

Computer Services

Quick Guide on How to Use 7-Zip to Encrypt and Decrypt Files



Introduction

This guide shows you how to use 7-Zip to create AES-256 encrypted ZIP archives for securely sharing confidential and sensitive data with other people.

This guide shows you how to:

- Download and install 7-Zip
- Create AES-256 encrypted ZIP archives
- Extract files from AES-256 encrypted ZIP archives

You should read this document in its entirety before attempting this procedure.

By following the guidance in this document you are helping to improve compliance with the Institutes Information Security and Data Protection Policies.

Requirements for sharing AES-256 encrypted ZIP archives

Before you can share an AES-256 encrypted ZIP archive with another person, you need to make sure that:

- You have received authorisation from the data owner (or other appropriate authority) to copy and share the data
- The recipient has 7-Zip or WinZip installed on their own computer

What is encryption?

Encryption helps secure confidential and sensitive data by converting it into a form that cannot be understood by criminals.

Why use AES-256?

AES-256 is a secure and reliable method of encryption that is vendor neutral and compatible with other ZIP compression programs that provide encryption capabilities (e.g. WinZip).

When do I need to create an AES-256 encrypted ZIP archive?

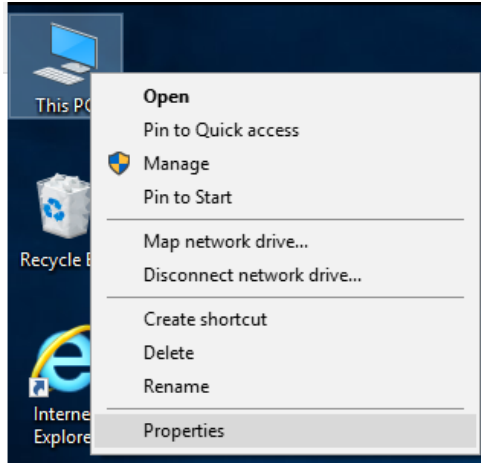
AES-256 encrypted ZIP archives need to be used for all confidential and sensitive data when:

- Emailed across non-secure and untrusted networks (e.g. the Internet)
- Kept on an unencrypted portable storage device (e.g. CD-ROM, USB thumb drive, etc...)

1. Download and Install 7-Zip

Go to <https://www.7-zip.org> and download the version of 7-Zip that is best suited to your version of Microsoft Windows (e.g. 32 bit or 64 bit).


This can be found by right clicking on 'This PC' and clicking properties

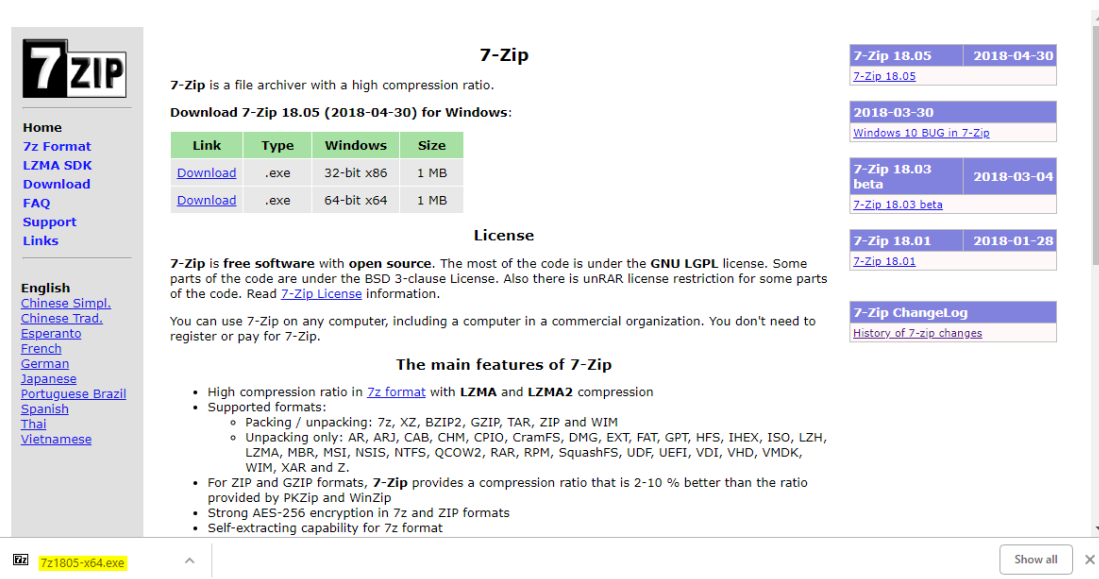


The system type will display your version of windows:

