SanDisk[®]

SanDisk HyperBoost[™]

PC Accelerator



User Manual

Preliminary, Rev 0.1

The content of this document is subject to change without notice

Technical Support SanDisk Knowledgebase Contact SanDisk

Table of Contents

Overview	3
Minimum System Requirements	3
Package Contents	3
Connecting Device to Your Computer	4
Setting Up SanDisk HyperBoost Software	5
SanDisk HyperBoost Main Screen	11
Acceleration Level	11
Status	12
Acceleration Log	12
Time Saved	12
SanDisk HyperBoost Software Options	13
Help	13
Check for Updates	13
Recalibrate	13
Advanced Details	14
About	14
Tutorial	14
Eject	14
Exit	14
SanDisk HyperBoost Advanced Details Screen	15
Capacity Used	15
SanDisk HyperBoost Cache Reads	16
Additional settings	16
System Tray Icon	18
Uninstalling the Software	19
Frequently Asked Questions	20

Overview

SanDisk HyperBoost is the simplest way to upgrade your PC's performance. Using a combination of hardware and software, SanDisk HyperBoost optimizes your PC. You will enjoy shorter bootup times, quicker application launch times, faster access files and folders, and overall a more responsive PC. SanDisk HyperBoost is using a USB 3.0 drive that is built on SSD technology in a tiny form factor to deliver excellent performance. It works with your system's existing hard drive to deliver the performance benefits of solid state technology at a fraction of the cost of total hard drive replacement.

The SanDisk HyperBoost software monitors the user's behavior and automatically copies the most frequently used applications and files onto the SanDisk HyperBoost drive. When the user accesses a file or application that is stored on the drive, the software reads that data off of the SanDisk HyperBoost drive rather than the Hard Disk Drive (HDD). By using Flash memory and no moving parts, SanDisk HyperBoost storage is much faster than traditional HDDs. Therefore, SanDisk Hyperboost significantly reduces latencies and transforms PCs into much faster machines – up to 4 times faster than before¹. It easily connects to any laptop or desktop computer configured with a USB 2.0 or 3.0 port and Windows® 7/8/8.1 operating system.

- Works with your existing hard drive to boost system speed.
- Up to 2 times faster bootup and up to 4 times faster application response times¹.
- Easy installation no need to open your PC, no Software downloads.
- Automatic operation Just plug the drive in, and let SanDisk HyperBoost do the rest.
- Easily connects to any laptop or desktop computer.
- Durable, resilient design.

Minimum System Requirements

- Windows[®] 7/8/8.1
- Hard Disk Drive as the main storage (no SSD)
- 1GB of RAM (32bit) and 2GB of RAM (64bit)
- USB 3.0 recommended for full performance improvement; USB 2.0 compatible
- Internet Explorer 9 or higher

Package Contents

- SanDisk HyperBoost Drive
- SanDisk HyperBoost Software already preloaded on the drive.

¹ As compared to 5400RPM SATA hard drive. USB 3.0 port required for full performance improvement. Based on internal benchmarking tests; performance may vary depending on host device, OS, frequency of application usage and other factors.

Connecting Device to Your Computer

To plug in the device to your computer, follow these steps:

NOTE: The SanDisk HyperBoost software is designed to work with either laptop or desktop computer.

- 1. Turn on the computer. Ensure you login to an account that has administrative privileges. If this is your own personal computer, you're probably ok.
- 2. Connect to a USB 2.0 or 3.0 port. Typically, the USB 3.0 port has a blue port color or the initials SS next to the port.



NOTE: The SanDisk HyperBoost PC accelerator works with both USB 2.0 and 3.0 ports. For maximum system performance, it is recommended to use a USB 3.0 port. (USB 3.0 ports have transmission speeds of up to 5 Gbit/s, which are much faster than USB 2.0 ports with 480 Mbit/s speeds.)

Setting Up SanDisk HyperBoost Software

To install the software, follow these steps:

1. After device is connected, either the SanDisk HyperBoost Software Autoplay screen appears, or a file explorer window may get opened automatically. This depends on your Windows settings.

You might also notice a message saying that a device driver software is getting installed:

On Windows 7:	Installing device driver software * × Click here for status.		
	×		
	Device Setup		
	Installing HyperBoost Please wait while Setup installs necessary files on your system. This may take several minutes.		
On Windows 8/8 1	Close		

On Windows 8/8.1:

Once the Autoplay screen appears, click on **Open Folder to View Files**.

NOTE: If neither the Autoplay screen nor the File explorer window appears, please access the SanDisk HyperBoost application through Windows File Explorer. This may have been caused because your computer was powered on after the device was connected, or because Autoplay was disabled in your PC's settings.



