1. dllcache on NT/XP systems
2. Application files with misnamed directories like Joomla's.
3. Other applications that have erred and named a needed directory “cache”

We could use the line:

```
dels "+listdirs * cache | delwithi any @skipdirs"
```

where skipdirs might be a file with the lines:

```
dllcache  
joomla
```

Look at your cache files to check out any others you do not desire to empty by doing:

```
listdirs * cache | more
```

Emptying Other Directories

Also with relative safety one can empty directories named tmp, temp and “temporary Internet Files”. This can be done with a new dels command or by modifying the old one to have a pattern list for the listdirs command (all one line):

```
dels "+listdirs * "cache,tmp,temp,Temporary Internet Files"|  
delwithi any @skipdirs"
```

remember the /e switch, for exact, if you wish more precise control of listdirs.

Trimlogs.bat trims overly large log files

Well designed log files are a circular file, one is a fixed size and new lines get added at the bottom and the old top ones are taken out.

Windows has no such facility, log files grow until you manually do something about them. Sloppy work, that. Something is needed to trim these files.

FileTail from the River

FileTail.exe takes a file and only keeps the last portion. If you say

```
filetail 20k tvDebug.log
```

then file tvDebug.log will be only the last 20K of its previous size. If the file is not more than 20K it is untouched.

Trimlogs is easy with Filetail

To trim all the log files on all drives back to 50k one can enter the line:

```
filetail 50k "+listfile * *.log /s"
```

We may not want to bother the files named *install.log* as these are sometimes used by uninstalls. Then we would use *delwith* to remove those lines from the *listfile* output before filetail gets at them

```
filetail 50k "+listfile * *.log /s| delwithi any install"
```

Or, as is done in the trimlogs.bat file, use a file named *skiplogs* to list tokens for file names to be skipped:

```
filetail 50k "+listfile * *.log /s| delwithi any @skiplogs"
```

Trimlogs.bat Source

We added some commands to see if there is already a file named *skiplogs*. If there is not the procedure offers to create one for you with the single entry “installs”.

There is an echo line that needs to be all one line.

```

@echo off

if exist skiplogs goto doit
cls
echo File skiplogs is used for trimlogs.bat.
echo.
echo You probably want to exclude install.log files that are
    sometimes
echo used for uninstalls
echo.
echo Shall I make a Skiplogs file that skips installs?
choice /cYN /ty,20
    if errorlevel 1 goto makfil
    goto end

:makfil
    echo.
    echo install>skiplogs

:doit

filetail 20k "+listfile * *.log /s| delwithi any @skiplogs" /d

:end

```

The “/d” at the end of the main line, in bold, is a debug switch. This tells Filetail to list the files to be changed without changing them. Use any text editor to remove the “/d” switch to let filetail trim the files.

Sample Trimlogs Output

```

E:\>trimlogs
listfile * *.log /s| delwithi any @skiplogs
Debug switch, /d, on for task E:\RIVERA\FILETAIL.EXE
Debug: Use last 20k bytes of E:\rivera\skiplogs
Debug: Use last 20k bytes of c:\SCANDISK.LOG
Debug: Use last 20k bytes of g:\windows\Zoom External V92 Voice Faxmodem.log
Debug: Use last 20k bytes of h:\programming\projs50\dhrs1t\JUNK.LOG
Debug: Use last 20k bytes of h:\programming\projs50\dhrs1t\GRAPHIT.LOG
Debug: Use last 20k bytes of h:\programming\projs50\dhrs1t\MUDGE.LOG
Debug: Use last 20k bytes of h:\programming\projs50\dhrs1t\projs50.log

```

Deleting Commonly Useless Files

The commonly useless files are:

```
*.tmp          *.bak          *.wrk
```

As Microsoft's Disk Cleanup is not thorough, and it is slow. It leaves a lot of files that should be cleared up, and it is awkward to run at startup or shutdown. However with listfiles and dels this is a simple task:

```
dels "+listfile * *.tmp,*.bak,*.wrk"
```

The Programs for the Script Files – The River

The script files, bigfiles.bat and delcache.bat, use *The River*, which is a collection of almost two hundred *atomic, re combinable* programs. Each program does one thing, well, and does not try to do other things.

