

Re: Scheduling CHKDSK and DEFRAG for unattended execution

Source:

http://www.tech-archive.net/Archive/WinXP/microsoft.public.windowsxp.perform_maintain/2007-01/msg00685.htm

- *From:* "Wesley Vogel" <123WVogel955@xxxxxxxxxxxxx>
 - *Date:* Fri, 26 Jan 2007 12:51:06 -0700
-

In line.

1. Is a hard disk volume the same as a logical drive?

volume

[[An area of storage on a hard disk. A volume is formatted by using a file system, such as FAT or NTFS, and has a drive letter assigned to it. You can view the contents of a volume by clicking its icon in Windows Explorer or in My Computer. A single hard disk can have multiple volumes, and volumes can also span multiple disks.

See also: disk; drive letter; file allocation table (FAT); NTFS file system; simple volume; spanned volume]]

logical drive

[[A volume that you create within an extended partition on a basic master boot record (MBR) disk. Logical drives are similar to primary partitions, except that you are limited to four primary partitions per disk, whereas you can create an unlimited number of logical drives per disk. A logical drive can be formatted and assigned a drive letter.

See also: basic disk; basic volume; drive letter; extended partition; master boot record (MBR); primary partition; volume]]

both from Windows Glossary in Help and Support.

2. What is a mount point?

mount point

[[Volume mount points and folder junctions allow an empty folder on an NTFS volume to point to the root or subfolder on another volume.]]

<quote>

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Mount

In computers, to mount is to make a group of files in a file system structure accessible to a user or user group. In some usages, it means to make a device physically accessible. For instance, in data storage, to mount is to place a data medium (such as a tape cartridge) on a drive in a position to operate. Macintosh calls it mounting when a user inserts a disc into the machine.

In a Unix environment, the mount command attaches discs, or directories logically rather than physically. The Unix mount command makes a directory accessible by attaching a root directory of one file system to another directory, which makes all the file systems usable as if they were subdirectories of the file system they are attached to. Unix recognizes devices by their location, as compared to Windows, which recognizes them by their names (C: drive, for example). Unix organizes directories in a tree-like structure, in which directories are attached by mounting them on the branches of the tree. The file system location where the device is attached is called a mount point.

Mounts may be local or remote. A local mount connects disc drives on one machine so that they behave as one logical system. A remote mount uses Network File System (NFS) to connect to directories on other machines so that they can be used as if they were all part of the user's file system.

<quote>

Glossary from Diskeeper Corporation

<http://www.diskeeper.com/glossary.asp?RI=1&SI=1&CI=1&Aid=0&Apid=0>

<quote>

Mounted Drives on NTFS Volumes

Mounted drives, also known as volume mount points or drive paths, are volumes attached to an empty folder on an NTFS volume. Mounted drives function the same way as any other volume, but are assigned a label or name instead of a drive letter. Mounted drives are robust against system changes that occur when devices are added or removed from a computer. They are not subject to the 26-volume limit imposed by drive letters, so you can use them for access to more than 26 volumes on your computer.

<quote>

How NTFS Works

<http://www.microsoft.com/technet/prodtechnol/windowsserver2003/library/TechRef/8cc5891d-bf8e-4164-862d-dac>

3. What is the fundamental difference between chkdsk, chkntfs, and autochk?

Description of Enhanced Chkdsk, Autochk, and Chkntfs Tools

<http://support.microsoft.com/kb/218461>

chkdsk.exe = Check Disk Utility. Creates and displays a status report for a disk based on the file system. Chkdsk also lists and corrects errors on the disk. Used without parameters, chkdsk displays the status of the disk in the

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current drive.

chkntfs.exe = NTFS Volume Maintenance Utility. Displays or specifies whether automatic system checking is scheduled to be run on a FAT, FAT32, or NTFS volume when the computer is started.

autochk.exe = Auto Check Utility. Only runs at boot before Windows loads, cannot be run in Win 32 mode. Every time Windows restarts, Autochk.exe is called by the Kernel to scan all volumes to check if the volume dirty bit is set. If the dirty bit is set, autochk performs an immediate chkdsk /f on that volume. CHKDSK /f verifies file system integrity and attempts to fix any problems with the volume.

<quote>

Autochk.exe is a version of Chkdsk that runs only before Windows XP starts. Autochk runs in the following situations:

* Autochk runs if you try to run Chkdsk on the boot volume. Chkdsk cannot dismount the boot volume, so Chkdsk offers to run the repair process by using Autochk when the computer is restarted. If you press the Y key to schedule Autochk, you have 10 seconds after the computer restarts to press any key and cancel the repair process. If you cancel Autochk before the 10-second delay lapses, Autochk does not run the next time you restart the computer. If you want to run Chkdsk again, you can do so from the command line.