System type: 64-bit Operating System, x64-based processor

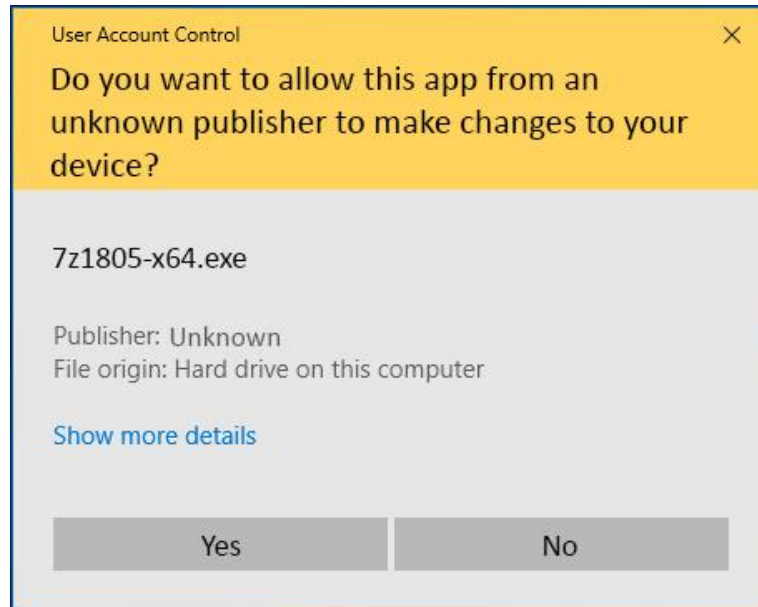
7-Zip will automatically download after you have clicked on the appropriate link.

Click on the download in your browser to initiate the installation (Fig 1).
(Alternatively if installing at a later date, double click on the 7Zip .exe file in downloads  7z1805-x64.exe)



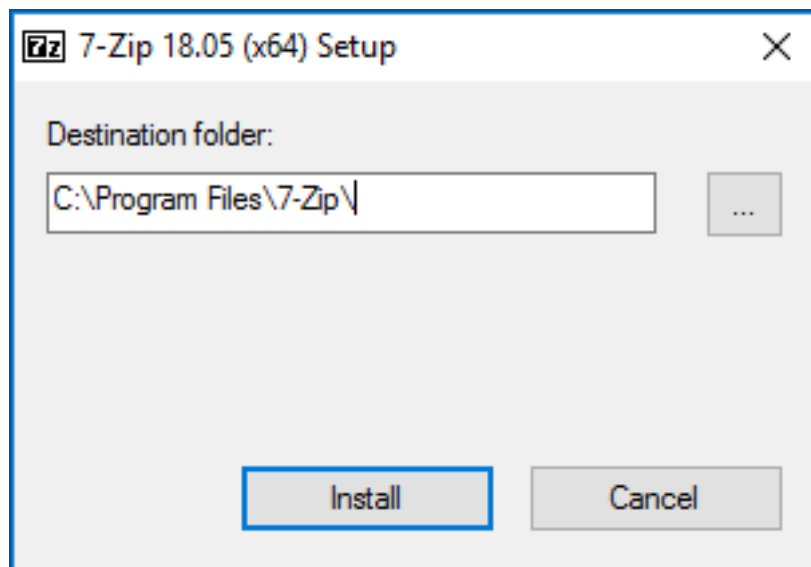
(Fig 1 – browser window with 7-zip download)

Click **Yes** (Fig 2) to allow the installation.



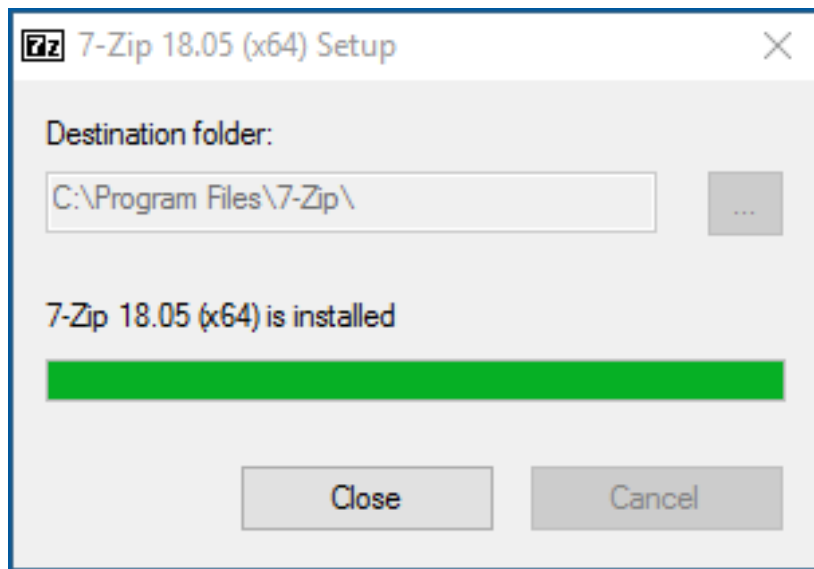
(Fig 2 – User Account Control)

Use the default destination folder for the install and click **Install** (Fig 3).



(Fig 3 – Default folder location)

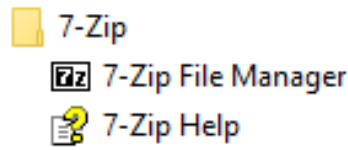
Once the installation is complete click **Close** (Fig 4).