2. The SanDisk HyperBoost Setup icon appears. Double-click on the **SanDiskHyperBoostSetup** option.



3. If a Windows User Account Control screen appears requesting permission for software to make changes to your computer, select **Yes**. (If no screen appears, proceed to step 4.)



4. The SanDisk HyperBoost Installer Welcome screen appears. Click **Next**.



5. The License Agreement screen appears. Read the License Agreement. Scroll to the bottom of the screen and click **Accept** to confirm acceptance. Note: Only after you scroll to the bottom of the End User License Agreement, the **Accept** button will become green and you will be able to click on it.



- 6. The SanDisk HyperBoost Software Settings screen appears. Select the appropriate check box and click **Install**.
 - Create desktop shortcut: displays a SanDisk HyperBoost software icon on your desktop (recommended).



7. The SanDisk HyperBoost Software Installation screen displays the status as the software is installed on your computer. (This process may take a few minutes)



After the software had been installed, the computer should be rebooted to complete the software configuration process. Click **Now** to reboot at this time, or **Later** to reboot at another time.

NOTE: During the installation process you may notice the Autoplay window, or a File Explorer window, open up. If they do, please close them.

8. After reboot, you may see another User Access Control screen, requesting permission for software to make changes to your computer, select **Yes**.



9. After Clicking **Yes** the SanDisk HyperBoost software launches and the PC accelerator is activated.

NOTE: SanDisk HyperBoost has to calibrate your system in order to show you by how much it accelerated your PC. Due to this process, your computer may feel slow during the first couple of minutes immediately after the software is first launched. Please refrain from launching additional applications while the calibration takes place in order to minimize any impact on the calibration results. The calibration process is only initiated during the first time you launch the software, so you will not feel the same slowness on subsequent runs.

10. While SanDisk HyperBoost calibrates your system, a short Tutorial appears to let you learn more about SanDisk HyperBoost and how it can help you be more productive and save you time. Please use the arrows at the bottom of the screen to scroll between the slides. The Tutorial can be closed at any time by clicking on the "X" icon on the top right corner of the screen.



11. After taking the Tutorial and before getting to the software's Main Screen, you may get a notice that a newer version of the software is available. If one is available, click **Yes** and follow the instructions on the screen to download and install the new version.



NOTE: The SanDisk HyperBoost PC accelerator is fully operational every time your computer is turned on. Opening and closing the SanDisk HyperBoost software does NOT affect the acceleration operation.

SanDisk HyperBoost Main Screen

The SanDisk HyperBoost Main Screen displays system performance levels.

NOTE: The SanDisk HyperBoost PC Accelerator software accelerates your PC's operation by automatically monitoring and storing files you use most frequently on the SanDisk HyperBoost device. SanDisk HyperBoost has to learn your individual computer usage patterns, before it can increase system performance. Therefore, performance levels will be minimal immediately after installation and will continually improve as you use your computer.

If the SanDisk HyperBoost software was closed and you'd like to launch it again, double-click on the **SanDisk HyperBoost** icon on the desktop (if displayed) or look for the **SanDisk HyperBoost** application in the computer Start menu. The SanDisk HyperBoost software's Main Screen appears.

SanDisk HyperBoost PC Accelerator (E	eta)	
SanDisk HyperB	oost ™	Options
Acceleration Level:		Status: Learning SanDisk HyperBoost TM is learning which files and applications you use most frequently to make them faster
× 1.0		Acceleration Log
		Start 4/3/2014 12:18:55 AM Now
Your PC is now running 2%	faster	Minute Hour Day Week
Time Saved This is the time you saved not waiting for your PC	During Cu	rrent Session: 00 : 00 : 00 : 00 : 00 WEEKS DAYS HRS WINS SECS
	Cumulativ	e Since First Installed: 00 : 00 : 00 : 00 : 03 WEEKS DAYS HRS MINS SECS
Copyright 2014 SanDisk Corporati	on. <u>Terms of Use</u> Pr	rivacy Statement SanDis

Acceleration Level

Shows by how much your computer's performance has increased thanks to the PC accelerator's operation. The acceleration is showed as a multiple from the baseline performance which is your PC's performance using your Hard Disk Drive (HDD) only, without the use of SanDisk HyperBoost. For example, an acceleration of x1.0 means no acceleration, i.e., your PC performs exactly as it did before you installed SanDisk HyperBoost. An acceleration of x2.0 means that your PC's performance is double than what it used to be prior to use of SanDisk HyperBoost.

