A Quick Guide to Data Encryption for Dentists

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January 28, 2014

As dentists, we certainly want to protect our patients' personal and financial information. The new HIPPA and HITECH guidelines mandate that we do this or face some severe sanctions if our data is lost or stolen and we have not taken some specific steps to secure that data. One of those specific steps that need to be taken is to encrypt our patient data.

There are many encryption systems available to do this, ranging from free and easy to expensive and complex. The one I will describe below is the free and easy one but, from a data security standpoint, may not be the strongest method available. Before using it, you need to answer the following question for yourself: Just how secure does my data need to be?

If you were running some financial institution where there was a reasonable chance that "bad people" might be trying to access your client data on a regular basis, you would probably want the absolute, most secure encryption system you could get.

If, on the other hand, you are a dentist your primarily concern may be to make it difficult for a casual thief (who was really only interested in stealing the computer, not the data) to access that data. You might also be concerned that you meet the "letter of the law" and your encryption is adequate to meet HIPPA and HITECH requirements.

The encryption method I describe below, in my humble opinion, meets this "dental encryption standard." And it is certainly much better than the totally unencrypted system most dentists now use.

However, you might also want to do one or more of the following:

1. Talk, and perhaps work with, an IT person who holds some relevant Microsoft IT certifications about networking and server software
2. Read the on-line articles on the subject linked at the end of this article
3. Talk to your current IT person about his/her recommendation and specific experience with encryption (good idea to also check references!).
4. Read about a couple other free alternatives:
    a. TrueCrypt (open source)
    b. BitLocker (Microsoft; included with some versions of operating systems)

Also keep in mind that you may not want to get your encryption advice from a dentist (me!) ☺

In spite of all the caveats, are you ready to DIY (Do It Yourself)?

By are the simplest free way to encrypt your data is to use Microsoft's Encrypted File System (EFS) which has been included in all versions of their operating systems since XP. Here are the very easy steps:

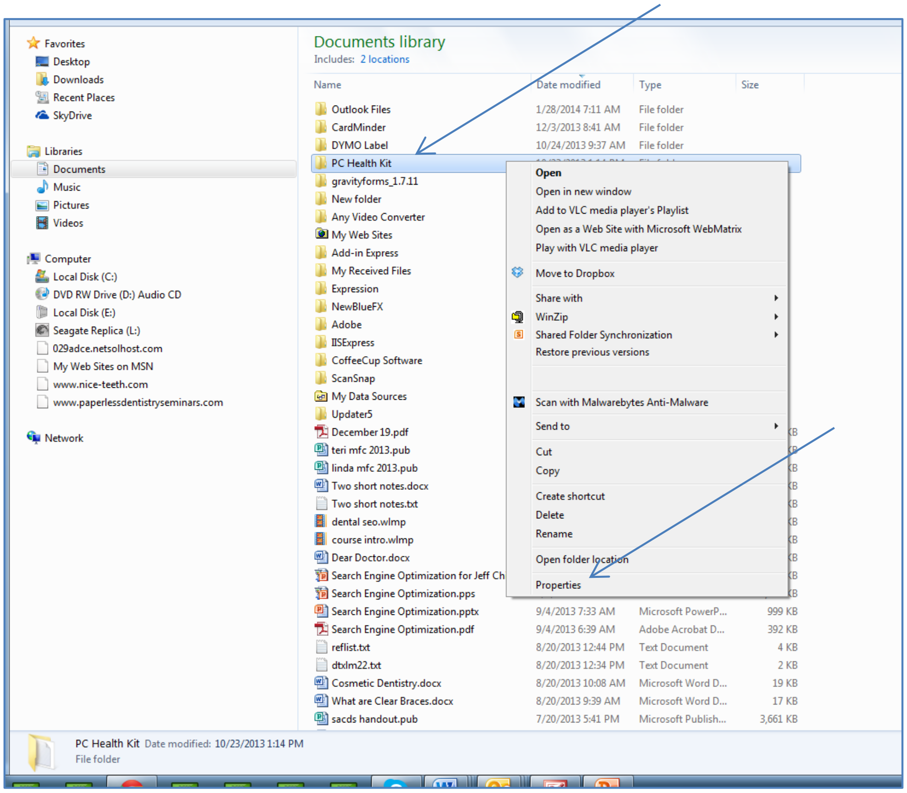
1. Be sure your computer is password protected; strong passwords preferred. Be absolutely sure you record this password outside your computer in a secure manner. If you lose this password, you lose access to your data! You will be up the proverbial feces creek without a paddle!
2. Using Explorer, right click on the directory or file you wish to encrypt. First try this on a file or directory you do not care about so you can practice encrypting and unencrypting and get comfortable with the process
3. After right mouse clicking on the directory, go to properties at the bottom of the window and click on "advanced."
4. Select the box marked "encrypt contents to secure data"
5. Click OK
6. If prompted, click "apply changes to this folder, subfolders and files"

