

HDD to SSD UPGRADE Step-by-Step



Jim McKnight www.jimopi.net SSD_Upgrade.lwp revised 6-8-2020a

PROGRAMS USED: Acronis True Image, EASEUS Partition Manager, Speedfan, Crystal Disk Info, & HDTune.

1. Verify that the new SSD is of adequate size to be at least DOUBLE the size of the data on the old hard-drive. Do not initialize or format the new SSD. Let Acronis do the work.
2. Run the "Speedfan" utility and verify the PC Temperatures are OK.
3. Run the "Crystal Disk Info" utility and verify the condition of the old Hard-drive.
4. Run an "HDTUNE" utility full slow scan. Note the data transfer speed: _____. If any error sectors, you must run CHKDSK /f /r.
5. Run CHKDSK /f /r.
6. Verify the PC boots OK.
7. Verify that the System BIOS/UEFI is the latest version available. Update as necessary.
8. Verify that the BIOS/UEFI SATA MODE is set to AHCI (Not IDE): If not, stop and get AHCI Drivers set up for the system so that it can boot as AHCI. Follow these tips:
 - Win10, see: <http://support.thinkcritical.com/kb/articles/switch-windows-10-from-raid-ide-to-ahci>
 - Win8, see: http://answers.microsoft.com/en-us/windows/forum/windows_8-hardware/how-can-i-make-ide-to-ahci-in-windows-8/d2cbad22-6306-4764-984a-cea5e97b8d11
 - Win7, see: <http://https://support.microsoft.com/en-us/help/922976/error-message-occurs-after-you-change-the-sata-mode-of-the-boot-drive>
9. Verify that the PC still boots OK.
10. BACKUP FULL IMAGE: Acronis True Image 2016 or higher: Boot your Acronis CD and do a FULL backup of the old hard-drive to an external hard-drive
11. DRIVE SIZE: If the old Hard-Drive is bigger than the new SSD, you will probably have trouble cloning or restoring an image to it. Now is the time to Re-Partition the hard-drive to a size slightly smaller than the SSD.
12. BACKUP FULL IMAGE AGAIN: If you have re-partitioned, then boot your Acronis CD and do another **FULL** backup of the hard-drive to an external hard-drive. **Not an INCR backup!**
13. Power off the PC, unplug it, open it up,
14. Carefully blow out all the dust inside (Blow air only, never use a vacuum).
15. With the PC open and unplugged, make sure the keep-alive battery is 3.1 vdc or greater. If not, replace it.
16. *If you do replace the battery, make sure the PC boots OK before continuing.*
17. Install the new SSD.
18. Put the PC back together and replug all cables including the AC Power Adapter.
19. Make sure the External Hard-drive is turned on and connected (Preferably to USB 3.0).
20. Power up the PC and boot your Acronis CD.

PARTITION ALIGNMENT: Why does the 1k/2k/4k boundry alignment of the partitions matter? SSD's run fastest when the partitions are aligned to 4k boundries. See this site for more info:
<http://bloa.dennisrobinson.name/partition-alianment-ssd-performance/>

21. RESTORE OR CLONE? I prefer to do a Backup/Restore from the original drive to the new SSD rather than a Clone because in my experience an Acronis Restore will ALIGN the Partitions for maximum speed and the **Clone does not.**
NOTE: Do not format the new SSD. Let the Acronis Restore process do everything.
22. RESTORE IMAGE: Restore the Acronis image to the SSD. *If you cannot get the restore to work, then using the EASEUS PARTITION MANAGER Boot CD, change the size of the original hard-drive C partition to a size slightly smaller than the size of the new SSD. Then do another ACRONIS FULL backup. Use that new backup to restore the image to the new SSD.*
23. Power down and unplug all external hard-drives.
24. Power on and verify that the PC Boots OK to the Admin user. *The system will probably install a driver for the new SSD and request a reboot. Be sure to do this before continuing.*
25. CHECK THE SSD PARTITION ALIGNMENT: My Flash drive:\Support Files\SSD Stuff\
 - a. Run the AS SSD BENCHMARK Utility and check whether the SSD PARTITIONS are ALIGNED to 1k/2k/4k or not. *(Any one of the three is OK)*
 - b. If not aligned 1k, 2k, or 4k, run the EASEUS Partition Manager ALIGNMENT WIZARD *(version 11.9 or higher)*. *(NOTE: The Alignment Wizard needs plenty of UNALLOCATED SPACE on the hard-drive to do its job. If it fails, then reduce the size of the C: partition, run the Wizard again, then put the partition size back to its original size.)*
 - c. If the system will not BOOT after correcting the ALIGNMENT, use the Win7/Win10 System Repair Disk to do a Startup Repair.
26. Verify that the PC still boots OK
27. Run the Disk Error Check again (chkdsk /f /r).
28. TRIM: Verify TRIM is ENABLED: To check, open a Command Prompt window (“Run As Admin”) and run the command: **fsutil behavior query DisableDeleteNotify** . If it’s set to “0”, then TRIM is enabled and everything is good. If it’s set to “1”, TRIM is disabled and you need to enable it. *This is rare, however.*
29. Verify that the FULL SIZE of the new SSD is recognized by the system. *(If not, you will have to increase the partition size to maximum. You can use the system Disk Management or the EASEUS PARTITION MANAGER.)*
30. DISABLE INDEXING: 1. Click Start menu and click “Computer.”, 2. Right-click the “C” Drive SSD and click “Properties.”, 3. De-select the box labeled “Allow files to have contents indexed in addition to file properties” and click “OK. If necessary, click “Ignore All”.
31. Run the AS SSD BENCHMARK Utility scan again. Record the results with <Alt-print screen> and paste into a Word Document. Save for reference.
32. From an Administrative Command Prompt, run Winsat Formal. Then Reboot. Windows will then “know” you have an SSD and set the system accordingly.
33. Go to *(This PC > Right-click on Drive C > Properties > Tools > Optimize)*. Make sure it shows the new SSD as an SSD and not an HDD. If not, Uninstall the Driver and reboot.
34. Run an HDTUNE full slow scan. Note the data transfer speed: _____
35. SYSTEM RESTORE: Verify that System Protection (System Restore) is running properly and on the proper hard-drive. Correct it if necessary.

At this point, I normally take the time to go through my Windows “Quick System Checkup” on every PC that I work on. The utility programs that I use in my PC Checkup are free and download links to them can be found on my website:
<http://www.jimopi.net/PDFs/Word%20Pro%20-%20Utilities1.pdf>