Links

Computer History

1981 the year that Elsinore Computer Expo and Evergreen Software started in California. These companies belonged to Mr. D

[1981 | Timeline of Computer History | Computer History Museum](#)

[History of general-purpose CPUs - Wikipedia](#)

Stage 1 – Components of a Computer

CPU

[what is a computer cpu - Search (bing.com)](#)

Memory

[Memory (RAM) Articles, Tips & Advice | Crucial.com](#)

[Different Types of RAM (Random Access Memory) Explained (guru99.com)](#)

[Different Types of RAM Explained | Crucial.com](#)

Motherboard

[What Motherboard Do I Have? 4 Ways to Find Out! – Tech4Fresher](#)

[What Does a Motherboard Do? | HP® Tech Takes](#)

Hard Disk

[What is a Hard Drive? | Crucial0ok](#)

[What is a Hard Drive & What is a Hard Drive Used For? (cleverfiles.com)](#)

External / Internal Drives

[Internal vs External HDD: Speed, Reliability, and Cost (partitionwizard.com)](#)

Additional External and Internal Drive Information is at the end of this PDF Document

USB / Serial / Parallel / Ports

Serial and Parallel Ports of Computer | Electrical Academia

Difference between Serial Ports and Parallel Ports (tutorialspoint.com)

what is a usb port - Search (bing.com)

What Is USB-C? An Explainer | PCMag

Optical Drive

What is an Optical Drive & What does an Optical Drive do? (cleverfiles.com)

What Is an Optical Drive? How Your Computer Reads CDs (businessinsider.com)

What is an Optical Drive? - Definition from Techopedia

Input Devices

What is an Input Device? (computerhope.com)

Monitors

Computer Monitor History (computerhope.com)

Keyboard

The History of the Computer Keyboard (thoughtco.com)

History of Computer Keyboards - The QWERTY Keyboard

Typing Through Time: Keyboard History - Das Keyboard Mechanical Keyboard Blog

Apple Keyboard History ⌨ (xahlee.info)

Printer

What are the different Types of Printers? [Complete Guide] (podi.org)

9 Types of Printers and Their Functions - YaleTools

Inkjet printing - Wikipedia

Printer (computing) - Wikipedia

Thermal printing - Wikipedia

Laser printing - Wikipedia

Mouse

[12 Types Of Mouse Pointers (Differences, Appearance) (thecoldwire.com)](#)

[6 Ways to Fix a Disappearing Mouse Pointer in Windows (makeuseof.com)](#)

Modem / Network Card / LAN Card

[Modem - Wikipedia](#)

Digital Camera

[HD Digital Camera for PC - Free Download & Install on Windows PC, Mac (appsplayground.com)](#)

[The History of the Camera | FOREVER Yours](#)

Scanner

[Image scanner - Wikipedia](#)

Stage 2 – Handling and storage techniques of disks, CDs, CDR's, DVDs, Flash/USB drives, and other equivalent optical media devices.

Stage 3 – Explain the difference between read-only, write once, and write-rewrite media. What are examples of each?

Stage 4 – Determine the following on a computer system:
(Processor speed, Storage Capacity, Memory Capacity)

Stage 5 – What are the advantages of increasing processor speed, hard drive storage capacity and RAM on a computer?

Stage 6 – What are the advantages of increasing processor speed, hard drive storage capacity and RAM on a computer?

Internal vs External Hard Drive

Every computer ships with a hard drive—that is the internal hard drive. This kind of hard drive is installed within the laptop or the computer host.

External hard drives are not placed inside a laptop or a computer host—they connect to a computer via a USB or FireWire cable. However, take an external hard drive out of the hard drive case and you will discover the internal hard drive has the same internals structure with the hard drive used in the computer.

The usage is the main difference between the internal hard drive and external hard drive. Other differences like performance, reliability, and cost are discussed in the following content.

Internal vs External Hard Drive Speed

Are internal hard drives faster than external hard drives? The answer is going to Yes.

