INFORMATION SECURITY GUIDELINE

How to Encrypt Files Using Common Applications

Contents

Introduction

1. This guideline has been issued by the Chief Information Officer to supplement the Encryption Requirements standard. Compliance with this guideline is recommended, but not mandatory. Questions about this guideline may be referred to information.security@ubc.ca.
2. This document explains how to use the following commonly used applications to securely encrypt files:

Product[1]	Version	Purpose
Microsoft Office	2007 or later for Windows, 2008 only for Mac[2]	Encrypt Word, Excel & other MS Office files for e-mail or storage
7-Zip	9.2.0	Compress and encrypt files to attach to e-mail
AES Crypt	3.08	Encrypt files to attach to e-mail
WinZip	9 or later	Compress and encrypt files to attach to e-mail
WinZip Courier	3.5	Compress and encrypt files to attach to e-mail

[1] Technical specifications for these encryption tools can be found in Appendix A.
[2] Microsoft Office 2011 for Mac does not encrypt files; see the following links for Word & Excel specific information.

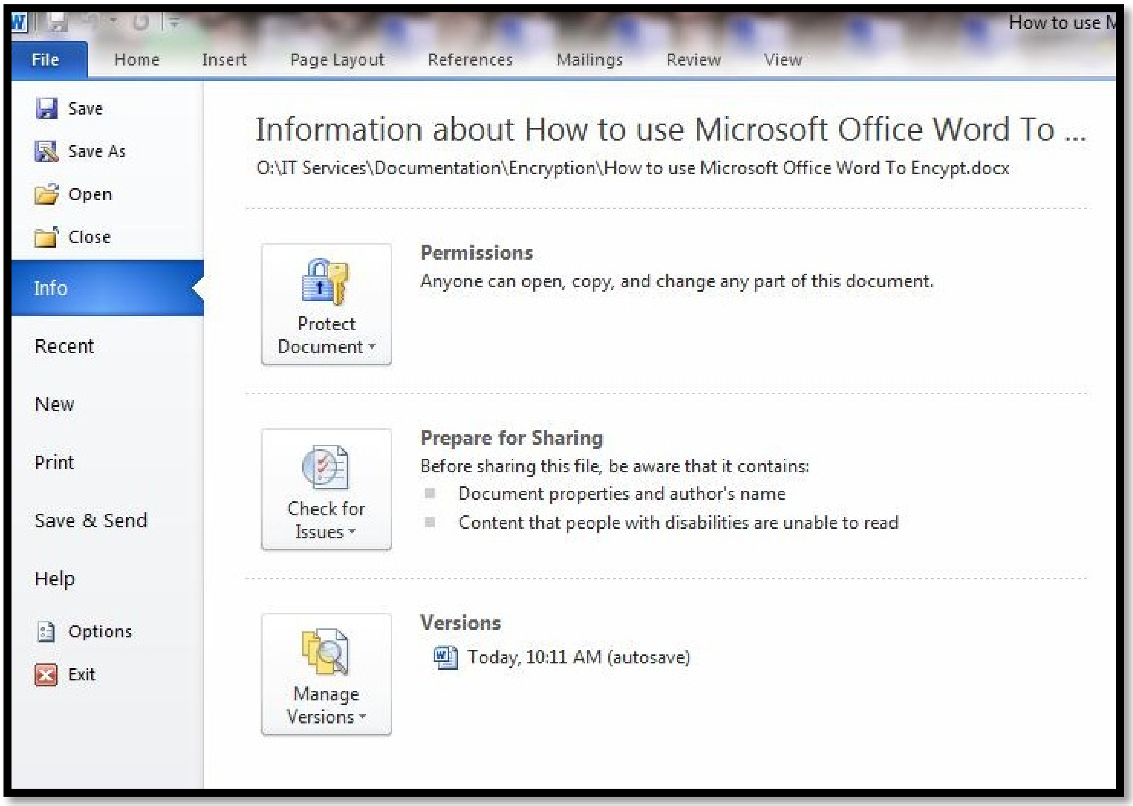
3. Other applications (e.g. OpenOffice, LibreOffice) that provide encryption features should be used with caution as they have not been assessed by UBC IT for the strength of their security.
4. Applications that store information on servers located outside of Canada (e.g. Google Docs, Office 365, DropBox) should never be used for files containing Personal Information because this type of information must always be stored in Canada.

Safely Delivering the Encryption Password to the Recipient

5. When encrypted files are shared with third parties, they will need the Password or Passphrase to open the file. The Password/Passphrase should be provided to the recipient by telephone, regular mail or in person. It should not be shared via e-mail as this is not a secure method of communication. If the individual is receiving encrypted files on a regular basis, it is acceptable to use the same Password/Passphrase for all of these files, as long as it is changed at least once per year.

How to Encrypt Files Using Microsoft Office 2007 or Newer

6. Microsoft Word, Excel, and PowerPoint 2007 (or newer, with the exception of Office 2011 for Mac – see section 2 above) encrypts information using a “Protect” function; this function does not simply password protect a file, but fully encrypts it using AES encryption. The instructions below show how to encrypt a Word document; Excel and PowerPoint has very similar functionality.
    a. With your document open, select the “File” tab.
    b. Click “Info” then select the “Protect Document” button with the downward pointing arrow.



Information about How to use Microsoft Office Word To ...

O:\IT Services\Documentation\Encryption\How to use Microsoft Office Word To Encypt.docx

Permissions

Anyone can open, copy, and change any part of this document.

