



Tutorial

How to install a MyDigitalSSD Super Cache 2 into a Lenovo ThinkPad X220

Version 1.1

This tutorial will walk you through how to open a Lenovo X220, install a MyDigitalSSD Super Cache 2 SSD, then apply FNet's HybriDisk Software.

NOTE: This tutorial is for any device that does not currently have a cache drive, yet has an open slot to accept one. Aside from the Lenovo X220's specific screw and clamp configuration, this tutorial should serve as a basic guideline to install a Super Cache 2 solid state drive in any compatible device.

We chose to feature a Lenovo X220 in this tutorial because it is one of the more complicated mSATA supported laptops to upgrade due to the location of its mSATA slot. Most other laptops simply have a two screw door on the bottom with an easily accessible slot.

- WARNING -

Opening and upgrading the hardware on a laptop may void the warranty or damage the machine. Opening the device is done at the users own risk and My Digital Discount cannot be held responsible.

Checklist:



- ✓ Lenovo ThinkPad X220 with an open mSATA slot
- ✓ MyDigitalDiscount 64GB Super Cache 2 SSD
- ✓ FNet HybriDisk serial code
- ✓ Screwdriver
- ✓ Internet connection

Step 1: Finding out if you already have a cache drive installed

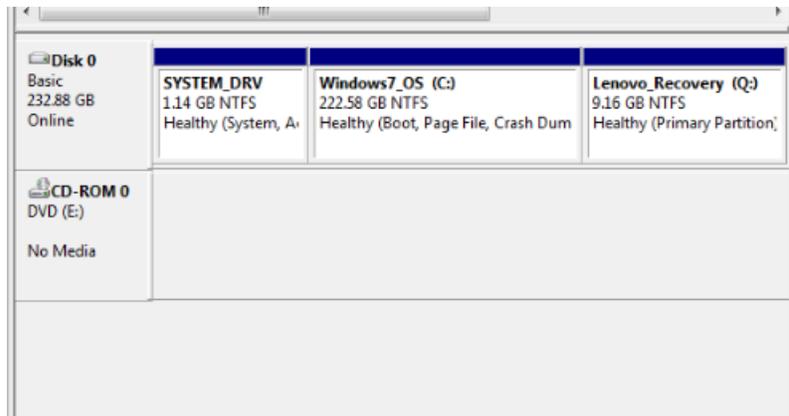
1. Accessing the Disk Manager inside Windows.
 - a. Right click on 'Computer' and go to 'Manage'.



- b. Click on 'Disk Management'.



- c. In the middle pane, you will see something like below, this X220 only has 1 disk, 'Disk 0' which means there is nothing installed in the mSATA slot.



NOTE: Thumb drives and SD cards also show up in this area, but where it says 'Basic' above it will state 'Removable (X:)'.

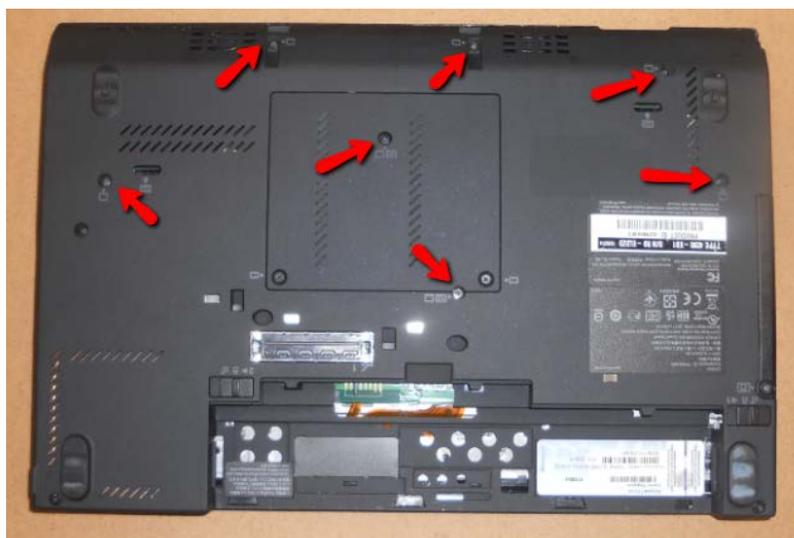
If you have another Basic drive installed, stop and check if it is cache, if it is, consult our Lenovo Y510P upgrade tutorial coming soon.