As we know, an external hard drive connects to a computer through a USB cable. Although some of USB interfaces come with faster speeds but the external hard drives involve an interface change, for example, switching from SATA to USB introduces some latency. As to internal hard drives, they are connected directly to the interface on the motherboard and this allows data to be transferred at a faster rate compared to external hard drives that are connected through USB cables.

Aside from the interface factor, the form factor also makes the internal hard drives faster than the external hard drives.

Generally, HDDs adopt standard spin speeds of 5,400 RPM and 7,200 RPM. Both 2.5-inch hard drives and 3.5-inch hard drives support the two RPMs but it is much easier for the latter to have greater spin speeds due to its higher power consumption and physical dimensions.

External hard drives generally are 2.5-inch drives in SATA to USB enclosures, while there are lots of 2.5-inch and 3.5-inch internal hard drives.

Recommended article: 2.5 VS 3.5 HDD: What Are the Differences and Which One Is Better?

Internal vs External Hard Drive Reliability

Are internal hard drives more reliable than external hard drives?

Internal hard drives and external hard drives feature the same mechanism and therefore there should be no reliability difference between the two kinds of hard drives.

However, external hard drives seem to fail frequently than internal hard drives. Why? The reasons are as follows:

First, internal hard drives are placed inside a computer host or a laptop whereas external hard drives are always placed on a desk. So, the latter is more exposed to physical damage like sudden hit or fall.

Second, the point of failure is not actually the external hard drive but the USB to SATA converter connected to the hard drive inside the hard drive case. So, users mistake this as a failure of the external hard drove itself.

Third, due to the portability, users place them in their bags and carry them around but they are always being naked, without protection, which breaks them easier.

Recommended article: [External Hard Drive Lifespan: How to Prolong It](#).

Internal vs External Hard Drive Price

Are internal hard drives more expensive than external hard drives?

With the same brand and specification, some hard drives are more expensive as an internal hard drive than as an external hard drive. However, sometimes the opposite is found to be true.

Things become tricky when comparing the price between internal hard drives and external hard drives.

Pros and Cons of Choosing Internal and External Hard Drives

Let's see what the pros and cons are if upgrading to a new internal hard drive and adding an external hard drive.

Internal Hard Drive Pros and Cons

Upgrading to a powerful internal hard drive can boost computer performance. Then, internal hard drives are always connected to computers, which means that there is no need to worry about the files not being there when computers start.

However, hard drive installation is required, which might be tricky for some users.

External Hard Drive Pros and Cons

External hard drives are lightweight and portable and you can take it on your business trip. Second, they can be connected to any computer. Third, you do not need to spend time installing the hard drive. Last, using an external hard drive can increase data security.

External hard drives are not just used to expand computer storage. They are also used to add extra protection to computers' internal hard drives as files stored on internal hard drives can be corrupted by viruses and be stolen by hackers. Click here to see more usages of an external hard drive.

The cons of adding an external hard drive are: 1). There is no computer performance improved; 2). External hard drives are easy to lose.

What to Do If You Choose an Internal Hard Drive

If you decide to choose an internal hard drive, how to upgrade to it? You can try MiniTool Partition Wizard. It is a Windows-based program that is expert in managing disk, recovering lost data, cloning disk, etc. The feature Migrate OS to SDD/HDD can help you upgrade to a new internal hard drive without reinstalling Windows.

The tutorial on how to upgrade to a new internal hard drive is below.

