# Archiving Sensitive Digital Information

Written by Benjamin Fortier
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## Introduction

Archiving and managing personal data can seem like a daunting task, but when you factor in how priceless some of these items can be, it's not worth leaving it up to chance. Mechanical failures, unexpected disasters, and outdated equipment all put data at risk. This guide will give you a brief overview on how to achieve the minimal level of backup in a timely, efficient manner that will allow you to expand with further, more robust archiving capabilities.

## Theory

The foundation of effective personal data archiving lies in the principle that digital information is inherently vulnerable to a range of threats, including hardware malfunction, environmental hazards, and technological obsolescence. By recognizing that no single device or medium can guarantee perpetual data integrity, individuals are motivated to implement systematic backup strategies. Therefore, many people seek a minimal, yet structured, approach to data management—employing redundancy and timely updates—significantly decreases the risk of permanent data loss and forms a scalable basis for future, more comprehensive archiving solutions.

## Principles of Operation

Data preservation is based on the primary principles of accessibility and integrity. What shapes data archiving includes the following sub-principles: prioritizing and categorizing data, redundancy, and availability.

Prioritizing data allows you to build a hierarchy of the most important data. Do your photos hold more value than your collection of music? When you determine which types of data are critical, you can build a timeline of when and how you will archive them. In the same way, categorizing data can determine what type of hardware is best suited for archiving. For this process, we will categorize data in the following way[1]:

- Digital Photographs
- Digital Audio
- Digital Video
- Digital Records
- Other Digital Information (Websites, emails, and other forms of data.)

Data redundancy forms a robust protection around your data. Once you've identified the most critical pieces of data, back up at least three copies in three different places and in three different formats.

Availability is an often-overlooked principle in data archiving. This covers initial and regular testing of archive availability, ensuring compatible hardware/software for various formats, and confirming data can be accessed promptly.

## List of Equipment and Materials

- Access to physical storage devices (internal or external hard drives, external drives, flash drives, discs)
- Access to cloud storage (Amazon Photos, Google Drive, Microsoft OneDrive)
- External hard drives
- Device readers (SD Cards, DVD players, USB cables)

## Warnings

- External storage devices can fail unexpectedly due to physical damage, hardware malfunctions, or manufacturing defects, leading to potential data loss. Use care when storing and handling these devices.
- Viruses or malware can be transferred to or from external devices if they are not properly scanned and protected.
- Secure your physical media; data on external drives may be susceptible to theft or loss if the devices are misplaced, stolen, or left unsecured.
- Improper ejection or sudden removal of storage devices, especially during transfers, can result in corrupted or unreadable data.

## Procedure

1. Identify which data category is most critical to you. (Refer to the Principles of Operation for these categories.)
2. Identify where the primary critical data resides. This could be a phone, internal hard drive, or CD.
3. Choose at least two different types of storage to back up the primary data:
    a. CD/DVD/Blu-Ray
    b. USB flash drive
    c. Hard drive (Internal or external)
    d. SD Card
    e. Cloud storage
4. Document the file category type, where the primary files reside, where they will be archived, and the data of the transfer. The following table is an example of how your documentation might look.

| File Category Type | Primary Location | Archive Location A | Archive Location B | Date of Transfer |
|---|---|---|---|---|
| Photos | Internal Hard Drive (Family Computer) | USB Flash Drive (64gb Kingston) | CD - Labeled "Family Photos" | 09-24-2025 |
| Mortgage Documents | Internal Hard Drive (Office Computer) | Cloud Storage (Google) | USB Flash Drive (32gb Sandisk) | 09-24-2025 |
| Videos | Phone | DVD - Labeled "Videos from Phone" | Cloud Storage (Microsoft) | 09-24-2025 |

5. Once the data is transferred, test to ensure that it can be read in its assigned format.

## Glossary

1. **Archiving**: The process of storing data in a secure and organized manner for long-term preservation.
2. **Cloud Storage**: A service that allows data to be stored on remote servers accessed from the internet.
3. **Data Integrity**: The accuracy and consistency of data over its lifecycle.
4. **Digital Records**: Electronic documents that contain information, such as text, images, or data.
5. **Environmental Hazards**: External factors like natural disasters or extreme conditions that can damage data storage devices.
6. **Hardware Malfunction**: Failure of physical components of a computer or storage device.
7. **Redundancy**: The practice of creating multiple copies of data and storing them in different locations to ensure data preservation in case of failure.
8. **SD Card**: A type of memory card used for storing data in portable devices.
9. **Technological Obsolescence**: The condition where technology becomes outdated and no longer supported or used.
10. **USB Flash Drive**: A small, portable storage device that uses flash memory and connects to a computer via USB port.

## Reference List

[1]
"Preserving Your Digital Memories." www.digitalpreservation.gov (accessed Sep. 23, 2025).

[2]
L. Kurtz, "Insider's Guide: Photo Organizing," *www.appo.org*, 2015. www.appo.org (accessed Sep. 23, 2025).