* Autochk runs if Chkdsk cannot gain exclusive use of the volume. If Chkdsk cannot gain exclusive use of a volume when you run Chkdsk from the command line, Chkdsk offers to dismount the volume. If you press the Y key and Chkdsk still cannot dismount the volume, or if you press the N key, then Chkdsk offers to run the repair process by using Autochk when the computer is restarted. If you press the Y key to schedule Autochk, you have 10 seconds after the computer restarts to press any key and cancel the repair process. If you cancel Autochk before the 10-second delay lapses, Autochk does not run the next time you restart the computer. If you want to run Chkdsk again, you can do so from the command line.

* Autochk runs if the volume is flagged as dirty. If the file system has flagged the volume as dirty, Autochk runs the repair process at startup. Volumes are flagged as dirty when the file system detects an error on the volume. If Autochk detects a dirty volume, it provides a 10-second delay and then begins the repair process. If you cancel Autochk when a volume is dirty, Autochk attempts to run again after a 10-second delay each time the computer is restarted.

<quote>

from...

Running Autochk When the Computer Restarts

4. Isn't there a utility or powertoy that can allow us to schedule automated checks without playing Russian-Roulette with the registry?

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How many machines are you talking about?

This schedules chkdsk for the next reboot.

Error Checking (chkdsk.exe).

1. In My Computer or Windows Explorer, right-click the drive you want to check and then click Properties.
2. On the Tools tab, click Check Now.
3. Check both boxes:

- * Automatically fix file system errors
- * Scan for and attempt recovery of bad sectors

A message will popup.

[[The disk check could not be performed because the disk check utility needs exclusive access to some Windows files on the disk. These files can be accessed only by restarting Windows. Do you want to schedule this disk check to occur the next time you restart the computer?]]

Click YES.

Chkdsk will run on the next reboot.

Use the chkntfs or the FSUTIL dirty commands to set or query the volume's dirty bit (indicating corruption) so that Windows runs chkdsk when the computer is restarted.

On volumes marked as "dirty," Windows automatically runs chkdsk when the computer is restarted.

chkntfs /c volume:

The /c switch schedules the specified volume to be checked when the computer starts.

volume: is the drive letter, C:

chkntfs /c c:

FSUTIL dirty set <volume pathname>

dirty set, sets the dirty bit.

FSUTIL dirty set c:

—

Hope this helps. Let us know.

Wes
MS-MVP Windows Shell/User

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In [news:O\\$\\$40xOOHHA.2312@xxxxxxxxxxxxxxxxxxxxxx](mailto:O$$40xOOHHA.2312@xxxxxxxxxxxxxxxxxxxxxx),
Blue Max <mailrichard@xxxxxxx> hunted and pecked:

Thanks, Wesley, there appears to be a lot of good information here and it will take me awhile to digest it all. Meantime, a few more novice questions if we may:

Thanks

"Wesley Vogel" <123WVogel955@xxxxxxxxxxx> wrote in message
[news:OTusOu\\$OHHA.2232@xxxxxxxxxxxxxxxxxxxxxx](mailto:news:OTusOu$OHHA.2232@xxxxxxxxxxxxxxxxxxxxxx)

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session
Manager
Value Name: BootExecute
Data Type: REG_MULTI_SZ
Value Data: autocheck autochk /r \??\C:

chkdsk c: /f /r
adds the following entry to the BootExecute value:

autocheck autochk /r \??\C:

from...
CHKNTFS.EXE: What You Can Use It For
<http://support.microsoft.com/kb/160963>

So does running the Check Disk tool from Drive Properties.
Right click Drive | Properties | Tools tab | Check Now button |
Select both boxes in Check Disk Local Disk (C:)

<quote>
Registry value Function

/P \??\Volume: Schedules an unconditional Chkdsk against the
volume.
/p \??\VOLUME{GUID} Schedules an unconditional Chkdsk against a
volume
mount point.
/k:Volume * Excludes Chkdsk from running against the
volume. /m \??\Volume: Tells Autochk to look only at the dirty
bit on the
volume, and if set, run Chkdsk.