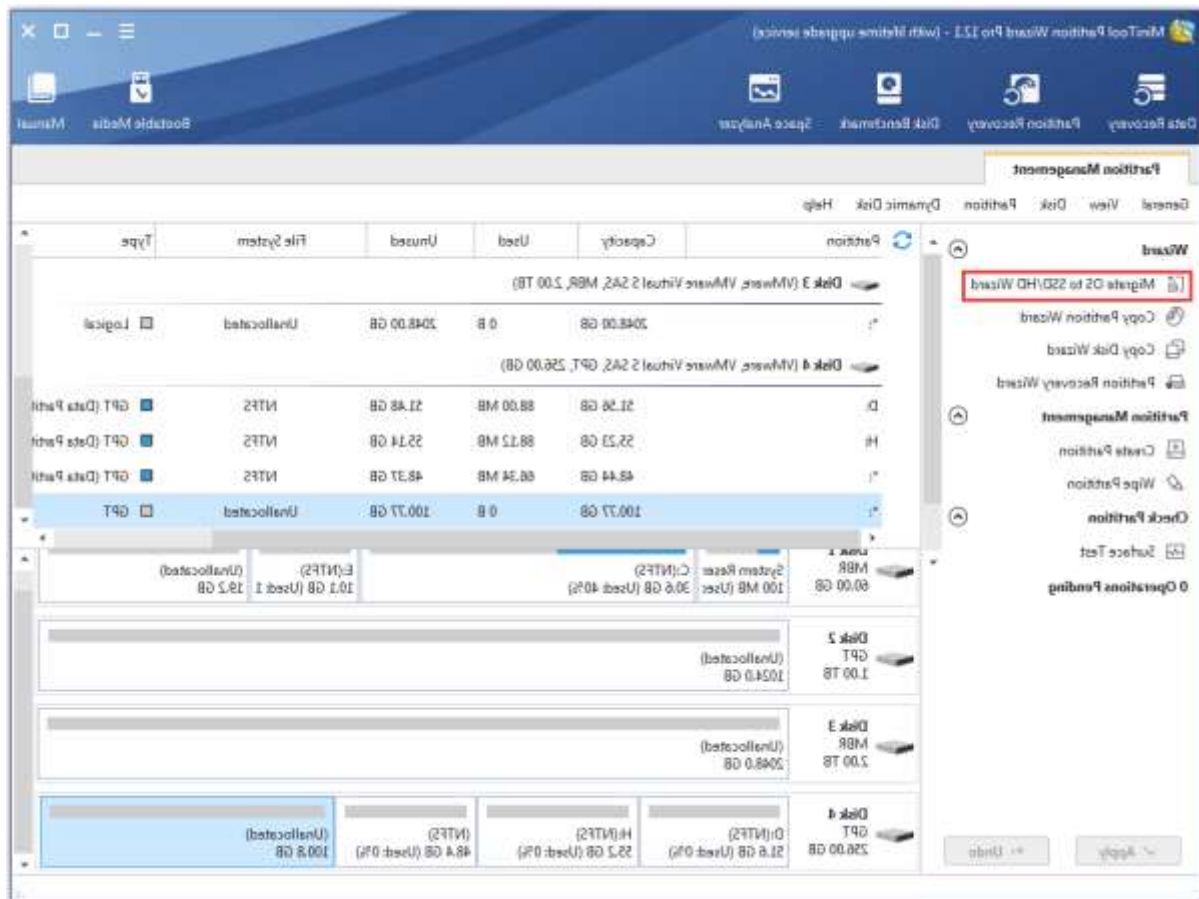**Note:** Make sure the new internal hard drive is compatible with your computer.