Step 2: Opening and closing the X220

1. Shut down the computer completely.
2. Remove the battery.
3. Remove all the screws with the following icon next to them:



In the case of the Lenovo X220, there are 7 screws that need to be removed:



4. There are 2 connectors, one for the keyboard and one for the track pad. Be sure to only lift up on the top in the front 2-3 inches.



5. Reach in with the screw driver and flip the tab up to release the ribbon cable so you can open the top completely.



6. As we can see, the mSATA slot in this X220 is empty.



7. Take your MyDigitalSSD Super Cache 2 SSD and place it into the machine. It will only fit one way. Use the screw provided to secure it down. The SSD is now installed.



8. When putting the X220 back together, it is easiest to separate the keyboard from the track pad by separating the connection below:



9. Then you can easily reconnect the ribbon.



10. Next, reconnect the keyboard and close the lid. When putting the keyboard back in place, make sure to slide it under the lip.



11. Close it up.
12. Put the 7 screws back in.
13. Put the battery back in.

Step 3: Accessing the MyDigitalSSD Super Cache 2

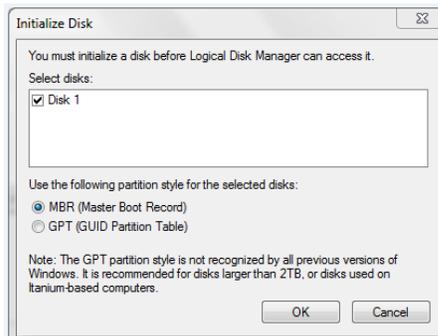
1. Like in Step 1, access the Disk Manager inside Windows.
 - a. Right click on 'Computer' and go to 'Manage'.



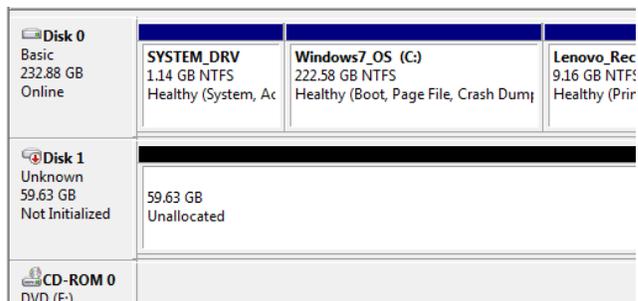
- b. Click on 'Disk Management'.



- c. As most Super Cache 2 units are shipped uninitialized, you might see this message when you open the disk manager:



- d. For now, just press Cancel, and you should see the following:



- e. Disk 1 is our new, properly installed Super Cache 2.
 - f. NOTE: For best results in setting the drive up as a cache drive, leave the drive uninitialized. However this is not a requirement. If you do choose to initialize, format and use the partition, when setting the cache drive up, it will wipe the drive clean.

Step 4: Download FNet HybriDisk cache software

1. Visit the following link to download the latest version of FNet HybrDisk Cache Software for free.

<http://www.mydigitalssd.com/fnet.php>

2. Click the download button on the page.

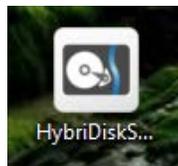


3. The program will download to your computer. Depending on your browser, it will either download to your desktop, downloads folder, a folder you've specified or, simply open the file automatically. Regardless, the downloaded file will look like this:



NOTE: This is a .zip compressed file, Windows 7 and up will open it as a file, Windows Vista and before you will need to download WinZip or Winrar.

4. Extract the single file inside the .zip to your desktop. The file on your desktop will look like this:



Step 5: Install the software

1. To avoid permissions, right click on the file and choose 'Run as Administrator'.



2. The program will open and take you through step by step.
3. Read the licence agreement by clicking the 'I have read and accepted the Licencing Agreement' link in blue lettering.

4. If you agree to the licence agreement, check the box to the left of the link and click the Install button at the bottom.



The installation process should take less than 10 seconds.