Prepare for Sharing

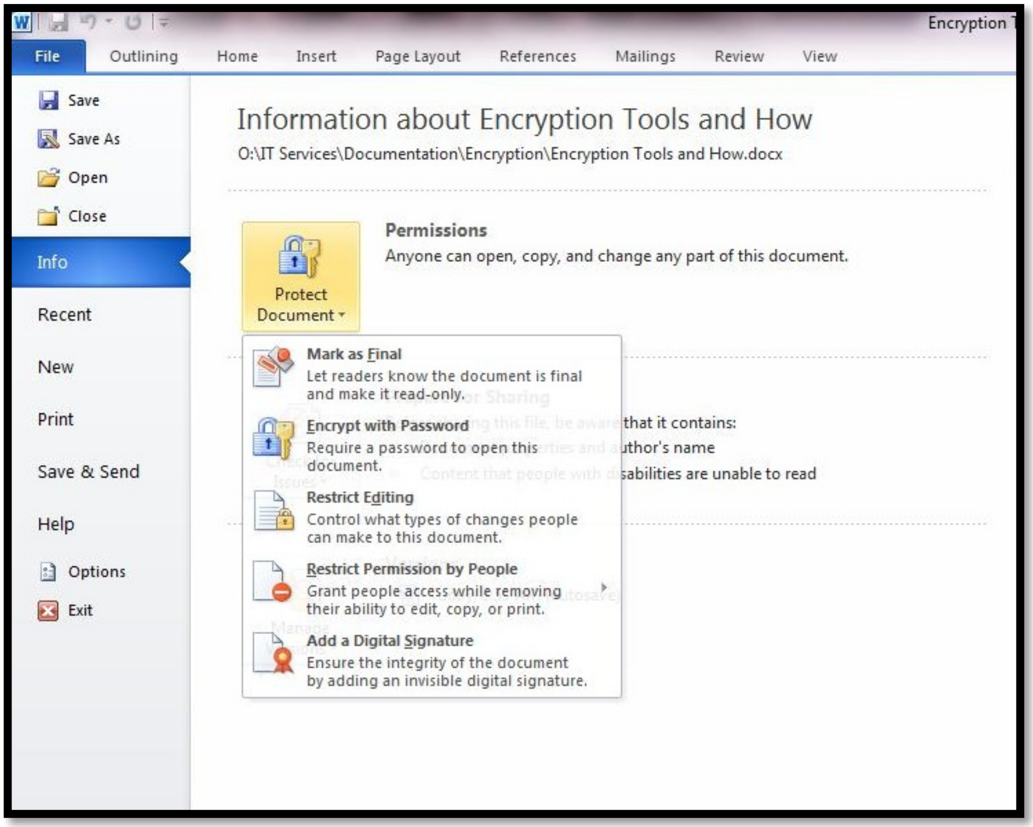
Before sharing this file, be aware that it contains:

- Document properties and author's name
- Content that people with disabilities are unable to read

Versions

Today, 10:11 AM (autosave)

c. Select the “Encrypt with Password” entry from the dropdown list, which will then prompt you for a password.



Information about Encryption Tools and How

O:\IT Services\Documentation\Encryption\Encryption Tools and How.docx

Permissions

Anyone can open, copy, and change any part of this document.

Mark as Final
Let readers know the document is final and make it read-only.

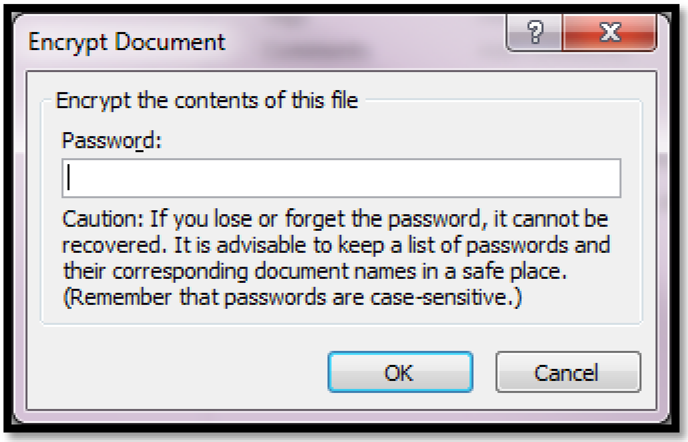
Encrypt with Password
Require a password to open this document.

Restrict Editing
Control what types of changes people can make to this document.

Restrict Permission by People
Grant people access while removing their ability to edit, copy, or print.

Add a Digital Signature
Ensure the integrity of the document by adding an invisible digital signature.

that it contains:
thor's name
sabilities are unable to read

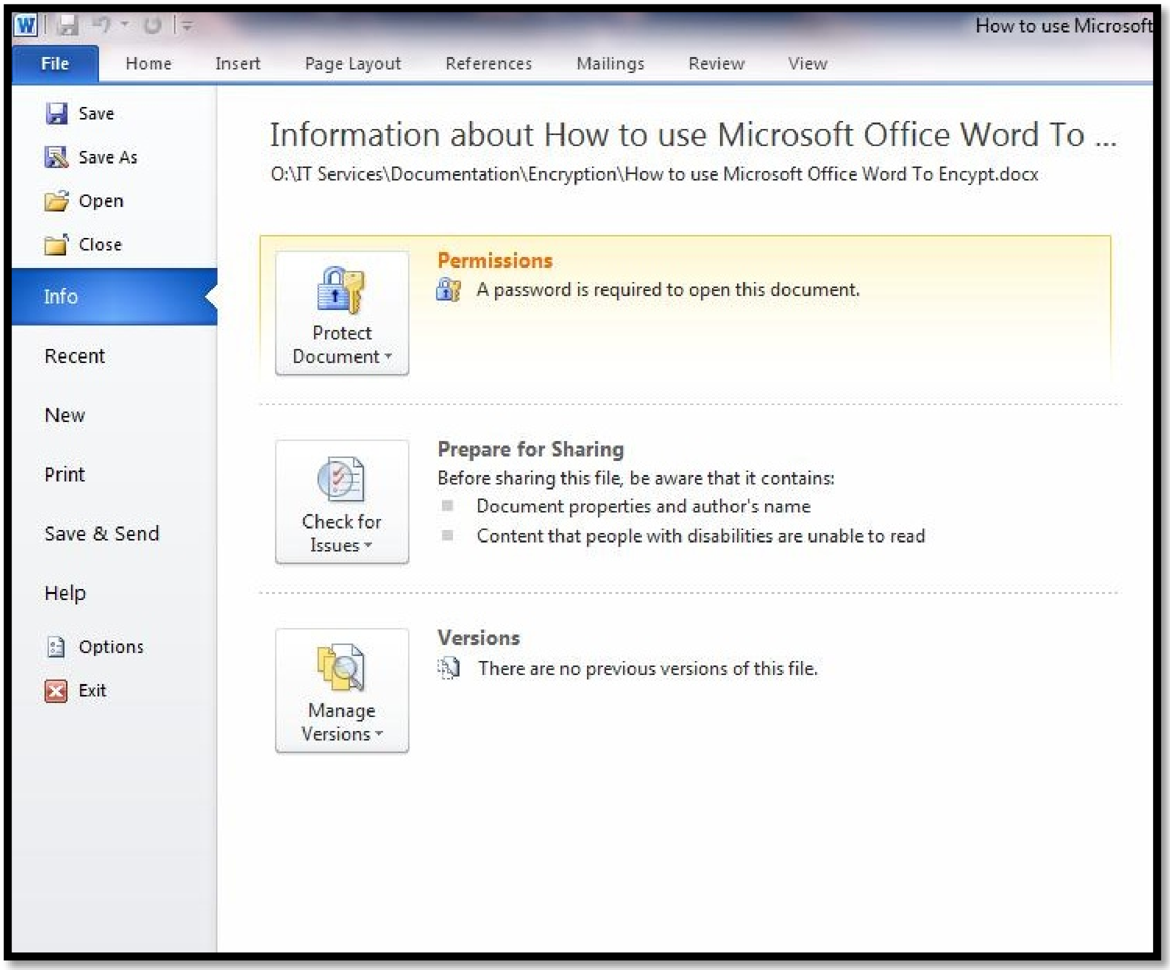


Encrypt the contents of this file

Password:

Caution: If you lose or forget the password, it cannot be recovered. It is advisable to keep a list of passwords and their corresponding document names in a safe place. (Remember that passwords are case-sensitive.)

d. Once the file is encrypted, the password will be required to open the file.