Step 1: Connect the internal hard drive through a connection adapter.
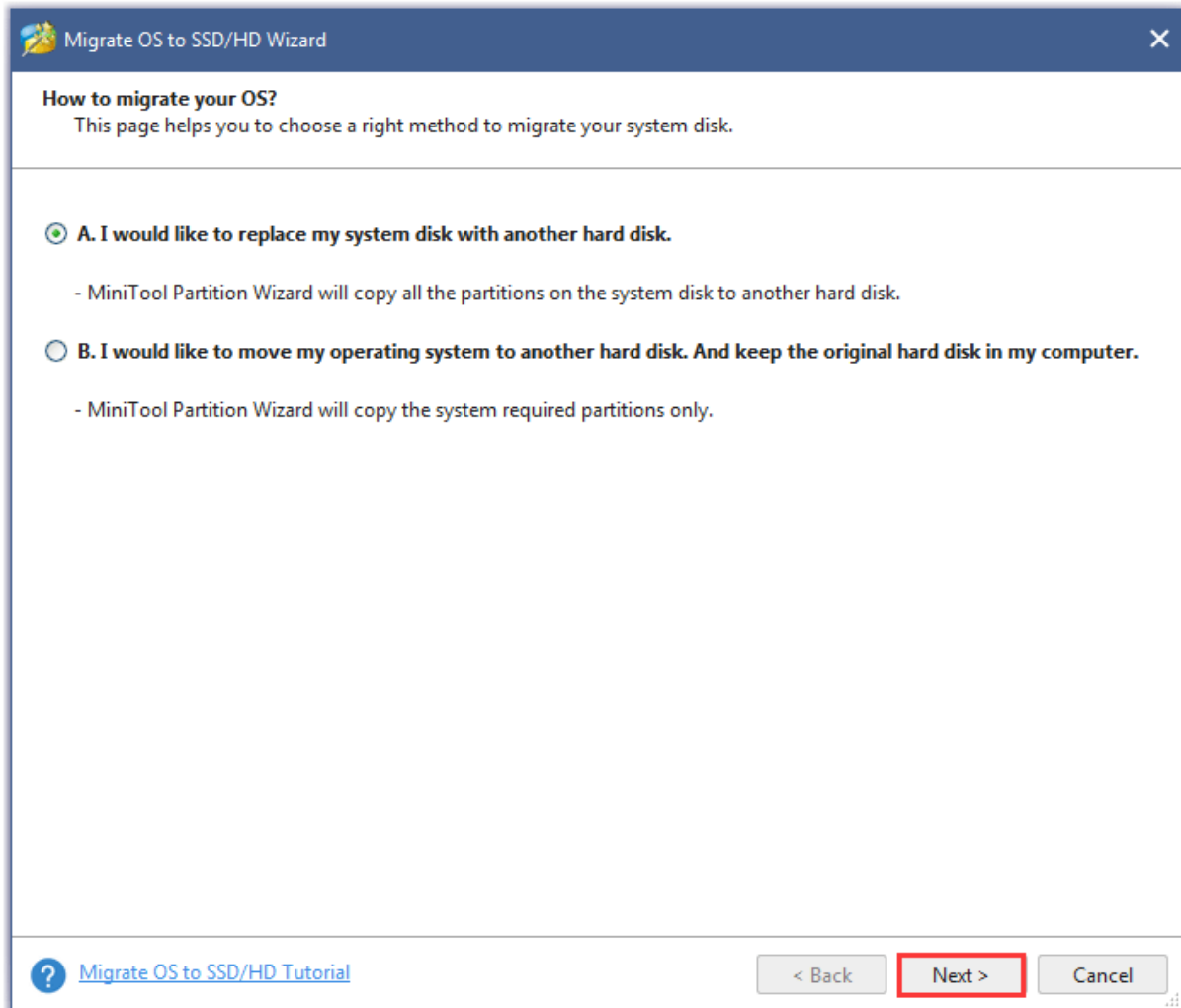**Step 2:** Get MiniTool Partition Wizard by clicking the button below.
Free Download
Step 3: Install the program and launch it to get its main interface.
