Backup of locked files using **vshadow.exe** and **robocopy.exe**

vshadow.exe is the program that creates and manipulates shadow copies (or snapshots) of an NTFS volume

Shadow copies are volatile and do not survive reboots, so the backup (robocopy) takes place during the calling of the **vshadow.exe** program.

The 4 files needed are: **vshadow.exe, robocopy.exe, dosdev.exe, vss-exec.cmd**. Place the files where you want, but vshadow.exe and dosdev.exe need to be in your path. I put them in C:\windows and I put all my batch files in C:\backup\ (as you will see below).

A backup of an entire C:\ can be accomplished with this command:

```
c:\vshadow.exe -script=vss-setvar.cmd -exec=vss-exec.cmd c:
```

Now, the [-script=vss-setvar.cmd] is an internal parameter in vshadow.exe that gives the shadow copy an identifier string so that a drive letter can be assigned to it – which allows robocopy.exe to access the files.

The [-exec=vss-exec.cmd] is a parameter that calls the file "vss-exec.cmd" which I create and contains:

----------begining----------

```
call vss-setvar.cmd
@echo off
dosdev B: %SHADOW_DEVICE_1%
robocopy B:\stuff \\backupserver\share /MIR
dosdev -r -d B:
```

----------end----------

The event process is this:
The **vshadow.exe** program creates a shadow copy, and then calls an internal parameter that assigns a variable to the shadow copy. Then the batch file [**vss-exec.cmd**] is executed within **vshadow.exe** where a backup takes place. **Dosdev.exe** assigns a drive letter to the shadow copy [B:]. All normal **robocopy.exe** parameters can be passed at this time. Then **dosdev.exe** removes the drive letter and **vshadow.exe** is allowed to exit.

I like to insert a pause at the end of the vss-exec.cmd so I can see the result of the robocopy. I remove the pause when I set the task [backup.bat] to run automatically with the Windows Task Scheduler.

NOTES: There are **different versions of vshadow.exe** (32bit, 64bit, workstation, and server). There are two directories (on a system volume) that even vshadow.exe cannot copy. They are C:\System Volume Information (for partition data) and C:\Windows\System32\LogFiles\WMI\RtBackup\ (for real-time backup data).

You can download all four vshadow.exe versions, as well as dosdev.exe from here:
http://ithelp.cveg.uark.edu/backup/backup.zip

The following two examples are backup plans that work on two different servers. C:\ and D:\data\

--EXAMPLE 1--

C:\backup\backup.bat (runs nightly on a 32Bit Server 2008)

----------begining----------
```
@echo off
vshadow32.exe -script=vss-setvar.cmd -exec=C:\backup\vss-exec.cmd C:
exit 0
```
----------end----------

C:\backup\vss-exec.cmd (just a text file)

----------begining----------
```
call vss-setvar.cmd
@ECHO OFF
dosdev B: %SHADOW_DEVICE_1%
robocopy B:\ \\ip-of-server\backup\c-drive *.* /XJD /XD
"B:\Windows\System32\LogFiles\WMI\RtBackup" "B:\System Volume
Information" /XF "pagefile.sys" /MIR
dosdev -r -d B:
```
----------end----------

The "robocopy …stuff… /MIR" command is all on one line

The robocopy options are explained here:
. = copy all files
/XJD = exclude Vista and Server 2008 junction point directory (access denied problems)
/XD "B:\firstfolder" "B:\secondfolder" = exclude the listed folders
/XF "pagefile.sys" = exclude backing up the pagefile
/MIR = make the backup mirror the source files

--EXAMPLE 2--

C:\backup\backup.bat (runs nightly on a 64Bit Server 2008)

----------begining----------
```
@echo off
vshadow64.exe -script=vss-setvar.cmd -exec=C:\backup\vss-exec.cmd D:
exit 0
```
----------end----------

C:\backup\vss-exec.cmd (just a text file)

----------begining----------
```
call vss-setvar.cmd
@ECHO OFF
dosdev B: %SHADOW_DEVICE_1%
robocopy B:\data\ \\ip-of-server\backup\d-drive\data *.* /mir
dosdev -r -d B:
```
----------end----------

This has helped me provide an inexpensive backup plan. Hope it helps someone else too.

Any improvements (or mistakes I've made) are welcome kendall@uark.edu

Update:

After a while, I noticed there are additional files on a system volume [C:\ ] that are locked and cannot be accessed. They were located in C:\Windows\Temp

I added the directory to the robocopy exclude list -> /XD "C:\Windows\Temp" ...

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Since I'm not a robocopy expert, any comments on the /XJD option in robocopy are welcome. I don't know the full effect this option will have when trying a restore...