Information about How to use Microsoft Office Word To ...

O:\IT Services\Documentation\Encryption\How to use Microsoft Office Word To Encypt.docx

Permissions

A password is required to open this document.

Prepare for Sharing

Before sharing this file, be aware that it contains:

- Document properties and author's name
- Content that people with disabilities are unable to read

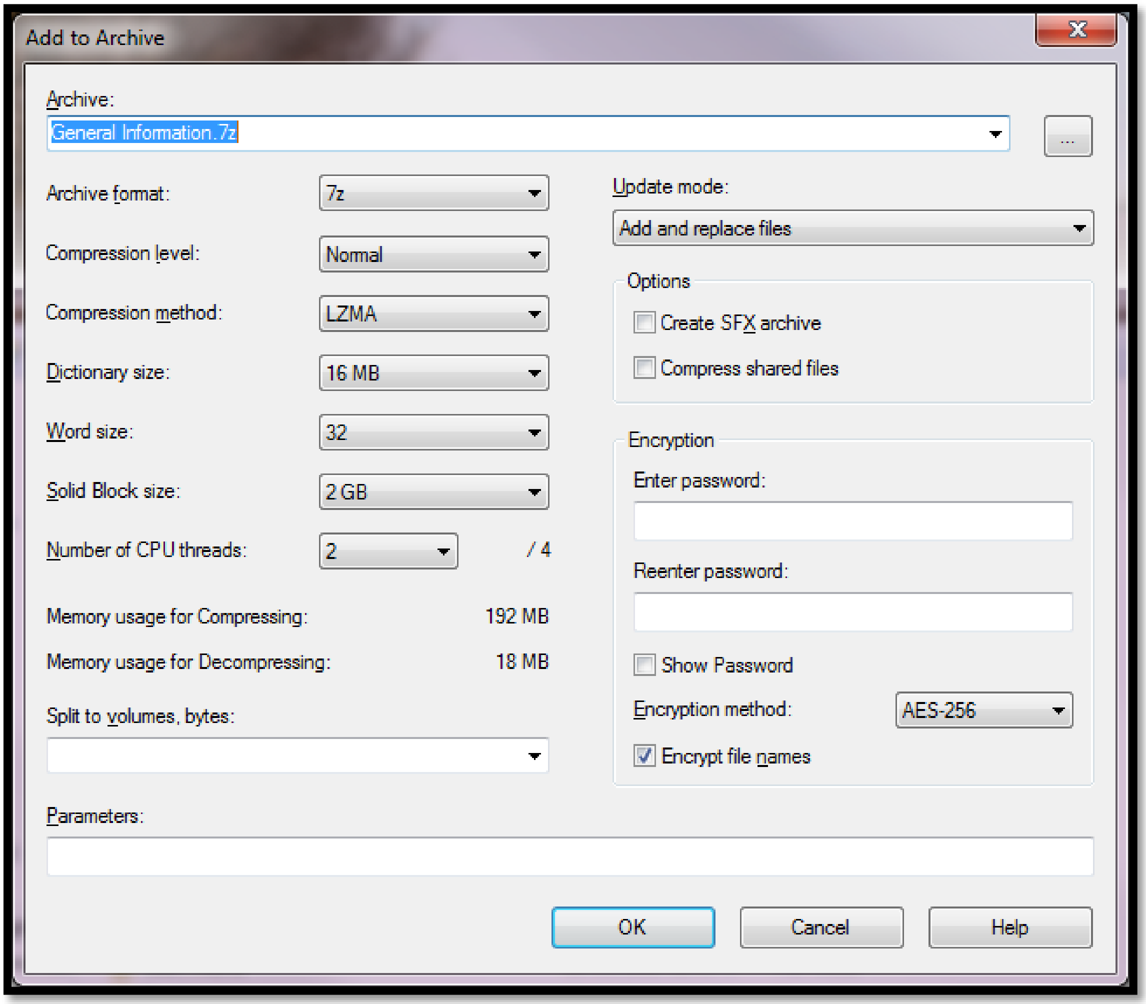
Versions

There are no previous versions of this file.

e. To decrypt the file, follow the above steps and when prompted for the password, remove the password and save the file to a secure network location or encrypted device. The file can now be opened without providing a password.

How to Encrypt Files Using 7-Zip

7. 7-Zip is an open source application providing file level based encryption the latest version is available at http://www.7-zip.org/
   a. Right click on the files or folder you wish to encrypt and select “7ZIP add to archive”. You will see the following dialogue box.



Add to Archive

Archive: General Information.7z

Archive format: 7z

Compression level: Normal

Compression method: LZMA

Dictionary size: 16 MB

Word size: 32

Solid Block size: 2 GB

Number of CPU threads: 2 / 4

Memory usage for Compressing: 192 MB

Memory usage for Decompressing: 18 MB

Split to volumes, bytes:

Parameters:

Update mode: Add and replace files

Options

□ Create SFX archive

□ Compress shared files

Encryption

Enter password:

Reenter password:

□ Show Password

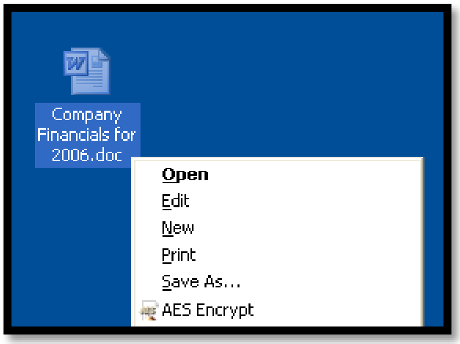
Encryption method: AES-256

☑ Encrypt file names

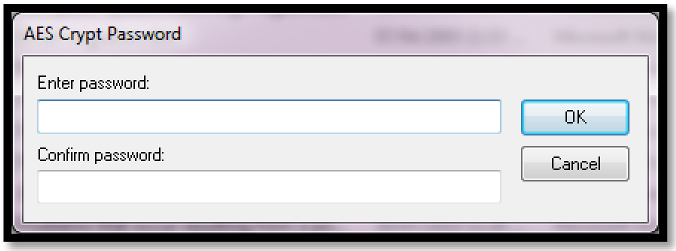
   b. Select or create the name of the archive about to be created, leaving the balance of settings as is. In the Encryption section, provide a strong password and ensure that AES-256 is selected, and then select “OK”. This creates the name of the archive with a .7z extension and will require the password to open and decrypt the archive.