Step 4: The original and new internal hard drives should be displayed on the disk map. Click the feature **Migrate OS to SSD/HD Wizard** from the left panel.
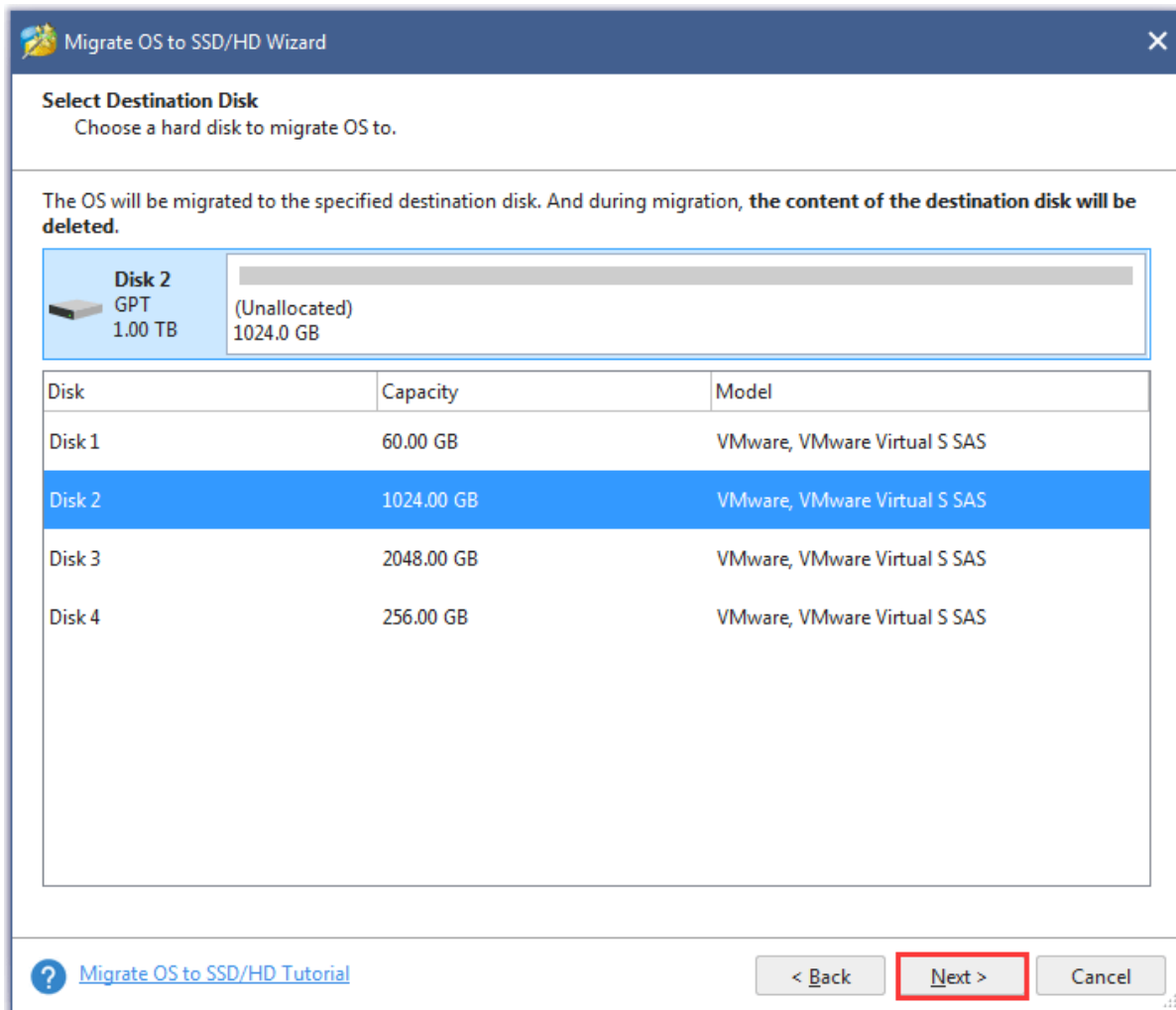
Step 5: Choose a method to migrate the system disk and click the **Next** button.

