

HDD to SSD UPGRADE Step-by-Step



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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.
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 available version. Update as necessary.
8. 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. (*This is in case the Clone does not work.*)
9. 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://www.tomshardware.com/answers/id-2795928/switch-ide-ahci-windows.html>
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>
10. Verify that the PC still boots OK.
11. If you made any changes in the BIOS Mode, do another ACRONIS FULL backup of the old hard-drive to an external hard-drive.
12. Power off the PC, unplug it, open it up,
13. Carefully blow out all the dust inside (Blow air only, never use a vacuum).
14. With the PC open and unplugged, make sure the keep-alive battery is 3.1 vdc or greater. If not, replace it. *If you do replace the battery, make sure the PC boots OK before continuing.*
15. Install the new SSD.
16. Put the PC back together and replug all cables.
17. Plug the old hard-drive into a USB adapter so it can be cloned by the ACRONIS boot CD.
18. Power up and boot your Acronis CD.

PARTITION ALIGNMENT: Why do 1k/2k/4k boundry alignment of the partitions? SSD's run fastest when the partitions are aligned to 4k boundries. See this site for more info:

<http://blog.dennisrobinson.name/partition-alignment-ssd-performance/>

19. RESTORE OR CLONE? I prefer to do a Backup/Restore of the original drive to the new SSD rather than a Clone because in my experience an Acronis Restore should 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.

- 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 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.
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- CLONE the hard-drive to the SSD using either Acronis or EASEUS Partition Manager.
NOTE: Do not format the SSD ahead of time. If you choose to format the new SSD, make sure you set the block size to 4k.

20. Power down and unplug all external hard-drives.

21. 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.*

22. SSD PARTITION ALIGNMENT:

- 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. After ALIGNMENT, if the system will not boot, use the Win7/Win10 repair disk to do a Startup Repair.

23. Verify that the PC still boots OK

24. 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", 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.*

25. 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.)

26. Run the AS SSD BENCHMARK Utility Benchmark scan again, record the results with <Alt-print screen>, and paste into a Word Document. Save for reference.

27. Run an HDTUNE full slow scan. Note the data transfer speed: _____

28. For Windows 7/8 only, go to the Drive C disk properties and disable "Scheduled Defrags".

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](http://www.jimopi.net/PDFs/Word%20Pro%20-%20Utilities1.pdf)