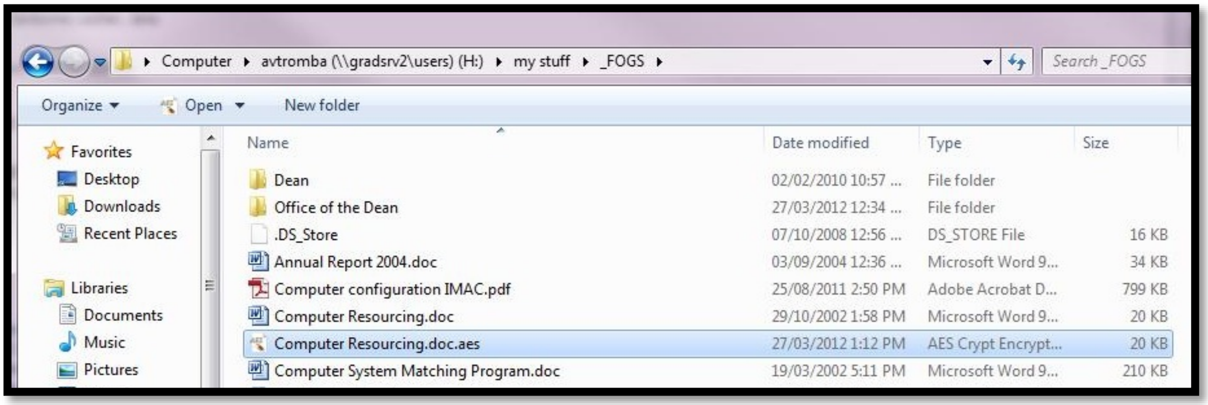
How to Encrypt Files Using AES Crypt for Windows

8. AES Crypt is an open source application providing file level based encryption the latest version is available at http://www.aescrypt.com/
    a. Install AES Crypt on your system.
    b. Open Windows Explorer and select a file to be encrypted, right click on the file, and select AES Encrypt from the drop-down menu.



    c. Enter a strong password and select OK. This will create a file with the same name but with an .aes extension.



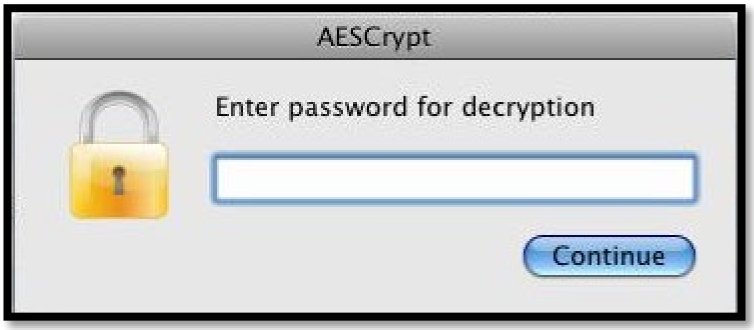


Name	Date modified	Type	Size
Dean	02/02/2010 10:57 ...	File folder	
Office of the Dean	27/03/2012 12:34 ...	File folder	
.DS_Store	07/10/2008 12:56 ...	DS_STORE File	16 KB
Annual Report 2004.doc	03/09/2004 12:36 ...	Microsoft Word 9...	34 KB
Computer configuration IMAC.pdf	25/08/2011 2:50 PM	Adobe Acrobat D...	799 KB
Computer Resourcing.doc	29/10/2002 1:58 PM	Microsoft Word 9...	20 KB
Computer Resourcing.doc.aes	27/03/2012 1:12 PM	AES Crypt Encrypt...	20 KB
Computer System Matching Program.doc	19/03/2002 5:11 PM	Microsoft Word 9...	210 KB

    d. Depending upon where the original file is located, it may be necessary to delete it.

How to Encrypt Files Using AES Crypt for Mac

9. AES Crypt is an open source application providing file level based encryption the latest version is available at http://www.aescrypt.com/ The Mac version of AES Crypt offers a simple to use drag and drop GUI to enable you to securely encrypt and decrypt files on your Mac. The Mac version of AES Crypt was created from the source code created for Linux. It works exactly like the Linux version. If you want to use the command-line option, please refer to the Linux page for examples of how to use AES Crypt on the Mac.
   a. Enter a strong password.



