

When Data Loss Occurs

Frequently Asked Questions

Seagate Recovery Services™

What should I do when I experience data loss?

If your drive is making an unusual noise, it probably means that you are experiencing a physical failure (see tech tips about physical versus logical failure). In this case, it is important that you shut down your system immediately and do not power it up again.

Assess the situation calmly. Hasty attempts to fix the problem can often result in further damage and data loss. Some best practices include:

- Stop writing to any media (including hard drives) that may be involved in data loss. Note that running most software (for example, Internet Explorer) writes new data to your drive and may possibly overwrite the lost data you are seeking.
- Eliminate the simplest possible causes, such as loose cables or bad device drivers. Write down all symptoms of failure and all recent actions and events involving your computer.
- If you determine physical damage to be the cause of your lost data, avoid do-it-yourself solutions. Do-it-yourself software makes use of the problem drive, potentially causing complete failure and further data loss.
- Contact Seagate Recovery Services to understand your options for professional in-lab recovery services.

What is data recovery?

Data recovery is a highly technical, highly labour-intensive process of obtaining usable data from inaccessible storage media and corrupted or deleted file sets from a variety of digital storage media and devices. The process is carried out in a controlled environment using Class 100 clean rooms and Class 10 horizontal



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flow clean benches to protect client media and all recovery equipment from contamination. (All Seagate Recovery Services clean air facilities undergo annual certification testing to ensure that they meet or exceed acceptable air flow uniformity and particle count standards.)

Storage systems can fail in many different ways; however, the data stored on them is not always completely lost. The specific technique used to recover the information depends on the type of failure (file corruption, virus attack, mechanical or electrical problem, or human error). Sometimes these problems occur in combination. Seagate Recovery Services has full-service lab facilities that are prepared to address all failure modes using the industry's most advanced recovery technology and procedures.

What are the types of data failure that occur?

Logical. The media has not been physically damaged. A file may have been deleted, reformatted or contaminated with a virus. In these situations, data generally is easier to recover, as long as the data has not been overwritten by subsequent usage.

Physical. The media has been damaged, or experienced a mechanical or electronic failure. Fire or water damage can result in a physical failure or, in the case of a disk drive, part of the mechanism such as a spindle or head may have failed.

What types of media can Seagate recover data from?

Seagate Recovery Services performs data recovery from:

- Hard disk drives (all brands and interfaces)
- SSD and flash media
- USB/FireWire drives
- Tape storage (LTO, DLT, AIT, DAT, Travan)
- RAID (0, 1, 3, 4, 5, 6, 10, etc.)
- Servers and virtual machines (VMware, MS Hyper-V)

How can I prevent further loss of data?

To avoid further damage to your media and prevent extended data loss:

- Do not perform any operation on the storage device that will cause physical damage to the device or the data on it.
- Do not write to any of the files on the device or add additional files.
- Do not format the drive.

- Do not modify the partitions on the drive (using FDISK or any other partitioning software).
- Do not try to open the device to see what is wrong. (Hard drives are particularly sensitive to contamination and should only be opened in a microscopically clean environment.)

Cease using the hard drive or storage device that requires recovery. If your drive is making unusual noises or showing other obvious signs of distress, shut it down immediately and do not power it up again. Before you forget them, write down all symptoms of the failure and all recent actions and events involving your computer. Contact Seagate Recovery Services.

Note:

- If you have a backup, evaluate how current it is and if it will fulfil your needs. Consider restoring your backup to a different system in case you find that critical files are missing or outdated.
- If you seek help from a trusted local specialist, remember that professional data recovery is a skill learned from practice and requires highly specialised tools.
- While data recovery can seem expensive because it is a highly technical and labour-intensive process, recreating your data may be significantly more expensive. Also, the turnaround time for data recovery is usually much faster than the time it would take to recreate your lost files from scratch.

Does Seagate Recovery Services have a confidentiality policy?

Seagate Recovery Services provides a completely secure environment to help ensure the privacy of your valuable information. We will protect the confidentiality of your data against unauthorised disclosure using the highest degree of care and by adhering to stringent ISO 9001:2000 security standards.

What is the turnaround time for data recovery?

Seagate Recovery Services offers unique recovery service options to suit your specific needs depending on the urgency of your situation. Our service offering is tailored to both individual consumers and businesses.

Turnaround times vary and depend on many factors, including:

- The degree to which the data is fragmented or corrupt
- The degree of media damage and how long it takes to read the entire drive to make a mirror image
- The degree of client urgency

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Data recovery cases can be expedited during regular business hours. Seagate Recovery Services also offers a Critical Response Service that will work on your case around the clock.