5. Click the 'Reboot Now' button to restart your computer.



6. After the computer reboots, you will now see this icon on your desktop:



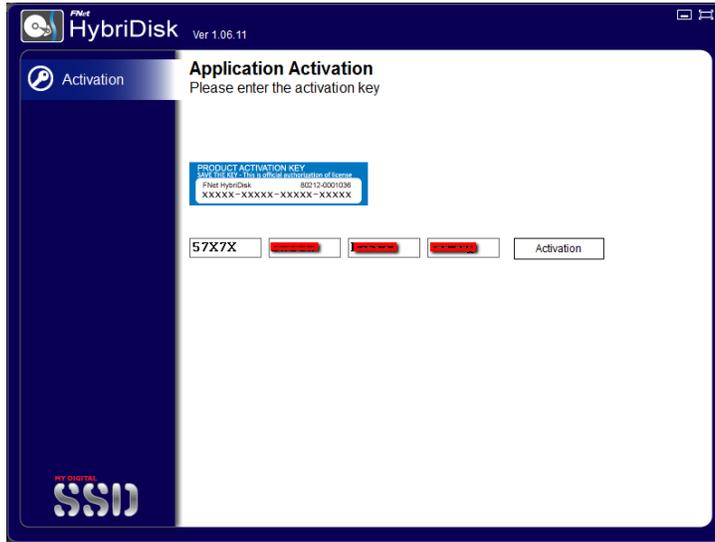
Along with a similar icon in the system tray. (Normally located at the bottom right of the screen.)



7. Double click the desktop icon to start the program. First, it will ask you for the activation key.

Every MyDigitalSSD Super Cache 2 comes with an FNet HybriDisk activation key. If yours did not, contact a MyDigitalSSD customer service representative immediately.

8. Enter your key and press the activation button:



Activation should take less than 10 seconds.

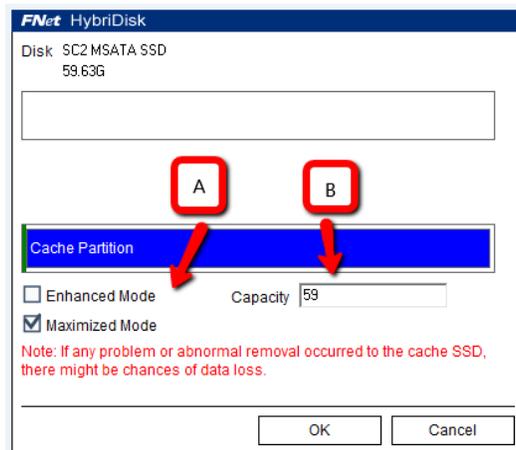
9. Next you will see the Config screen.
NOTE: Settings are only if you need to change the language of the program.
10. Under 'Master' you will see your main hard drive.
11. To add the Super Cache 2 to the Cache section, simply press the Green '+'.


12. This will show you a list of compatible drives. FNet is specifically for use with Super Cache 2 SSDs so the only drive in that list will likely be the SC2. The drive will already be highlighted as shown below, so simply press the green checkmark 'OK.'



13. Next, you will be asked to choose which mode and how much space you would like to allot for caching.

NOTE: Even if you do not use the entire drive for caching, **the entire drive WILL BE ERASED**, so if you allocated some space for storage before running this program, stop, and save that information elsewhere or it will be lost. If you do choose to use only 40GB of the 64GB, after you run this program, you can access and format the other 24GB in the disk manager from Step 3.



A: Choosing which mode is the best for you.

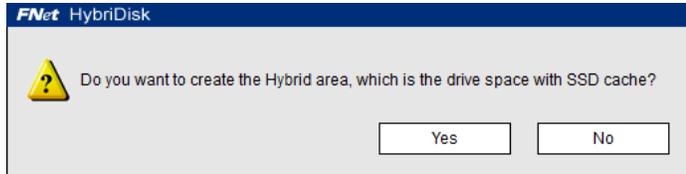
Enhanced Mode: The safe mode, read only from the SSD, caching in the true sense, information will be written to the SSD at normal hard drive speeds, and as the information is used, HybriDisk will start reading from the SSD at much faster speeds.

Maximized Mode: Read and write to the SSD, this mode is almost the same as running your system directly from the SSD. It will read and write all the information immediately performed on your PC, then periodically write the information to the HDD when the system is idle.