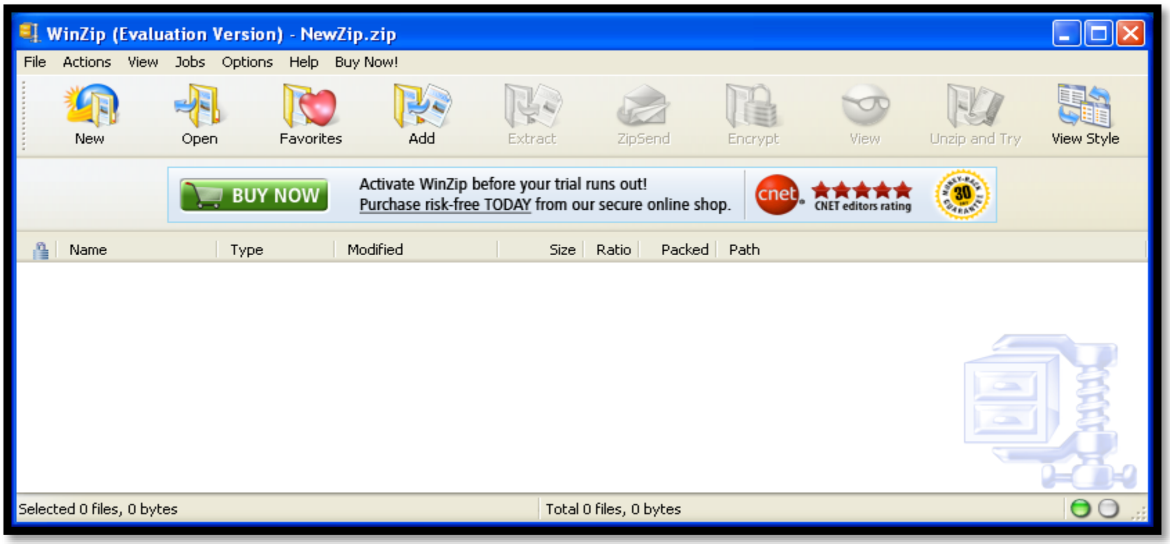
AESCrypt

Enter password for decryption

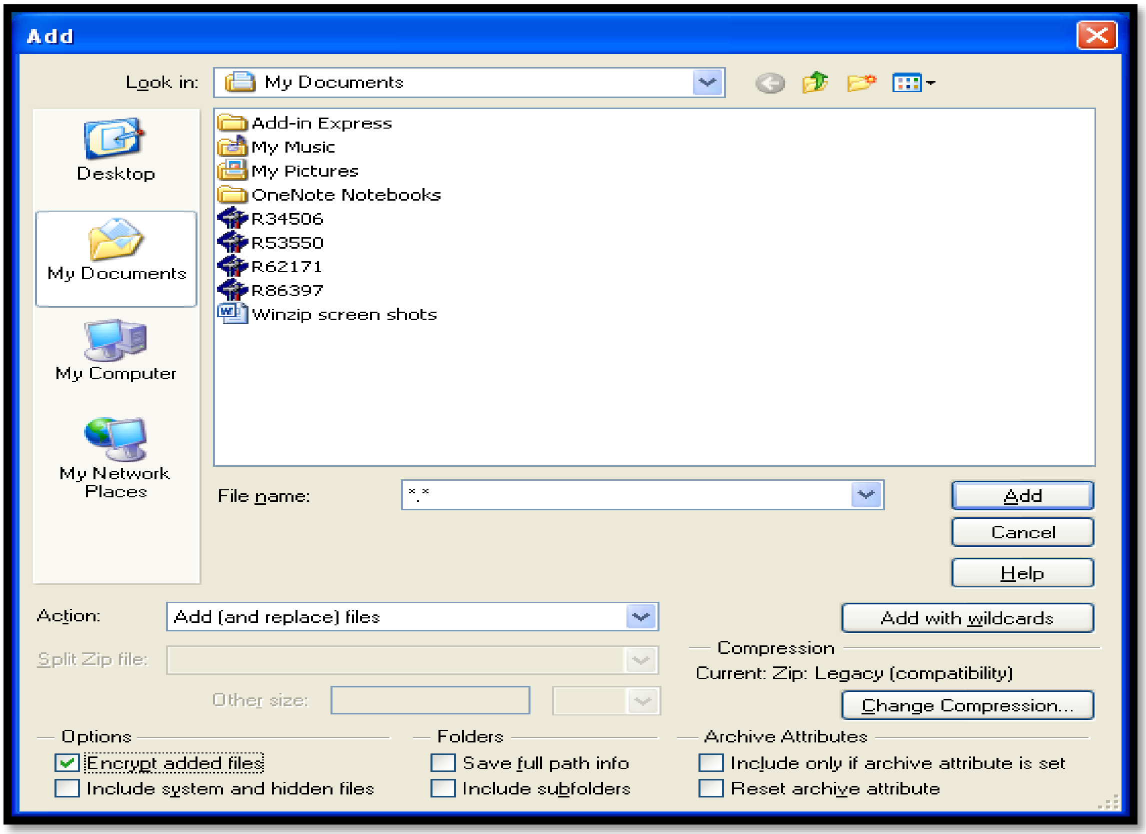
   b. An important note is that the GUI application is actually a script that executes the command-line version created for the Mac. To install the GUI application, just Click on the 'AESCrypt' package and follow the prompts.
   c. The best way to use the tool is to drag the AESCrypt application to the Dock and drop files to be encrypted on it. To decrypt, find the file in the same directory where the original file was located, which will have an AESCrypt Icon associated with it and double click it.
   d. Depending upon where the original file is located it may be necessary to delete it.

How to Encrypt Files Using WinZip

10. The current version of WinZip is available at https://www.winzip.com/win/en/. It should be noted that WinZip licensing is not free of charge outside of the trial period. There is a version for Windows and a version for Mac.
    a. To create an encrypted zip file from the menu, select “Add” from the menu bar.



    b. Select the documents to zip and encrypt, ensuring to check the “Encrypt added files”.



Look in: My Documents

Add-in Express
My Music
My Pictures
OneNote Notebooks
R34506
R53550
R62171
R86397
Winzip screen shots

File name: *.*

Action: Add (and replace) files

Split Zip file:

Other size:

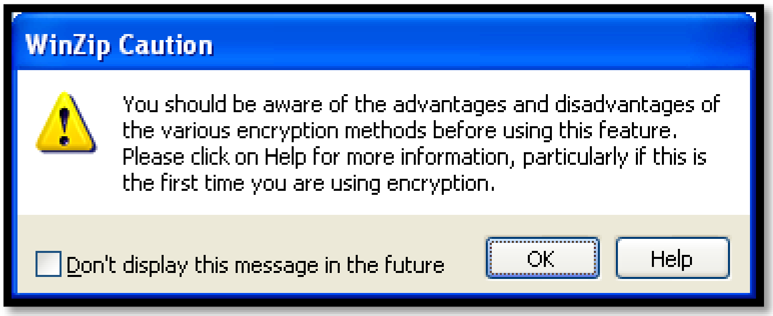
Compression
Current: Zip: Legacy (compatibility)

Options
☑ Encrypt added files
☐ Include system and hidden files

Folders
☐ Save full path info
☐ Include subfolders

Archive Attributes
☐ Include only if archive attribute is set
☐ Reset archive attribute

c. Because WinZip has three levels of encryption, the following Caution message is displayed. Select OK.

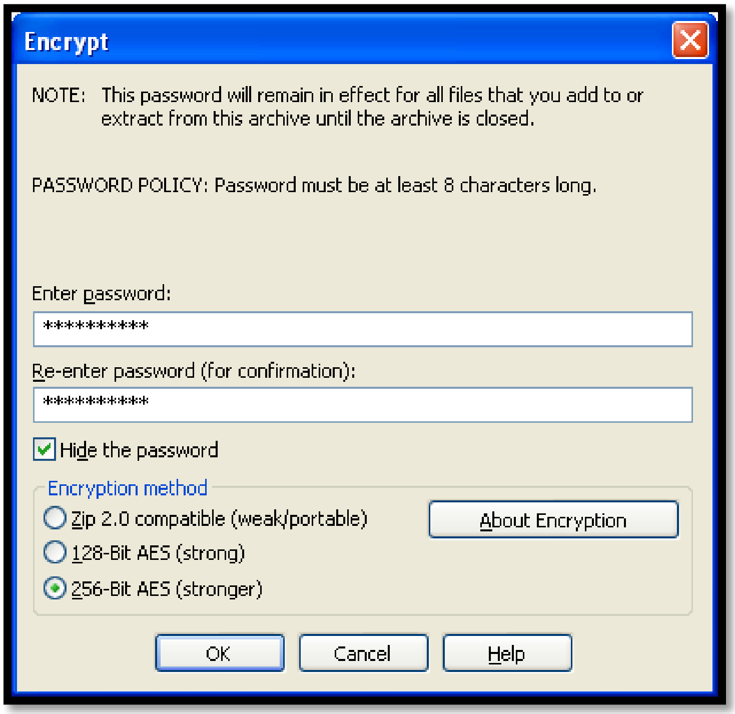


WinZip Caution

You should be aware of the advantages and disadvantages of the various encryption methods before using this feature. Please click on Help for more information, particularly if this is the first time you are using encryption.