Because of the limitations in goals, the programs can be very small. Eight K is the average size. Because they are so small, they load and start very quickly indeed. Because they are so small they make very good use of the system's L1 cache, 200 River programs can easily fit in most L1 caches, which means they can run ten to twenty times faster than programs in RAM, and far faster than programs that need disk access.

A River is a stream of lines each ended with a line terminator. River lines may not be larger than 2048 characters. Given this simple assumption, what can be done with small programs expands mightily.

The end result is that *The River's* approach means that tasks can often be finished before an obese interpreter such as VB script can load., much less start. Tasks using The River are freakily fast.

River Programs Used

The River programs used are:

- Dels – Delete files, either from the command line or from I/O re-direction.
- Delwithi – Delete River lines (I/O redirection streams) with tokens in them
- Faddsize – Add the file size to a River of file names.
- Filetail – Keep the end of a file and throw out the beginning, good for log files.
- Inleadb – Insert leading blanks to a River column to regularize column width and aid sorting.
- Keptop – Keep the top *n* lines of the River
- Listdirs – List directory names, optionally for many drives, and for many file patterns.
- Listfile - List file names, optionally for many file patterns from many drives.
- Selectab – Select and re-order columns
- Usage – Show the usage of a River program from information in the lexicon, a file named “lexecon”

You may do “usage *program_name*” for brief information on any program, as in
usage keptop

DelCache as a River Script

As an example take a look at delcache.bat. Actually you could empty all the caches on a system's drive with the command:

```
listdirs * cache | dels
```

Some feel it is better for maintenance to list the most important verb analog first. In this case it is dels, for deletes, and the line could be written:

```
dels "+listdirs * cache"
```

The parameter construct "**+ *command parameters ...***" will run the program in the quoted area and place the results in the original command. In this case dels will operate on all the answers to, the lines of cache directories, *listdirs * cache*.

```
C:\testdocs\joomla\cache
C:\testdocs\joomla\includes\pattemplate\pattemplate\templatecache
C:\testdocs\joomla\includes\cache
E:\aweb\1jbn\mediaw\docs\php-memcached
G:\program files\opera\profile\cache4
G:\program files\opera\opcache
G:\windows\application data\mozilla\firefox\profiles\drmgxund.default\cache
G:\windows\application data\openoffice.org2\user\registry\cache
G:\windows\application data\openoffice.org2\user\config\imagecache
I:\documents and settings\grendel\application data\openoffice.org2\user\config\imagecache
I:\documents and settings\grendel\application data\openoffice.org2\user\registry\cache
I:\documents and settings\grendel\local settings\application data\microsoft\feeds cache
I:\documents and settings\grendel\local settings\application
data\mozilla\firefox\profiles\g9jeqlbu.default\cache
I:\program files\opera\opcache
I:\windows\driver cache
I:\windows\pchealth\helpctr\config\cache
I:\windows\pchealth\helpctr\offline cache
I:\windows\softwaredistribution\eventcache
I:\windows\system32\dlldatacache
```

If your desire is to have only cache directories and not ones with cache in them, use the `/e` switch for listdirs, `/e` stands for exact and the ones underlined above will not be listed.

Recalling that deleting caches had problems with joomla misnaming a directory, we could delete the lines with joomla in them. To do this we operate on the output from *listdirs * cache* with the line deleter, delwithi. The command becomes:

```
dels "+listdirs * cache| delwithi any joomla"
```

or, in old pipe notation

```
listdirs * cache| delwithi any joomla| dels
```

which is a little like saying, "The hat, the train, momma's off, throw!"

The last problem is that we don't want to change the batch file any time we change the list of directories to skip, so we can use a file named "skipdirs" with the fragments in them. The `@` prefix for a parameter says, "use this file for the parameter information:

dels "+listdirs * cache | delwithi any @skipdirs"

River Parameter Lists

Many river commands accept lists as parameters. Lists are comma separated items, no internal blanks, such as

***.c,*.cpp,*.h*.obj**

If there must be an internal blank quote the entire list, as in:

"C:\windows,G:\documents and settings,H:\"

[Pardon and please ignore the underlining that OpenOffice.org insists on placing on URLs.]

