Trinity Lutheran College

Strategies for Backup and Restore

Introduction

This instruction document provides three techniques for backup and recovery of personal documents. The techniques can be used concurrently for best protection. These instructions are for use by anyone who wishes to secure their electronic documents against loss.

Potential causes of loss include:

- Loss of hardware
- Deletion of files due to malware
- Accidental deletion or change by owner or a threat agent

Policy and Implementation

This addresses the following security policy:

- Users shall protect using protect electronic documents against loss.

The implementation of this policy is as follows:

- Through the use of redundancy, users will back up their files. This is performed at least quarterly. This will allow restoration of files in the case of accidental loss or loss due to threat agents.

Programs

The following instructions use the following programs and hardware.

- External Hard Drive
  - 250 GB or greater suggested
- Duplicati
  - This free program can be downloaded from http://www.duplicati.com/
- Online Storage Programs – Suggestions include:
  - Windows Sky Drive
    - This is a free program accessible from: http://windows.microsoft.com/en-us/skydrive/download
  - Google Drive
    - This is a free program accessible from: https://drive.google.com/

Manual back up

Manually backing up of documents on a regular basis is simple and allows great control of document restoration. As documents are changed and replaced, archived copies show change history. If a section is accidently deleted, it can be retrieved from the archives. File copies can be saved regularly to the same file system, though this only protects against accidental corruption of a single file. To protect against all forms of loss, all personal documents should be saved to an external location on a regular basis (ideally quarterly, but more during times of increased file creation).

Please note that this form of back up will only protect personal documents. Emails and program files will not be protected.

Step 1: Connect external hard drive

Most external drives connect to the computer via USB ports. The first time the hard drive is connected, device drivers may need to be installed. Most drives will handle this automatically, though user approval will probably be sought. Device drivers contain procedures for connecting computers and devices (Smith 53).

A. The hard drive can be opened from the File Explorer. The drive letter will probably be D or E.

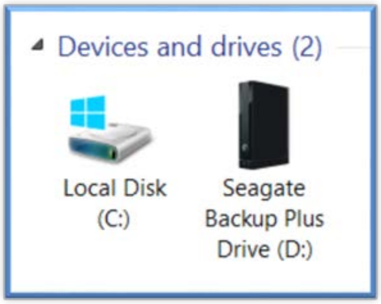


Figure 1: External Hard drive is D.

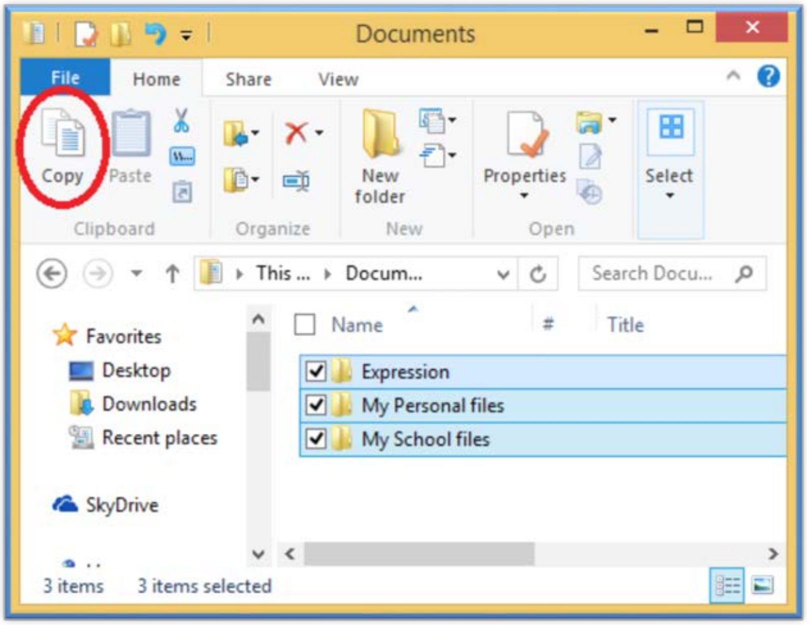
B. Create a folder to hold backup documents.
C. Open it on the desktop.

Step 2: Choose and move files

Most recent versions of Windows stores personal files in a file/library called *My Documents*. This file can found in File Explorer.