□ Don't display this message in the future

d. Enter a strong password and select “256-Bit AES”. Then select OK and the process of compression and encryption will begin.



Encrypt

NOTE: This password will remain in effect for all files that you add to or extract from this archive until the archive is closed.

PASSWORD POLICY: Password must be at least 8 characters long.

Enter password: ***********

Re-enter password (for confirmation): ***********

☑ Hide the password

Encryption method

○ Zip 2.0 compatible (weak/portable)

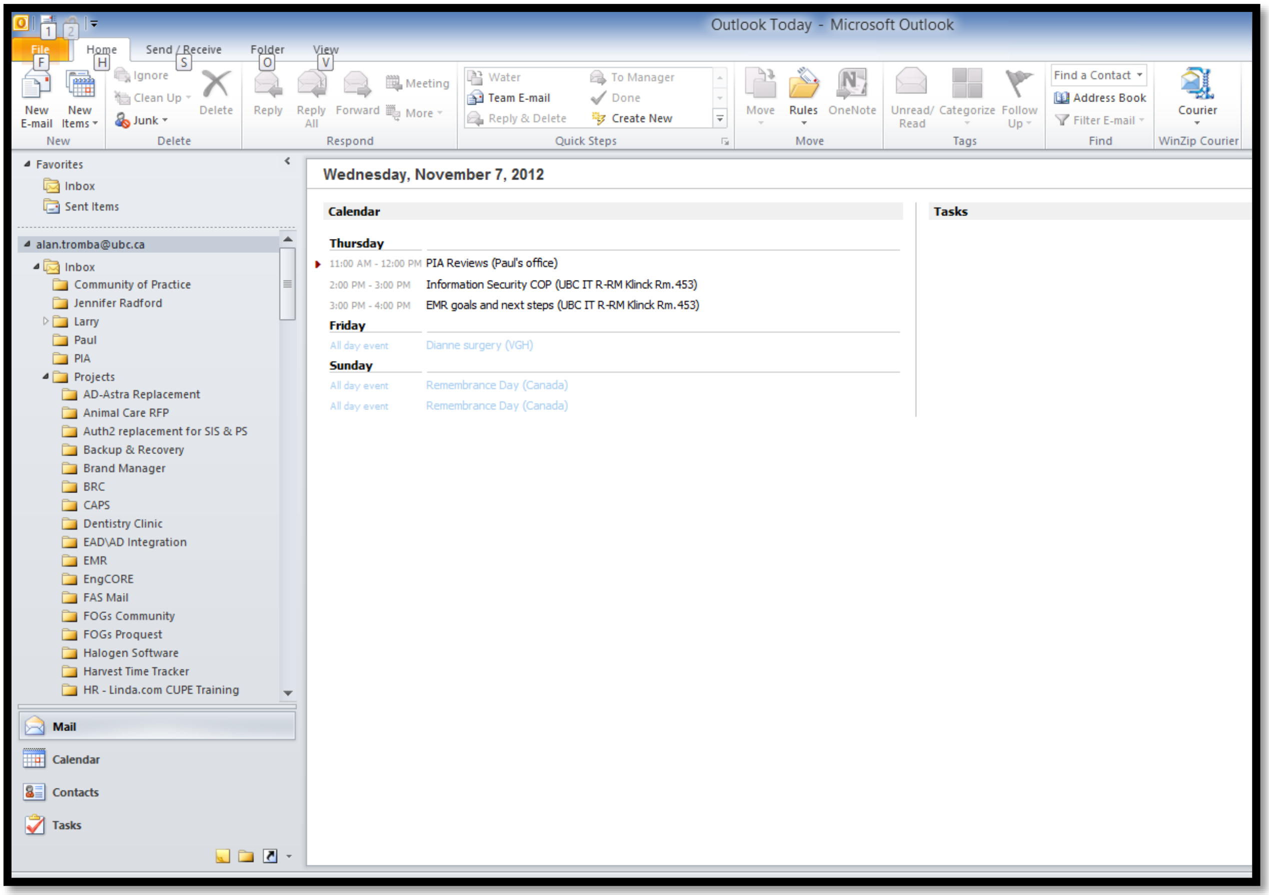
○ 128-Bit AES (strong)

● 256-Bit AES (stronger)

e. Once the file is encrypted, the password will be required to open the file.

How to Encrypt Files Using WinZip Courier

11. WinZip Courier allows you to encrypt attachments as you are sending them (please note that some email service providers, such as Gmail, do not accept encrypted ZIP file attachments). The latest version of WinZip Courier is available at https://www.winzip.com/win/en/prodpageec.html. This is product requires a paid licence. Once installed, WinZip courier will work with the following e-mails clients; Microsoft Outlook 2003, 2007 and 2010. If you are a Mac user, Apimac has a product called Encrypt Email for Mac, which provides similar services as WinZip Courier, for more information see: https://www.apimac.com/.
    a. Once installed, WinZip Courier will be added to the Outlook ribbon/toolbar.