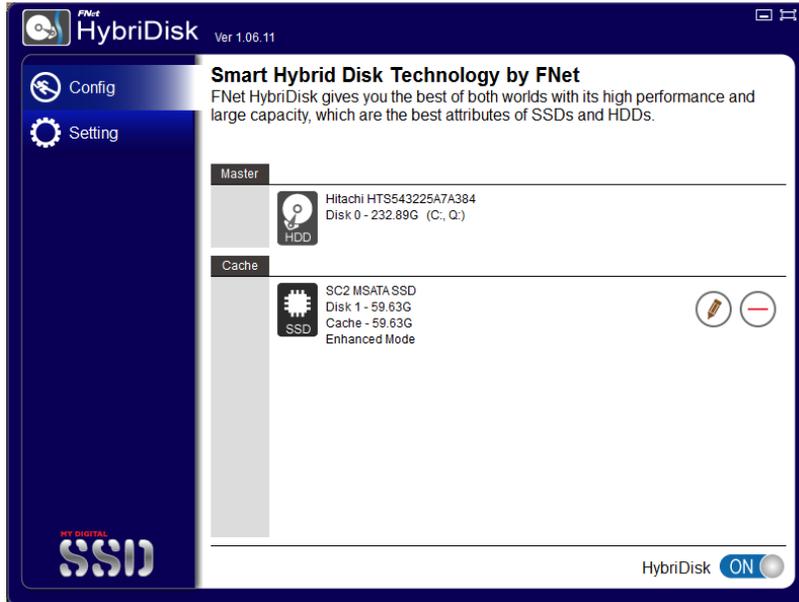
WARNING: Maximized Mode could possibly lead to data loss. If you are operating in Maximized Mode, and you manually shut down, put the PC to sleep, or just let it idle, the information will automatically write the information to the HDD, and the next time you start your PC, the information will be there. However, if the computer fails from a loss of power or a blue screen. The information you were immediately working on COULD BE lost. As noted by the warning in red letters above.

B: Capacity: Choose how much space you want to use to cache your computer. It is recommended that you use the entire drive to cache for the best results, however if you only want to use half and use the other half as amazingly fast access storage, that will also be an effective use of your MyDigitalSSD Super Cache 2 SSD. The program will default to using the full size of the SSD. FNet was kind enough to make the numbers easy, and just did it in Gigabytes. IE: 1 = 1GB and so on. As you can see, only 59GB is available out of my 64GB SSD, This is because of the actual GB size as explained here: <http://www.mydigitaldiscount.com/the-missing-gigabyte.html>

14. After determining the 2nd variable, press the 'OK' button to see the following dialog:



15. Click 'Yes' to proceed to the following screen:

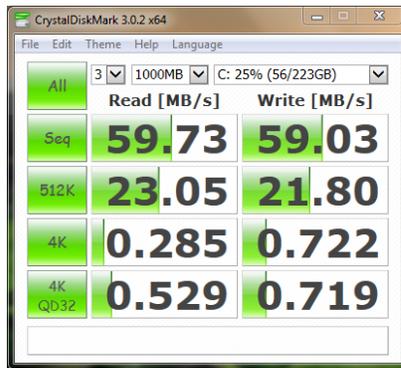


16. Press the  button to minimize it to the system tray, and you are off and running!

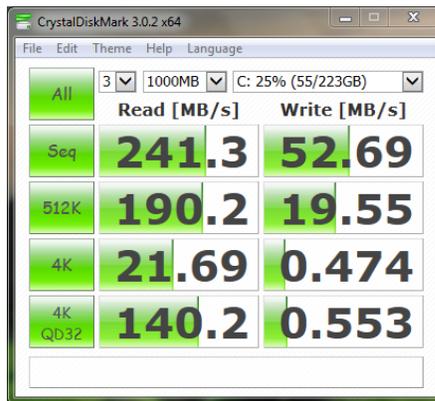
Step 5: Testing the results

Running from a hard drive is the biggest bottleneck for any computer today, PC, Mac, Linux, or server, desktop, notebook or tablet. We used Crystal Disk Mark, a simple and accurate free program, to determine some real time speeds. Keep in mind the mSATA slot on a Lenovo x220 is only running at SATA II (3G) speeds, so if you do this upgrade to your PC, and it runs on SATA 6G, your speeds will be even more impressive.

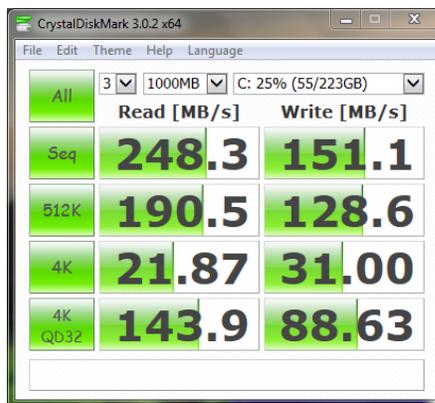
- 1) Without a cache SSD, running all your programs directly from the hard drive we saw the following.



- 2) In Enhanced mode, you will notice a gradual difference the more you open common programs. But there will be an immediate difference in read speeds. The write speeds on a bench test like this will never improve, but for real life applications that you open often, the writes will pull from the SSD and be much faster.



- 3) In Maximized mode, you will notice a speed difference immediately. But remember, because you're writing directly to the SSD, if there is an unexpected power down, the information you're immediately working on will be lost.



The End