Table 1. Seagate Recovery Services Turnaround Time per Service Level

Service Level	Turnaround Time
Consumer Remote Recovery (single drive)	1 to 3 business days
Enterprise Remote Recovery (RAID, VMware, MS Hyper-V)	1 to 3 business days
In-Lab Select Recovery (Recover 1 file type)	2 to 3 weeks (1 to 5 business days for emergency level)
In-Lab Total Recovery (Recover all files)	2 to 3 weeks (1 to 5 business days for emergency level)
In-Lab Express Recovery	1 to 2 weeks
In-Lab Priority Recovery	1 to 5 business days
In-Lab Critical Recovery	Anytime: 24 hours a day, 7 days a week
Onsite Critical Recovery	Anytime: 24 hours a day, 7 days a week where offered

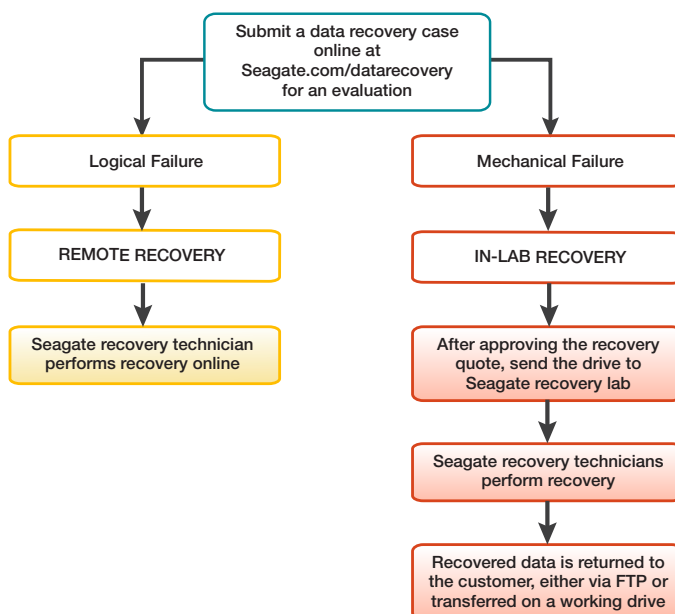
What is the evaluation process and how long will it take?

Once we receive your media, our team of highly experienced technicians will determine the extent of your media's damage and data loss. Seagate Recovery Services will assess the amount of work or parts necessary to get the drive working well enough to read the data. Seagate Recovery Services is committed to getting your data back in the timeframe agreed for the recovery.

What is the cost of data recovery services?

Seagate Recovery Services views each data recovery case as unique. Data recovery costs depend on the extent of the damage and amount of labour involved in rebuilding the drive in order to recover the lost data. Seagate Recovery Services will evaluate the drive and provide a quote. If it is a Seagate drive under warranty, the data recovery cost is a fixed price of US\$399 per recovery.

What is the data recovery process?



How do I package and send my hard drive for in-lab recovery?

You only need to send us your hard drive for data recovery. For internal drives, remove the drive from the computer (seeking expert help if necessary) and send only the drive to one of our lab facilities. It is extremely important that your hard drive be packaged carefully to avoid any additional damage during shipment. Enclose the drive in a clamshell container or an ESD (electrostatic discharge) bag. For external drives, send the drive in its enclosure along with its cables and power supplies.

If possible, send the drive in its original manufacturer's packaging, or pack the drive with solid foam padding inside a sturdy corrugated cardboard box. Use of foam packing pellets, bubble wrap or newspaper is not recommended.

How can I prevent data loss?

The best way to prevent data loss is to have a current backup on a reliable medium. External USB hard drives are a convenient backup solution for desktops and workstations. They are easy to install, compatible with all modern desktop operating systems and portable from one machine to another.

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Newer desktop computers are also frequently capable of using RAID technology on ATA or SATA hard drives. RAID is a feature that has been available for many years in server operating systems with expensive disc controllers, but more recently it has also been appearing on desktop machines. Desktop RAID uses multiple ATA or SATA hard drives to store multiple copies of the same data. Read more about RAID on our Technical Support website.

In a business environment, large SATA hard drives have found acceptance as nearline storage. The SATA 6Gb/s protocol brings performance that is comparable to Serial Attached SCSI (SAS) and Fibre Channel, but at a lower cost.

To learn more about data loss best practices, refer to our comprehensive Data Loss Prevention document.

Can all lost data be retrieved?

There are occasions when damage to the data is permanent and a complete recovery is not possible. However, it is rare that absolutely no data is retrievable. Using the unique Seagate Recovery Services recovery equipment and procedures, our expert teams are able to recover lost data successfully even in extreme conditions. Should we be unsuccessful in recovering the data you need due to severe media damage, you will not be charged a recovery fee.

Can I use disc repair or software recovery utilities?

Before you choose a software utility for recovering lost data, consider the value of your data. Software can recover data successfully in some instances where a logical failure has occurred. In this case, we recommend Seagate File Recovery Software.

Note:

- Never use a repair or recovery utility program unless it allows you to save the repaired or recovered data to alternative storage media.
- Most importantly, **do not format the drive or change the partitions**. Either action can result in permanent loss of your data.
- If your drive makes any unusual noises, do not attempt to use any type of utility software. Clicking, buzzing, scraping and other metallic noises may be indicative of mechanical failure. Shut down the computer to avoid further damage to the drive and its data. Send your drive to Seagate Recovery Services for professional recovery in our Class 100 cleanroom environments.

How can I learn more about hard drives?

Visit the Seagate Knowledge Base at <http://knowledge.seagate.com/>

What are the payment options?

Payment is due in full upon completion of your successful recovery, prior to release of data (whether shipped, picked up or downloaded), unless special arrangements are agreed upon prior to the recovery process. Seagate Recovery Services accepts:

- Bank transfers
- VISA, MasterCard and American Express
- In the US and Canada, we also welcome company cheques and Interac

www.seagate.com