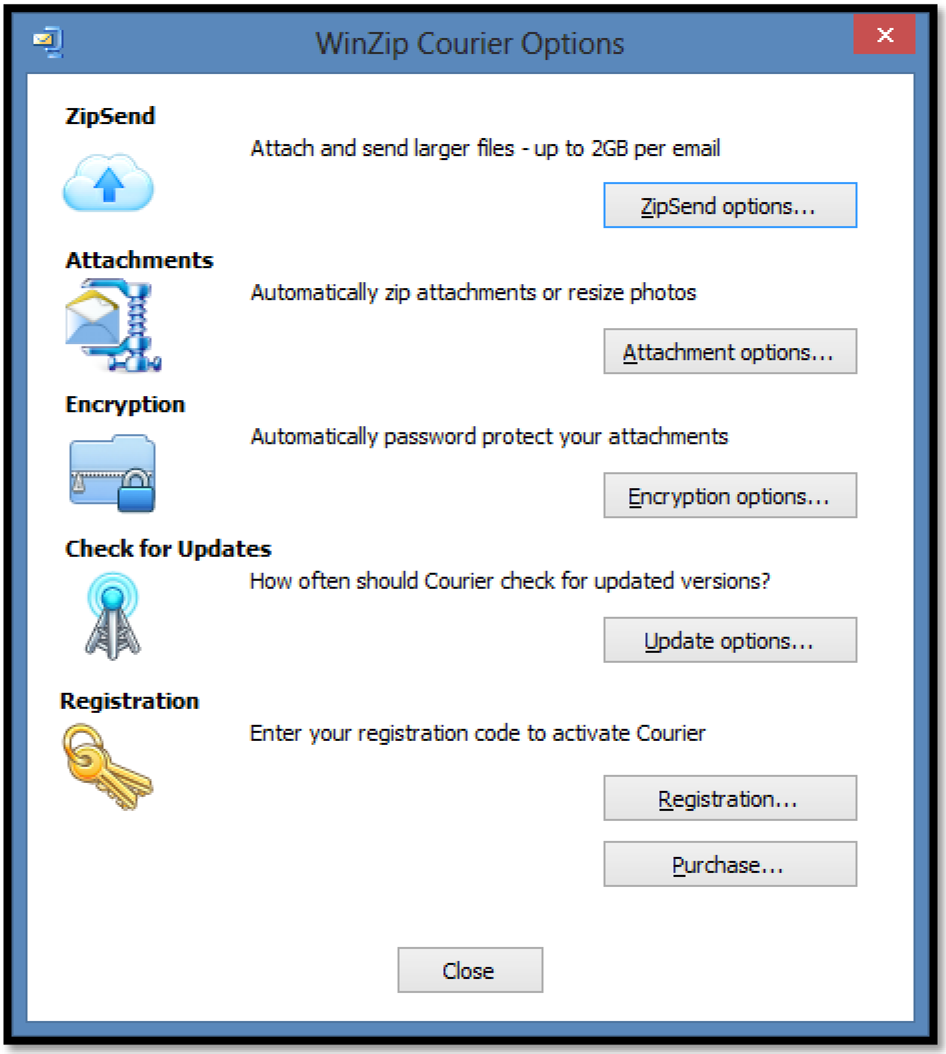


Thursday
11:00 AM - 12:00 PM PIA Reviews (Paul's office)
2:00 PM - 3:00 PM Information Security COP (UBC IT R-RM Klinck Rm.453)
3:00 PM - 4:00 PM EMR goals and next steps (UBC IT R-RM Klinck Rm.453)

Friday
All day event Dianne surgery (VGH)

Sunday
All day event Remembrance Day (Canada)
All day event Remembrance Day (Canada)

b. Click on Courier to select “WinZip Courier Options”. Click on “Encryption Options”.



WinZip Courier Options

ZipSend

Attach and send larger files - up to 2GB per email

Attachments

Automatically zip attachments or resize photos

Encryption

Automatically password protect your attachments

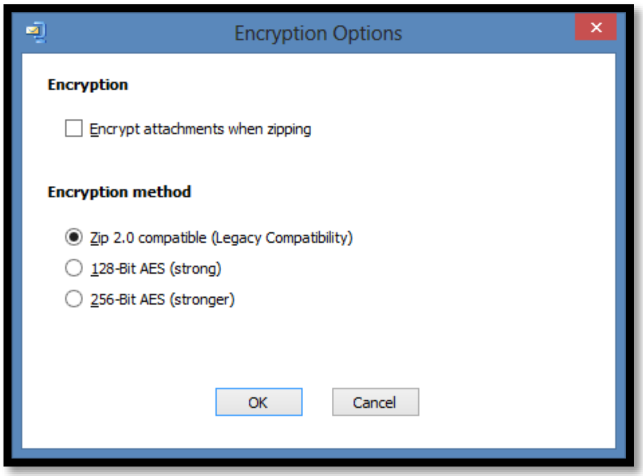
Check for Updates

How often should Courier check for updated versions?

Registration

Enter your registration code to activate Courier

c. Ensure that “Encrypt attachments when zipping” is checked and select “256-Bit AES” as the Encryption Method. Then click on OK.



Encryption Options

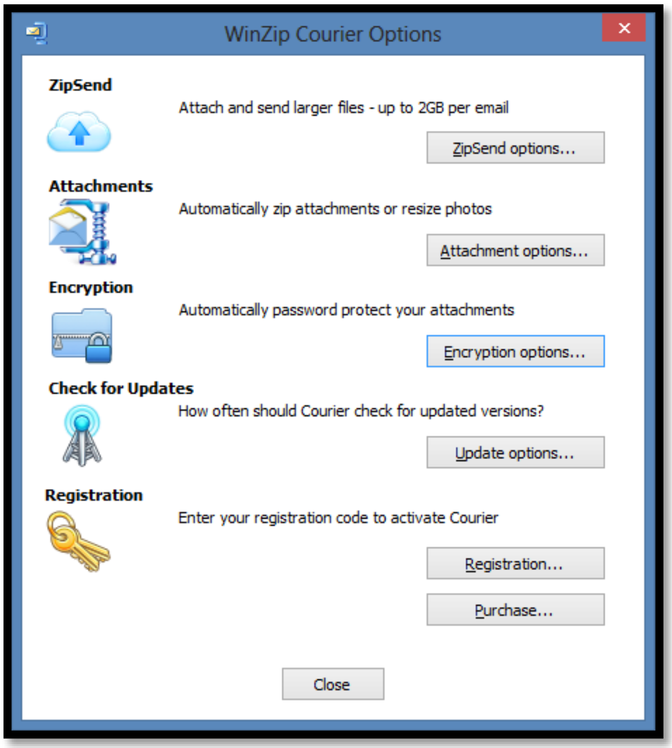
Encryption

□ Encrypt attachments when zipping

Encryption method

● Zip 2.0 compatible (Legacy Compatibility)
○ 128-Bit AES (strong)
○ 256-Bit AES (stronger)

d. In the WinZip Courier Options window, click on “Close”. We are now ready to start encrypting attachments on the fly.