- Option A is to copy all partitions on the original internal hard drive to the new internal hard drive.

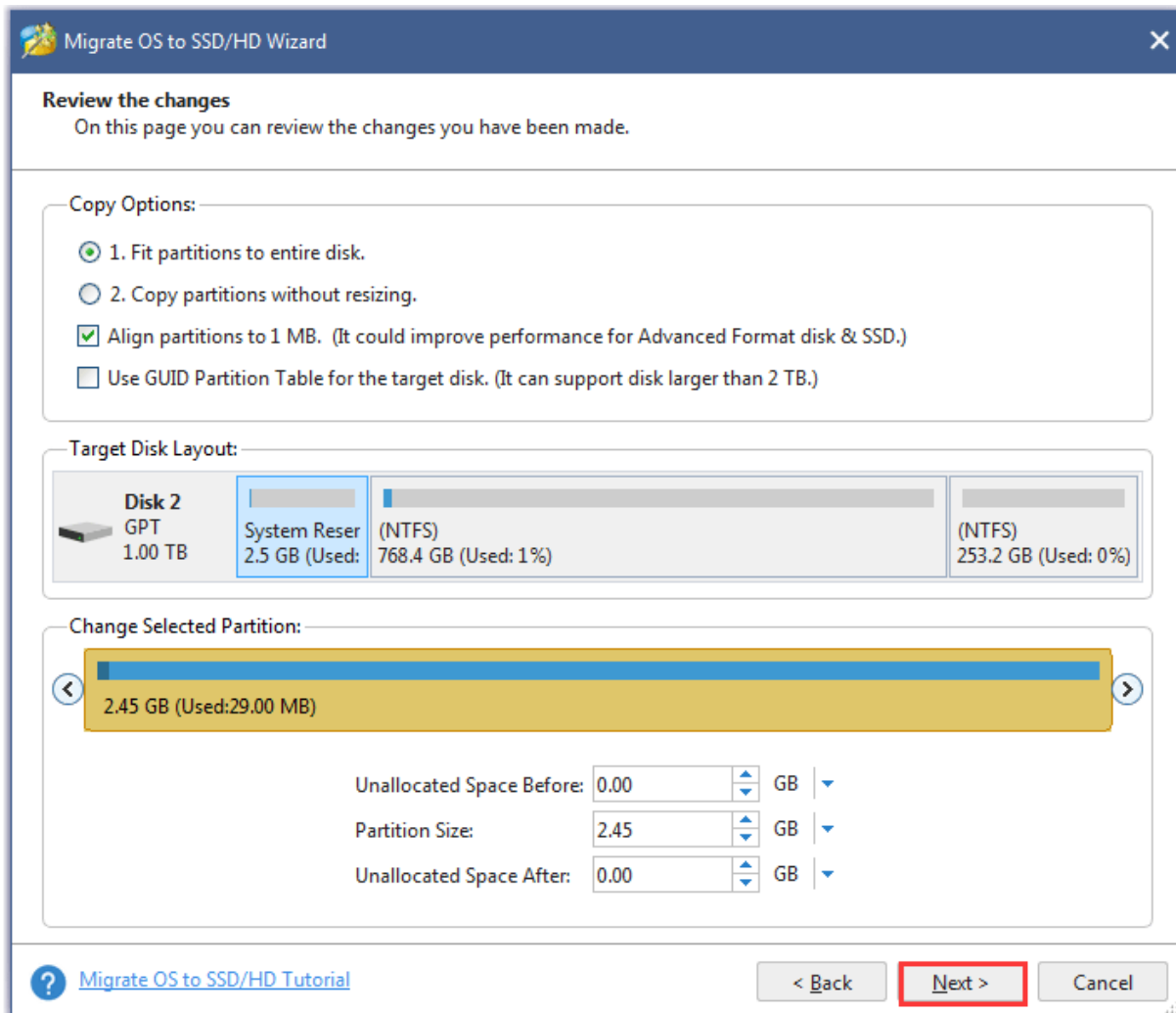- Option B is to just copy the system required partitions only.

Migrate OS to SSD/HD Wizard

How to migrate your OS?
This page helps you to choose a right method to migrate your system disk.

⊙ **A. I would like to replace my system disk with another hard disk.**

    - MiniTool Partition Wizard will copy all the partitions on the system disk to another hard disk.

○ **B. I would like to move my operating system to another hard disk. And keep the original hard disk in my computer.**

    - MiniTool Partition Wizard will copy the system required partitions only.

Migrate OS to SSD/HD Tutorial   < Back   Next >   Cancel

Step 6: Select the new internal hard drive as the target disk and then click the **Next** button.

Step 7: Choose a copy option. Then, click the **Next** button to continue.

- The first option is to automatically make partitions take up the entire new internal hard drive.

- The second option is to copy partitions without resizing to the new internal hard drive.

Step 8: Read the note on the following window and then click the **Finish** button.

Step 9: Click the **Apply** button on the main interface and then click the **Yes** button to apply the changes.