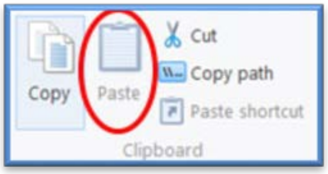
A. Highlight to select all the files to transfer to backup. Only the top level needs to be copied. Nested files will automatically be transferred.

B. Copy.



C. Open to the desktop the back up location from step 1:B.

D. Paste the copied files to this location.



E. Repeat as necessary for additional files.

Step 3: Recover files

Should loss of a document, file, or many files occur, follow these steps to recover the them.

A. Attach backup drive.

B. Use file explorer or search tool to find the files for recovery.

C. Copy the file and paste it back to the file location of choice.

Note: the recovered files will be as they were when they were saved to the backup drive. Changes may need to be redone. This is why regular backup is very important and time saving.

Synced Back up

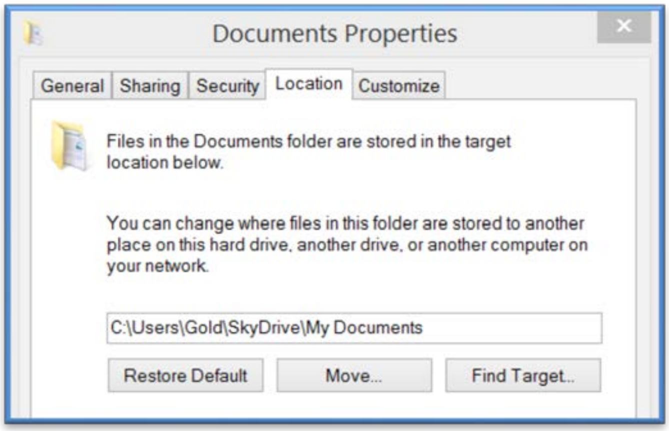
Synced back up provides excellent protection against loss of hardware. Every time a computer is connected to the internet, files slated for sync are automatically updated to the internet storage location (cloud).

Note: Synced backup only protects against loss of hardware

Step 1: Set up with a sync storage provider

This only needs to be done once. This example shows Windows Sky drive. All Microsoft emails come with Sky Drive storage. These include hotmail, outlook, msn, and live.

A. In a web browser, go to http://windows.microsoft.com/en-us/skydrive/computer
B. Click on *Download* in the top bar.
C. Download the program and then sign in to use your account.
D. To direct all documents to save to Skydrive automatically, right click *on My Documents* and select *Properties.*
E. Go to Location tab.



Files in the Documents folder are stored in the target location below.

You can change where files in this folder are stored to another place on this hard drive, another drive, or another computer on your network.

C:\Users\Gold\SkyDrive\My Documents

F. Direct the documents to be stored in the appropriate file in SkyDrive, following the example in step above. Replace “Gold” with the appropriate User name.
G. Now, all files stored in My Documents will be protected against loss up to the point that internet connection was last made.
H. Repeat step D-F for photos, favorites, etc.

Step 2: Recover Files

In case of hardware loss, follow these steps.

A. Log into https://account.live.com.
B. **Change your password**. This must be done so that if the lost hardware is used, changes or corruptions will not sync to the saved files.

C. Follow the steps from Step 1: Set up with a sync storage provider.
D. The documents should be back where they belong.

Automatic incremental backup using Duplicati.

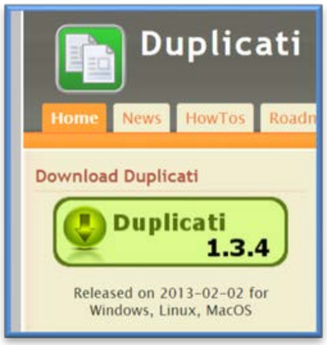
Duplicati is a free incremental encrypted backup solution. This stores the back up in an external location. For example uses Google Docs. Windows Sky Drive is not used because it is tied to the computer hard drive in such a way that if malware affected the files, it would also corrupt Sky Drive.

Duplicati protects against loss of hardware, and deletion of files due to malware.

Step 1: Download, install, and set up Duplicati

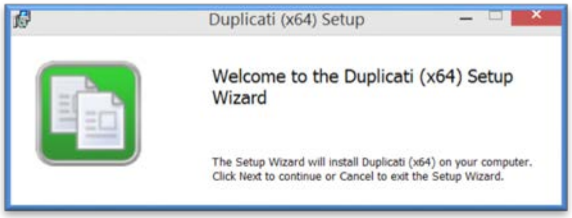
This only needs to be done once.