The Acceleration Level may depend on the state of the cache, applications in use, and basic PC performance (CPU, HDD, RAM size, USB port type – USB2/3, etc.). The Acceleration Level increases if frequently used data files are accessed - i.e., if you're mostly using the same files and applications. The Acceleration Level decreases if seldom used data files are accessed, i.e. if you're accessing files and opening applications you haven't used in a while.

Status

Shows the current device status:

- **Learning**: SanDisk HyperBoost is learning which files and applications you use most frequently to make them faster.
- Accelerating: SanDisk HyperBoost is optimized to accelerate the files and applications you most frequently use.
- **Disabled**: Data will no longer be served from the SanDisk HyperBoost drive, and your PC's performance will return to the baseline performance levels before using SanDisk HyperBoost.

Acceleration Log

A log of the Acceleration Level as was recorded over time. You may change the graph scale to show the Acceleration Level over the last minute/hour/day/week by clicking on the appropriate tab. Hovering over each dot on the graph will show the exact value for that measurement point and the time it was taken.

Time Saved

By making your PC operate faster, SanDisk HyperBoost saves you time you would have otherwise wasted waiting for your PC to respond. The Main Screen of the SanDisk HyperBoost software displays a time counter that adds up wasted seconds into minutes and even hours.

- **During Current Session** Shows how much time saved since the last you rebooted your system or the last time you cleared the cache.
- **Cumulative Since First Installed** Shows cumulative time saved since you first installed SanDisk HyperBoost.

SanDisk HyperBoost Software Options

SanDisk HyperBoost software options allow you to select various PC accelerator options.

Click on **Options** to access a drop-down menu and select the following options as needed:

- Help
- Check for Updates
- Recalibrate
- Advanced Details
- About
- Tutorial
- Eject
- Exit

Help

This option accesses the SanDisk Technical Support website.

1. Click on **Options** and select **Help**. The SanDisk Technical Support website appears and allows you to search for detailed information, as well as review a list of FAQs. You need an internet connection for this option.

Check for Updates

This option checks if there is an updated version of the software available. In addition, each time you launch the software application, it will automatically check for updates and notify you when they are available.

- 1. Click on **Options** and select **Check for Updates.** On-screen information appears that provides the latest software update information.
- 2. Click **OK** to return to the previous screen, or in case there is one available, click **Yes** and follow the instructions on the screen to download and install the new version.

Recalibrate

This option recalibrates the Performance Acceleration Level. The Performance Acceleration Level is evaluated by measuring the performance of various components of your system including your Hard Disk Drive's performance as well as that of the SanDisk HyperBoost device. Such evaluation is necessary as the Performance Acceleration depends on your own computer's performance standards and components (for example, CPU type and frequency of operation, Hard Disk Drive (HDD), RAM size, USB port speed etc.). This way, the SanDisk HyperBoost software can accurately determine by how much <u>your PC</u> is running faster thanks to using SanDisk HyperBoost.

The Calibration process is normally determined once the software is launched for the first time after installation. However, over time the computer performance standards may change and can be recalibrated to show a more current measurement based on the latest computer standards.

NOTE: It is recommended to close all other applications before recalibrating, as some applications may overload your PC and affect the calibration results.

FOR USE BY SANDISK HYPERBOOST BETA PARTICIPANTS ONLY

Advanced Details

Please see "SanDisk HyperBoost Advanced Details Screen" section in this document.

About

This option provides general product information as well as the software version number.

- 1. Click on **Options** and select **About** to view the About page.
- 2. Click **OK** to return to the previous screen.

Tutorial

This option launches a short Tutorial to let you learn more about SanDisk HyperBoost and how it can help you be more productive and save you time. Please use the arrows at the bottom of the screen to scroll between the slides. The Tutorial can be closed at any time by clicking on the "X" icon on the top right corner of the screen.

Eject

Enables you to put your PC to sleep, or power it down completely, in order to safely eject the SanDisk HyperBoost device. This may be desirable if you have to plug the device out, for example, in order to fit your laptop in a bag. The SanDisk HyperBoost device <u>MUST</u> be reconnected before the computer is turned back on, in order to preserve the cached data that is boosting your PC's performance.

WARNING: If device is not ejected properly, or if the PC is turned on before the SanDisk HyperBoost device is plugged in, all previously cached data will be deleted and your PC will return to its original performance level prior to installation. Be sure to use this option or power off the computer before removing the device.

Exit

This option closes the SanDisk HyperBoost software application. However, the SanDisk HyperBoost PC accelerator is fully operational every time your computer is turned on. Closing the SanDisk HyperBoost software does NOT affect the acceleration operation.