7. Depending upon the size of the folder, the encryption may take a few seconds to many minutes. When it is complete, the folder will show up in green in Explorer.
8. All done. That's it!
9. To unencrypt, just reverse the process.
10. Do not forget your password!

A couple of other points:

1. If someone cracks your computer password and can access your computer, they can access your patient data. This is why strong passwords are necessary.
2. If someone takes the hard drive out of your computer, they will not be able to access anything you have encrypted on that drive without your password
3. If you copy or backup encrypted data to an unencrypted device, it becomes unencrypted. This means your backup devices, such as external hard drives or USB drives, must also be encrypted. (BTW, neither of these backup methods is recommended.)
4. Computer practices change rapidly. I am writing this in January, 2014. I will have most likely changed my mind about these things within a year. You need to stay informed and update / change your procedures on a regular basis.

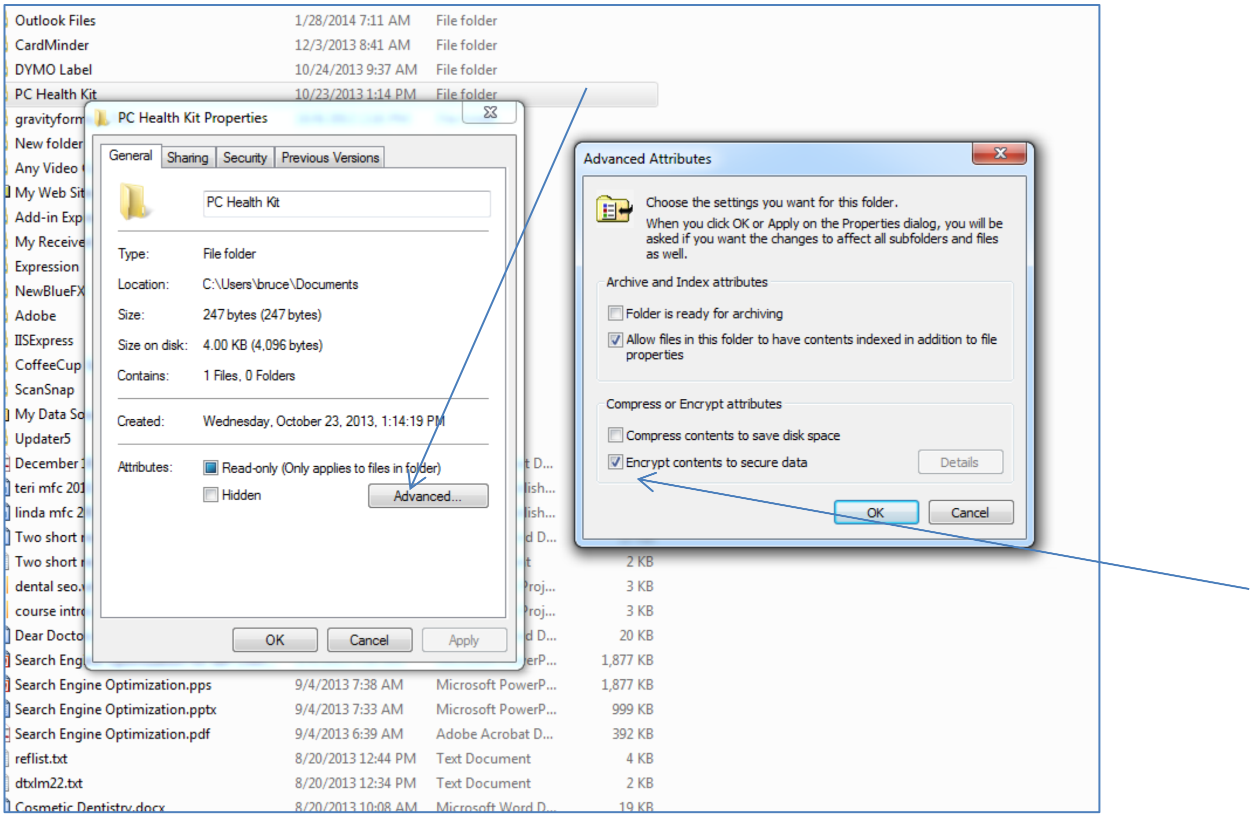
Here are some step by step illustrations:



Documents library
Includes: 2 locations

Name	Date modified	Type	Size
Outlook Files	1/28/2014 7:11 AM	File folder	
CardMinder	12/3/2013 8:41 AM	File folder	
DYMO Label	10/24/2013 9:37 AM	File folder	
PC Health Kit			
gravityforms_1.7.11			
New folder			
Any Video Converter			
My Web Sites			
Add-in Express			
My Received Files			
Expression			
NewBlueFX			
Adobe			
IISExpress			
CoffeeCup Software			
ScanSnap			
My Data Sources			
Updater5			
December 19.pdf			
teri mfc 2013.pub			
linda mfc 2013.pub			
Two short notes.docx			
Two short notes.txt			
dental seo.wlmp			
course intro.wlmp			
Dear Doctor.docx			
Search Engine Optimization for Jeff Ch			
Search Engine Optimization.pps			
Search Engine Optimization.pptx	9/4/2013 7:33 AM	Microsoft PowerP...	999 KB
Search Engine Optimization.pdf	9/4/2013 6:39 AM	Adobe Acrobat D...	392 KB
reflist.txt	8/20/2013 12:44 PM	Text Document	4 KB
dtxlm22.txt	8/20/2013 12:34 PM	Text Document	2 KB
Cosmetic Dentistry.docx	8/20/2013 10:08 AM	Microsoft Word D...	19 KB
What are Clear Braces.docx	8/20/2013 9:39 AM	Microsoft Word D...	17 KB
sacds handout.pub	7/20/2013 5:41 PM	Microsoft Publish...	3,661 KB

PC Health Kit Date modified: 10/23/2013 1:14 PM
File folder



Outlook Files 1/28/2014 7:11 AM File folder
CardMinder 12/3/2013 8:41 AM File folder
DYMO Label 10/24/2013 9:37 AM File folder
PC Health Kit 10/23/2013 1:14 PM File folder
gravityform
New folder
Any Video
My Web Sit
Add-in Exp
My Receive
Expression
NewBlueFX
Adobe
IISExpress
CoffeeCup
ScanSnap
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Search Engine Optimization.pps 9/4/2013 7:38 AM Microsoft PowerP... 1,877 KB
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reflist.txt 8/20/2013 12:44 PM Text Document 4 KB
dtxlm22.txt 8/20/2013 12:34 PM Text Document 2 KB
Cosmetic Dentistry.docx 8/20/2013 10:08 AM Microsoft Word D... 19 KB

PC Health Kit Properties

PC Health Kit

Type: File folder
Location: C:\Users\bruce\Documents
Size: 247 bytes (247 bytes)
Size on disk: 4.00 KB (4,096 bytes)
Contains: 1 Files, 0 Folders

Created: Wednesday, October 23, 2013, 1:14:19 PM

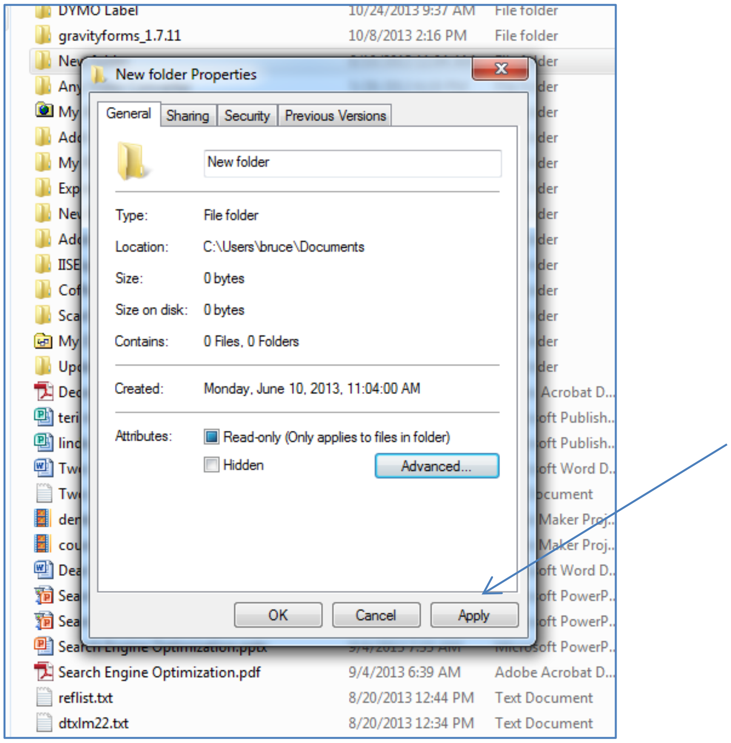
Attributes: ■ Read-only (Only applies to files in folder)
□ Hidden