A. Duplicati can be found at http://www.duplicati.com/
B. Click in the green oval in the top left to go to the download page. The version may not be 1.3.4 any longer.



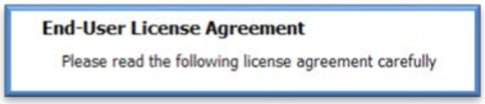
Released on 2013-02-02 for Windows, Linux, MacOS

C. Scroll down to choose and click the correct operating system.
D. It will download and then begin to install. Follow the steps to install.



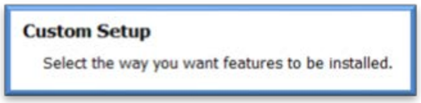
Welcome to the Duplicati (x64) Setup Wizard

The Setup Wizard will install Duplicati (x64) on your computer. Click Next to continue or Cancel to exit the Setup Wizard.



End-User License Agreement

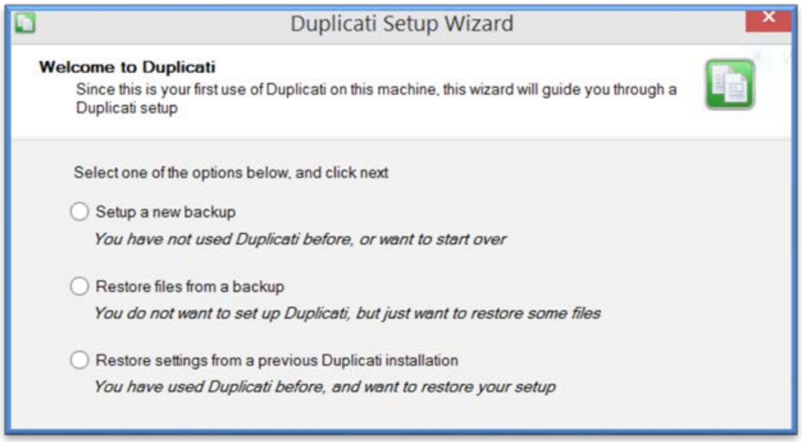
Please read the following license agreement carefully



Custom Setup

Select the way you want features to be installed.

E. Once the file is installed, open it.



Duplicati Setup Wizard

Welcome to Duplicati

Since this is your first use of Duplicati on this machine, this wizard will guide you through a Duplicati setup

Select one of the options below, and click next

○ Setup a new backup

You have not used Duplicati before, or want to start over

○ Restore files from a backup

You do not want to set up Duplicati, but just want to restore some files

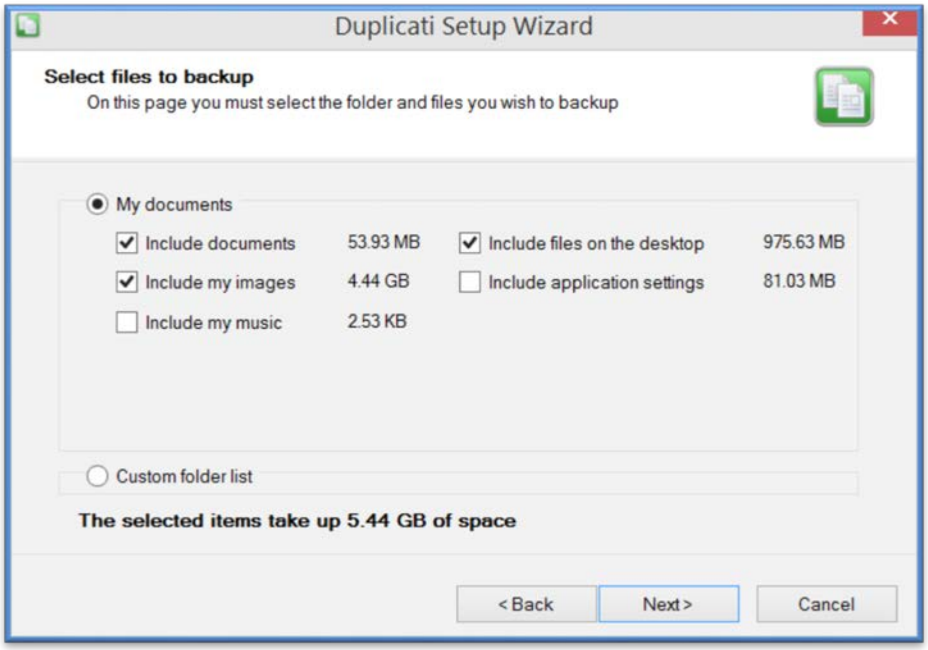
○ Restore settings from a previous Duplicati installation