Sample command Resulting registry entry

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```
Chkdsk C: /F Autocheck autochk /p \??\C:
Chkdsk C:\mountpoint /F Autocheck autochk /p \??\VOLUME{GUID}
Chkntfs D: E: /X Autocheck autochk /k:D /k:E *
Chkntfs G: /C Autocheck autochk /m \??\G:
```

<quote>
from...
Description of Enhanced Chkdsk, Autochk, and Chkntfs Tools in Windows
2000 <http://support.microsoft.com/kb/218461>

<quote>
BootExecute Data Item
The BootExecute data item contains one or more commands that Session
Manager
runs before it loads any services. The default value for this item is
Autochk.exe, which is the Windows NT version of Chkdsk.exe. The default
setting is shown in this example:

```
BootExecute : REG_MULTI_SZ : autocheck autochk*
```

<quote>
from...
Windows NT Workstation Resource Kit: What Happens When You Start
Your
Computer

<http://www.microsoft.com/technet/archive/ntwrkstn/reskit/booting.msp?mfr=true>

If Chkdsk is to run in write-mode to attempt to remedy corruption, in most cases, there will be locked files and it requires restarting to have exclusive access to the partition or partitions. This process can be automated and requires no user intervention. Usually, a user needs to press "y" to schedule Chkdsk to run in write-mode on the next restart; however, this process can be automated as follows:

```
@echo off
echo y|chkdsk C: /f/r
```

How to Automate Chkdsk
<http://support.microsoft.com/kb/197527>

<http://www.ericphelps.com/batch/samples/today.bat.txt>

For Chkdsk help...
Paste the following line into Start | Run and click OK...

```
hh ntcmds.chm::chkdsk.htm
```

You could use the chkntfs or the FSUTIL dirty commands to set or query

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the volume's dirty bit (indicating corruption) so that Windows runs chkdsk when the computer is restarted. On volumes marked as "dirty," Windows automatically runs chkdsk when the computer is restarted.

chkntfs c: /c

/C

Schedules a drive to be checked at boot time; chkdsk will run if the drive is dirty.

chkntfs /?

and

hh ntcmds.chm::/chkntfs.htm

FSUTIL dirty set c:

FSUTIL /?

and

hh ntcmds.chm::/fsutil_dirty.htm

If the command for the day requires user input, for example, you have to hit enter or answer yes or no, you should run a separate batch file instead of running the command directly. Assume you want to run CHKDSK with the /F option to fix errors. If it finds errors, it will ask you to type "y" or "n". You can create a batch file which will do this for you:
ECHO Y|CHKDSK /F
If all you need is to press "Enter", you can do this:
ECHO.|CHKDSK /F
If you need to press "y", AND THEN HIT "Enter", it gets more complicated. You have to create what is generally called a "script" containing the exact keystrokes you need to press. You can create it ahead of time, or as needed like this:
ECHO Y>SCRIPT.TXT
ECHO.>>SCRIPT.TXT
TYPE SCRIPT.TXT|CHKDSK /F

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Notice the first line had only one ">", but the second line had two ">>". Just one will cause the SCRIPT.TXT to be created new (if it already exists, it will be erased to start over fresh). The two >> will cause things to be appended to the existing SCRIPT.TXT
<http://www.ericphelps.com>

from...

<http://www.ericphelps.com/batch/samples/today.bat.txt>

How to Automate Disk Defragmenter Using Task Scheduler Tool in Windows XP

<http://support.microsoft.com/kb/555098>

There are two defrag tools in XP.

dfrg.msc is the pretty one that opens from Start\All Programs\Accessories\System Tools.

defrag.exe is the command line tool that runs from the command prompt.

defrag.exe is the one that you can schedule.

Description of the New Command Line Defrag.exe Included with Windows XP

<http://support.microsoft.com/kb/283080>

How To Schedule Tasks in Windows XP

<http://support.microsoft.com/kb/308569>

How to Defragment Your Disk Drive Volumes in Windows XP

<http://support.microsoft.com/kb/314848>

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Hope this helps. Let us know.

Wes

MS-MVP Windows Shell/User

In [news:eO5wGV\\$OHHA.324@xxxxxxxxxxxxxxxxxxxxxx](mailto:news:eO5wGV$OHHA.324@xxxxxxxxxxxxxxxxxxxxxx),
Blue Max <mailrichard@xxxxxxx> hunted and pecked:

We would like to safely schedule CHKDSK and DEFRAG for automated, unattended execution once a week for routine maintenance.

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However, we seem to have problems configuring these tasks. For example, we can schedule CHKDSK to run, but it also indicates that it must dismount the volume and we will lose any current handles and then offers to schedule the operation at the next startup because there are open files. Is there a way to automatically run CHKDSK so that it will automatically schedule itself for the next reboot and then automatically reboot the system so that the CHKDSK will be performed?