WinZip Courier Options

ZipSend

Attach and send larger files - up to 2GB per email

Attachments

Automatically zip attachments or resize photos

Encryption

Automatically password protect your attachments

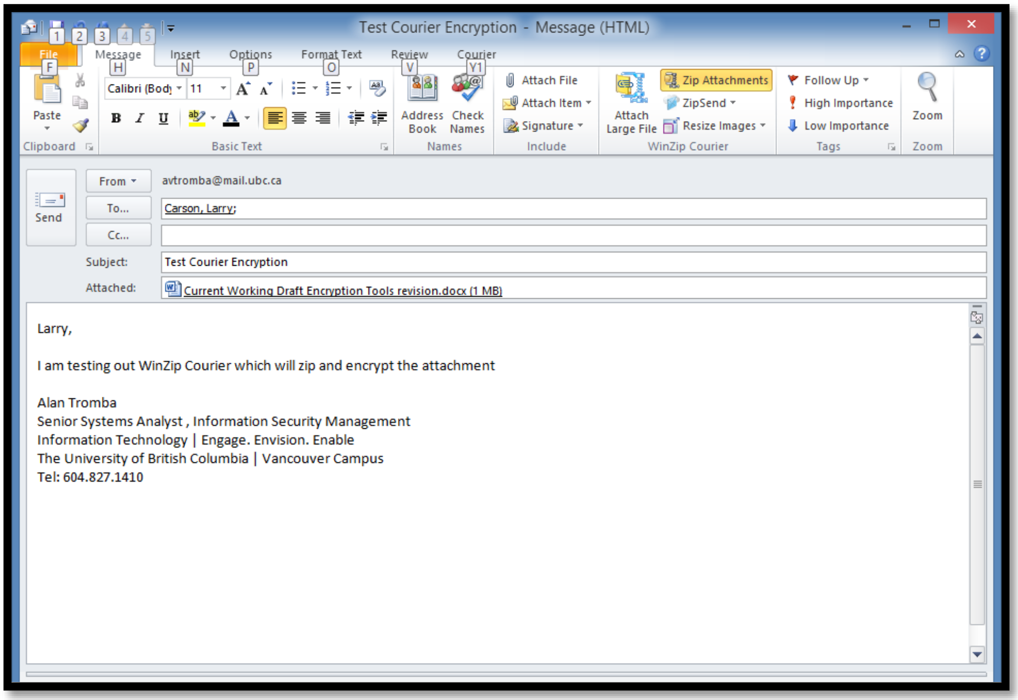
Check for Updates

How often should Courier check for updated versions?

Registration

Enter your registration code to activate Courier

e. Within Outlook, click on New Email, select your recipient/s, enter your subject and your message body, and click on “Send”.



Test Courier Encryption - Message (HTML)

From: avtromba@mail.ubc.ca

To...: Carson, Larry;

Cc...:

Subject: Test Courier Encryption

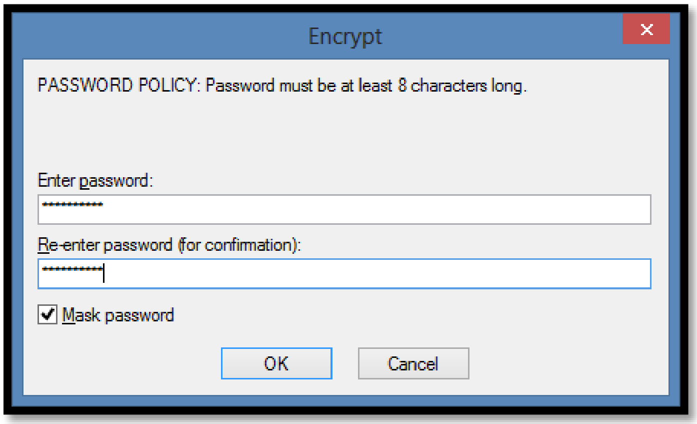
Attached: Current Working Draft Encryption Tools revision.docx (1 MB)

Larry,

I am testing out WinZip Courier which will zip and encrypt the attachment

Alan Tromba
Senior Systems Analyst , Information Security Management
Information Technology | Engage. Envision. Enable
The University of British Columbia | Vancouver Campus
Tel: 604.827.1410

f. Provide a strong password and ensure the Mask Password box is checked.



PASSWORD POLICY: Password must be at least 8 characters long.

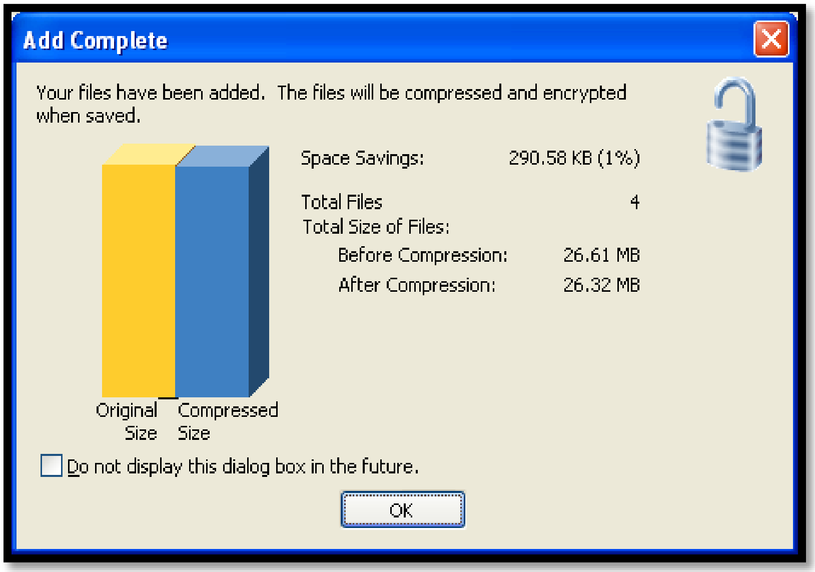
Enter password: ***********

Re-enter password (for confirmation): ***********

☑ Mask password

g. Select OK and your message will be sent with a compressed and encrypted attachment.

h. When completed this dialogue box will appear, select OK to complete the process. Your files are zipped and encrypted.



Your files have been added. The files will be compressed and encrypted when saved.

Space Savings: 290.58 KB (1%)

Total Files 4

Total Size of Files:

Before Compression: 26.61 MB

After Compression: 26.32 MB

□ Do not display this dialog box in the future.

Appendix A – Encryption Product Summary

Product	Version	Windows	Mac	Linux	Availability
Microsoft Office	2007 or newer	Yes	Yes 2008 only	No	UBC Site License https://it.ubc.ca/services/desktop-print-services/software-licensing
7-Zip	9.20	Windows 7 / Vista / XP / 2008 / 2003 / 2000 / NT / ME / 98	No	Command line version for Linux/Unix	https://www.7-zip.org/
AES Crypt	3.08	Yes	Yes	Yes	https://www.aescrypt.com/
WinZip	9 or newer	Yes	Yes	No	https://www.winzip.com/win/en/
WinZip Courier	4.0	32 Bit Office only	No	No	https://www.winzip.com/win/en/prodpageec.html

Related Documents

Policy SC14, Acceptable Use and Security of UBC Electronic Information and Systems
Encryption Requirements standard