You have used Duplicati before, and want to restore your setup

F. Select "Setup a new backup".

G. Answer the prompt "Backup name".

H. Select the files you wish to backup.



Duplicati Setup Wizard

Select files to backup

On this page you must select the folder and files you wish to backup

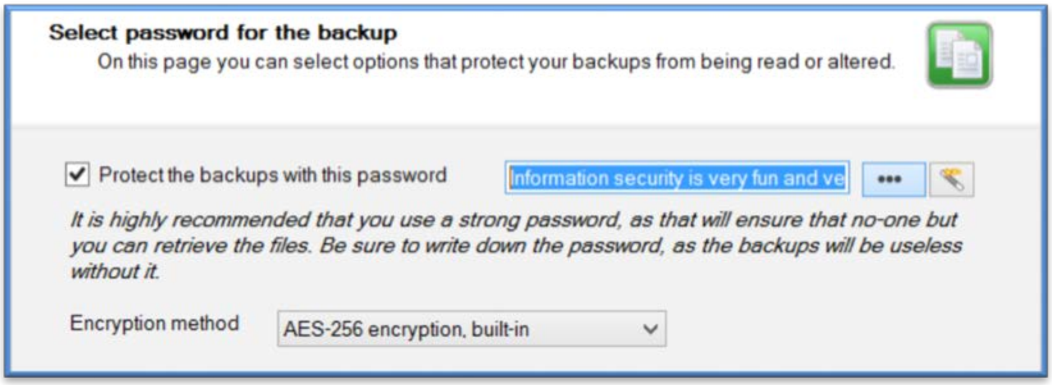
● My documents

☑ Include documents	53.93 MB	☑ Include files on the desktop	975.63 MB
☑ Include my images	4.44 GB	□ Include application settings	81.03 MB
□ Include my music	2.53 KB		

○ Custom folder list

The selected items take up 5.44 GB of space

I. Select a strong password. For this example I’m using:
Information security is very fun and very important.



Select password for the backup
On this page you can select options that protect your backups from being read or altered.

☑ Protect the backups with this password: Information security is very fun and ve

It is highly recommended that you use a strong password, as that will ensure that no-one but you can retrieve the files. Be sure to write down the password, as the backups will be useless without it.

Encryption method: AES-256 encryption, built-in

J. It then asks where I want to store the backups. I’m going to choose Google Docs
K. Enter username and password. Choose a collection name and create collection.
L. Next is advanced settings where a user can adjust the program. These are optional.
M. Confirm and close the form.
N. The backup will begin automatically.

Step 2: Recover files

In case of file loss, follow these steps.

A. Log into https://security.google.com/settings/security?pli=1 (or the account setting for your storage location)
B. **Change your password**. This must be done so that if the lost hardware is used, changes or corruptions will not sync to the saved files.

C. Open Duplicati on the computer to receive the restored files.
    a. The program may need to be reinstalled following steps A thru D in Step 1: Download, install, and set up Duplicati)
D. When the setup wizard is open select “Restore files from a backup”.
E. Select “Restore files from an existing backup”.
F. Select the backup date you want to restore to.
G. Select a folder on the computer to restore to.
H. If only certain files are to be restored, check the box next to “Restore only the items selected below.”
I. Confirm the summary and press “Finish”.

Conclusion

Redundancy in file storage is very important. Many workplaces perform remote backups of employee file systems automatically, but the restoration also involves the whole system. This means that restoring just one document is not feasible. Manual or self-controlled backup is important for file control. Users should consult with managers about which forms of backup is allowed in each workplace; they might be held to compliance laws, regulations and rules like HIPPA, GLBA, and FERPA (Smith 171).

Works Cited

Smith, Richard. *Elementary Information Security.* Burlington: Jones and Bartlett Learning, 2013. Print.