SanDisk HyperBoost Advanced Details Screen

This screen provides additional information about the operation of the SanDisk HyperBoost PC Accelerator product. It also allows you to change settings and control the caching operation. Click on the **Back** button to return to the previous screen.



Capacity Used

This gauge shows what percentage of the SanDisk HyperBoost device is being actively used for storing data. The device will continuously be refreshed with new data files that are most frequently used. Files that are not frequently used will automatically get removed, so you don't have to worry about the cache getting full. Seeing the cache being full is actually a good thing – it shows that the cache is being used and that you're getting the full performance benefits of your SanDisk HyperBoost product.

SanDisk HyperBoost Cache Reads

This shows how much data was read from the SanDisk HyperBoost device and from your Hard Disk Drive over the last hour. The more data read from the SanDisk HyperBoost device, the faster your system performs.

- **SanDisk HyperBoost Reads** signifies the amount of data that was read from the SanDisk HyperBoost device over the last hour.
- **Hard Disk Reads** signifies the amount of data that was read from Hard Disk Drive over the last hour.
- **Cache Hit Ratio** Shows ratio between amount of data read from the SanDisk HyperBoost device and the amount of data read from the computer's Hard Disk Drive.
- **Clear Cache -** This option clears the system cache.

NOTE: This action clears all cached data from the SanDisk HyperBoost device, and will reset system performance to its original level prior to installation. After the cached data has been cleared, the SanDisk HyperBoost PC Accelerator caching engine will automatically restart the learning process and start filling the device with fresh data.

- 1. On the **Advanced Details** Screen select **Clear Cache**. The Clear Cache confirmation screen appears.
- 2. Confirm your choice and select **OK** to clear cache or **Cancel** to exit without clearing cache.
- **Disable/Enable Caching -** This option temporarily disables caching.

NOTE: This action will not clear any previously stored cached data from the SanDisk HyperBoost device.

- 1. On the **Advanced Details** Screen select **Disable Caching**. The Disable Caching confirmation screen appears.
- 2. Confirm your choice and select **OK** to disable caching or **Cancel** to exit without disabling caching.

Additional settings

- **Turn off Windows Write-Cache Buffer Flushing** This option turns off windows write-cache buffer flushing. This option should only be used for benchmark testing and is not recommended for normal operation.
 - 1. On the Advanced Details Screen check the Turn Off Windows Write-Cache Buffer Flushing checkbox.

WARNING: Turning off write-cache buffer flushing may cause some data loss if you experience a power failure and your computer system is not connected to an external power source (i.e. a battery). Please be sure that your computer system is connected to an external power source before you turn off write-cache buffer flushing.

- **Start With Windows** This option automatically launches the SanDisk HyperBoost Main Screen when the computer is started. (The caching operation is not affected by this option.)
 - 1. For an automatic launch upon computer startup, make sure the **Start with Windows** checkbox on the **Advanced Details** Screen is checked.
 - 2. For a manual start, uncheck the **Start with Windows** checkbox on the **Advanced Details** Screen.
- **USB Speed** Shows whether the SanDisk HyperBoost Device is operating in USB2.0 mode (high speed) or in USB3.0 mode (super speed). The PC accelerator works with both USB 2.0 and 3.0 ports, however, for maximum system performance, it is recommended to use a USB 3.0 port.

NOTE: Due to limitation of the Windows operating system, this indication is only available on Windows 8/8.1 operating systems.

System Tray Icon

SanDisk HyperBoost's system tray icon is a providing a fast and convenient way to check the status of your PC acceleration process.

NOTE: Immediately after the installation the system tray icon may be hidden. Click on the tiny "up" arrow to show the hidden icons. Then you can drag the SanDisk HyperBoost system tray icon onto the visible system tray, in order to make it visible at all times.

The system tray icon may have two modes:

• **Green** - This shows that the PC acceleration process is enabled and that everything is operating as expected.



• **Red** - This shows that the PC acceleration process was disabled, or that there was an error that is preventing the acceleration process to run properly. Open the application to learn more.

	SanDisk HyperBoost™ (Caching disabled)	
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Uninstalling the Software

To uninstall the software from your computer, follow these steps:

- 1. Click on your Computer's start menu.
- 2. Select **All programs** (in Windows 7) or click on the down arrow (in Windows 8/8.1) to see all installed applications.
- 3. Under **SanDisk**, you will find an **Uninstall** application.
- 4. Double-click on the **Uninstall** application, and click **Yes** on the User Access Control screen, if one opens up. The SanDisk HyperBoost Installer screen appears. Click on **Next**. The software will be removed from your computer.



Frequently Asked Questions

Please visit <u>SanDisk Knowledgebase</u> for the most frequently asked questions and troubleshooting tips.

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