River Parameter Constructs

Many River programs accept constructs, which are:

1. **?** Display the parameters up to here and do not run the program
2. Any param of **-? /? /help -h** will not run the program but display the lexicon help information.
3. **@file** include the file as separate parameters
4. **&file** include the file's records as a comma list single parameter
5. **"+command param param . . ."** Run the command before running the program. Enclosing with quotes is mandatory, and the + must be inside.
6. **"<command param param . . ."** Use the output of the command for input to the program. Enclosing with quotes is mandatory, and the < must be inside.
7. Many programs dealing with drives accept **"*"** for signifying all drives.

Dels Revisited

Dels deletes the files on the parameter list, up to twenty parameters which may be constructs. Wild cards are accepted.

If constructs are used, dels can handle up to 5,000 internal 'parameters', ergo

dels "+listfile *"

will bomb out around the 5,000th delete.

Delwithi - Delete River lines (I/O redirection streams) with tokens in them

delwithi { any | all } token token . . .

delwithi deletes any River line with the tokens in them. If any is used then any of the tokens deletes the line, if all is used then only lines with all the tokens are deleted.

dir /b | delwithi any .bak .tmp > goodfiles.txt

Faddsize – Add the file size to a River of file names

Faddsize, no parameters

Adds the file size to a River of file names. The size is added as a new, tab separated column at the end of the current line. If there are multiple columns already, the file name must be in the first column.

Dir /b | faddsize

Insleadb – Insert leading blanks to a River column

Insleadb *column_number total_no_of_spaces*

Insleadb will add blanks as needed to the column indicated so that the size is *total no of spaces*. A column of numbers can be modified to something useful for sorting with insleadb.

Keptop – Keep the top *n* lines of the River

Keptop *number*

Keptop keeps the top *number* of lines in a River/

Listdirs – List directory names

Listdirs *path_list token_list*

Listdirs will list all the directories at or below any drive or directory in the *path_list* if the directory name has a token in it from *token_list*. Constructs are available.

Listfile - List file names, optionally for many file patterns from many drives.

Listfile *path_list mask_list*

Listfile will list the file names of any file matching any of the wild card masks in *mask_list* from any of the drives or paths in *path_list*.

The defaults are the current working directory and *.*.

Selectab – Select and re-order columns

Selectab *c1 c2 c3 ... c20*

Selectab re-orders and eliminated or duplicates columns from a tab separated columns River. Each parameter represents the source column.

Selectab 2 1 3

reverses columns one and two and leaves column three in place, whereas

Selectab 2 1

results in a River of only two columns, all other having been removed.

Trimfile shortens files that are too long

Trimfile *size file_list file_list . . .*

or with the River

```
... | trimfile size | ...
```

where *size* is a number of bytes, or K if followed by K, or Meg if followed by M.
as in:

```
trimfile 50K *.log
```

or in River pipes mode:

```
listfile * *.log | trimfile 50K
```

or with in River command processing:

```
trimfile 50k "+listfile * *.log"
```

Trimfile will skip busy or locked files and no damage will be done.

Usage – Show the usage of a River Program

Usage token as in:

```
usage listdirs
```

Usage displays information about a river element from information in the lexicon, a text file named "lexicon".

If you are looking for a program, do not list the ext, enter bigfiles, not bigfiles.bat, or listdirs, not listdirs.exe.

Compilers and Source

Kevin Diggins BCX translator is used to feed the LCC32 C compiler from the University of Virginia. Thanks to both.

The BCX compile is the command

```
bc %targ% -e -t -x
```

where targ is the program name.

The C compile step is

```
lcc.exe -O -Zp1 %targ%.c -Ih:\programming\lcc\include
```

The link step is

```
lclnk.exe -o %targ%.exe -subsystem console -s %targ%.obj
```

Portability

I've seen a lot of C and the code looks like it could be run with any decent C compiler. So gcc should work but I have not tried it yet. Clearly non-portable to Linux programs include the modules using the Win32 API which is all the file/drive/task modules and very few of the others.