Advanced Attributes

Choose the settings you want for this folder.
When you click OK or Apply on the Properties dialog, you will be asked if you want the changes to affect all subfolders and files as well.

Archive and Index attributes
□ Folder is ready for archiving
☑ Allow files in this folder to have contents indexed in addition to file properties

Compress or Encrypt attributes
□ Compress contents to save disk space
☑ Encrypt contents to secure data



DYMO Label 10/24/2013 9:37 AM File folder
gravityforms_1.7.11 10/8/2013 2:16 PM File folder
Ne der
Any der
My der
Add der
My der
Exp der
Ne der
Add der
IISE der
Cof der
Sca der
My der
Up der
Dea Acrobat D...
teri oft Publish...
linc oft Publish...
Tw oft Word D...
Tw ocument
der Maker Proj...
cou Maker Proj...
Dea oft Word D...
Sea oft PowerP...
Sea oft PowerP...
Search Engine Optimization.pptx 9/4/2013 7:33 AM Microsoft PowerP...
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reflist.txt 8/20/2013 12:44 PM Text Document
dtxlm22.txt 8/20/2013 12:34 PM Text Document

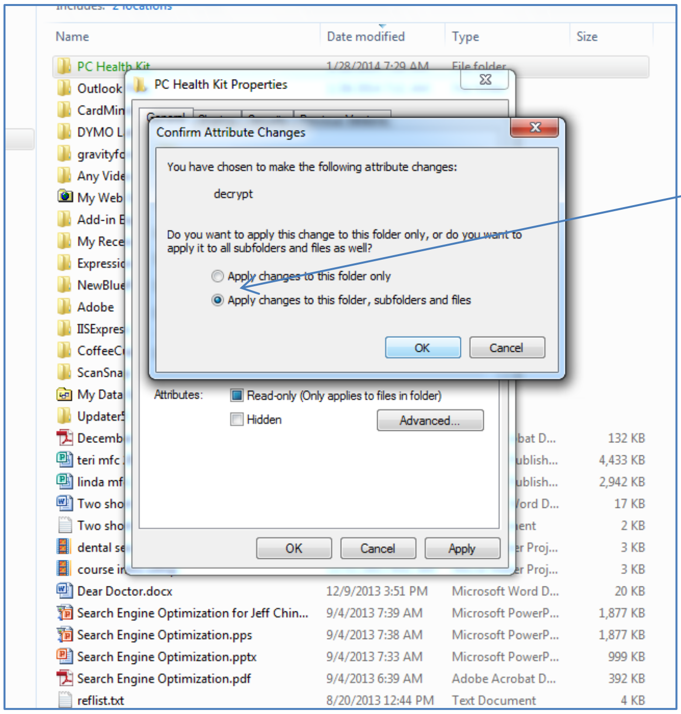
New folder Properties

New folder

Type: File folder
Location: C:\Users\bruce\Documents
Size: 0 bytes
Size on disk: 0 bytes
Contains: 0 Files, 0 Folders

Created: Monday, June 10, 2013, 11:04:00 AM

Attributes: ■ Read-only (Only applies to files in folder)
□ Hidden



Name	Date modified	Type	Size
PC Health Kit	1/28/2014 7:29 AM	File folder	
Outlook			
CardMin			
DYMO L			
gravityfo			
Any Vide			
My Web			
Add-in E			
My Rece			
Expressio			
NewBlue			
Adobe			
IISExpres			
CoffeeC			
ScanSna			
My Data			
Updater5			
Decemb		bat D...	132 KB
teri mfc		ublish...	4,433 KB
linda mf		ublish...	2,942 KB
Two sho		ord D...	17 KB
Two sho		ent	2 KB
dental se		r Proj...	3 KB
course in		r Proj...	3 KB
Dear Doctor.docx	12/9/2013 3:51 PM	Microsoft Word D...	20 KB
Search Engine Optimization for Jeff Chin...	9/4/2013 7:39 AM	Microsoft PowerP...	1,877 KB
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PC Health Kit Properties

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☐ Hidden

Confirm Attribute Changes

You have chosen to make the following attribute changes:

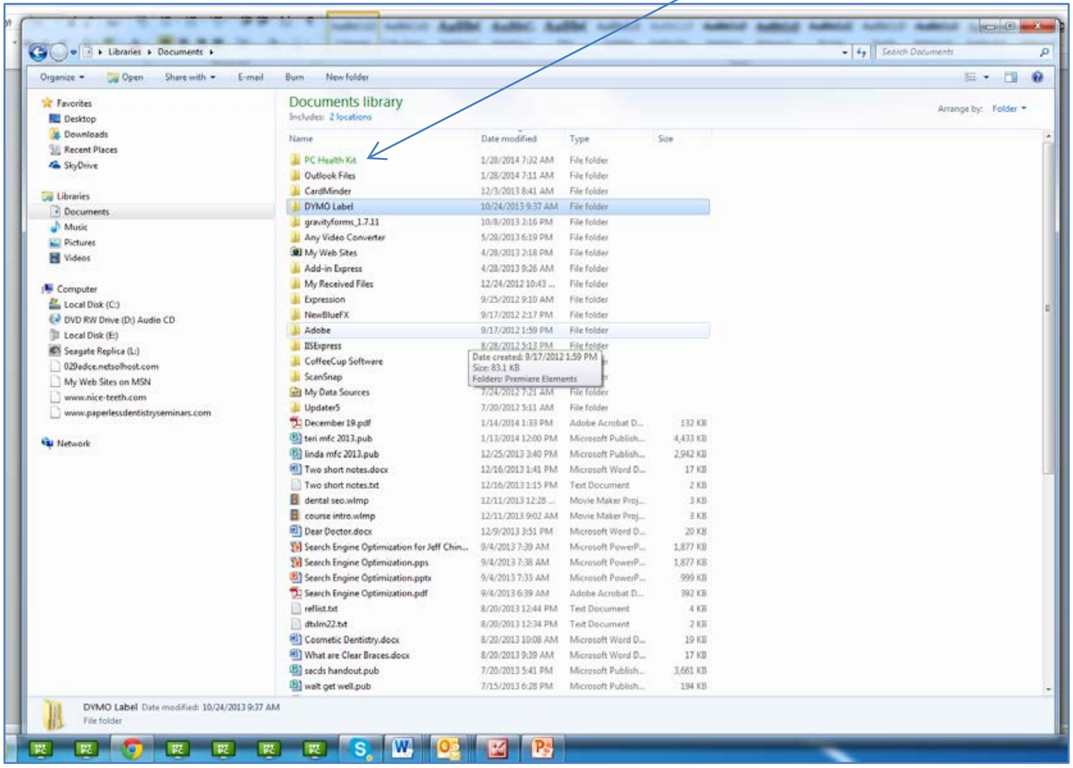
decrypt

Do you want to apply this change to this folder only, or do you want to apply it to all subfolders and files as well?

○ Apply changes to this folder only

● Apply changes to this folder, subfolders and files

Green indicates it is encrypted



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Expression	9/25/2012 9:10 AM	File folder	
NewBlueFX	9/17/2012 2:17 PM	File folder	
Adobe	9/17/2012 1:59 PM	File folder	
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CoffeeCup Software			
ScanSnap			
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walt get well.pub	7/15/2013 6:28 PM	Microsoft Publish...	194 KB

Date created: 9/17/2012 1:59 PM
Size: 83.1 KB
Folders: Premiere Elements

DYMO Label Date modified: 10/24/2013 9:37 AM
File folder

Additional suggested reading:
http://www.tomshardware.com/reviews/bitlocker-truecrypt-encryption,2587.html
http://fm.schmoller.net/2012/10/using-truecrypt-instead-of-efs-to-encrypt-data.html