(Fig 4 – finishing the 7-Zip installation process)

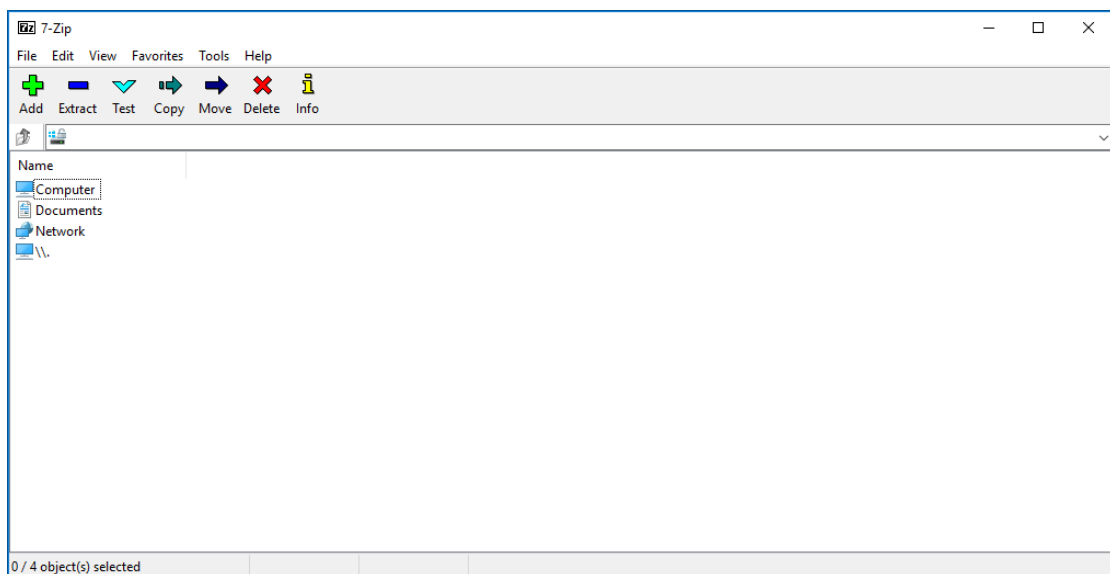
2. Using 7-Zip to create AES-256 encrypted ZIP archives

Open 7-Zip by clicking on the '7-Zip File Manager icon' (Fig 5) located in your Windows Start Menu or on your Windows Start Screen if you are using Windows 8.



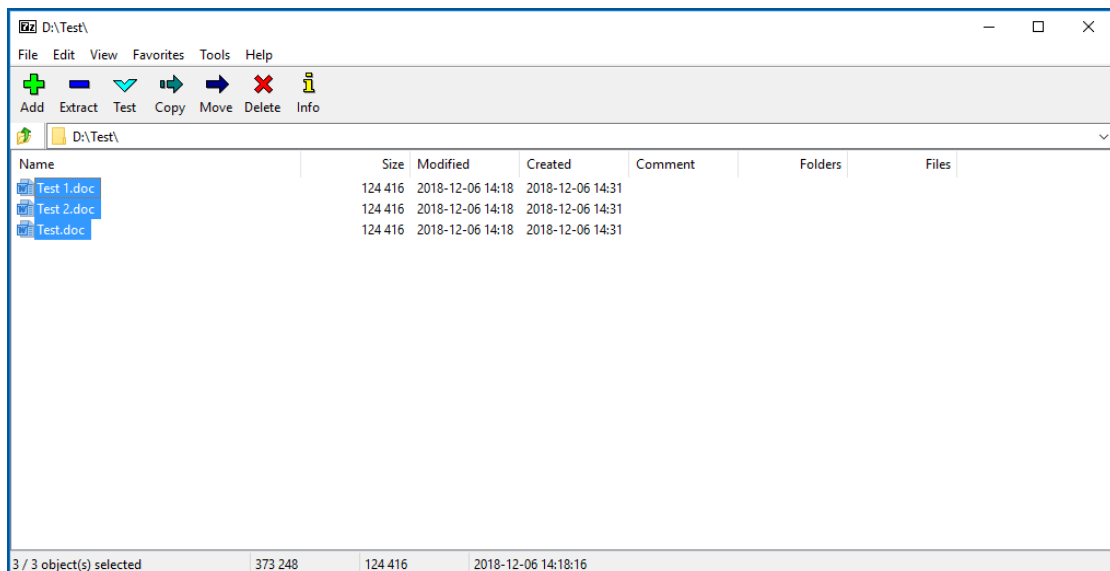
(Fig 5 – 7-Zip File Manager)

In the '7-Zip File Manager' window (Fig 6) browse to the location of the files that you want to compress and encrypt.



(Fig 6 - 7-Zip Navigation Screen)

Select the file you want to compress and encrypt by highlighting the file and clicking **Add** (Fig 7). To select several files hold down the 'Ctrl' key and left click on each file. Click **Add** when you have finished selecting all of your files.

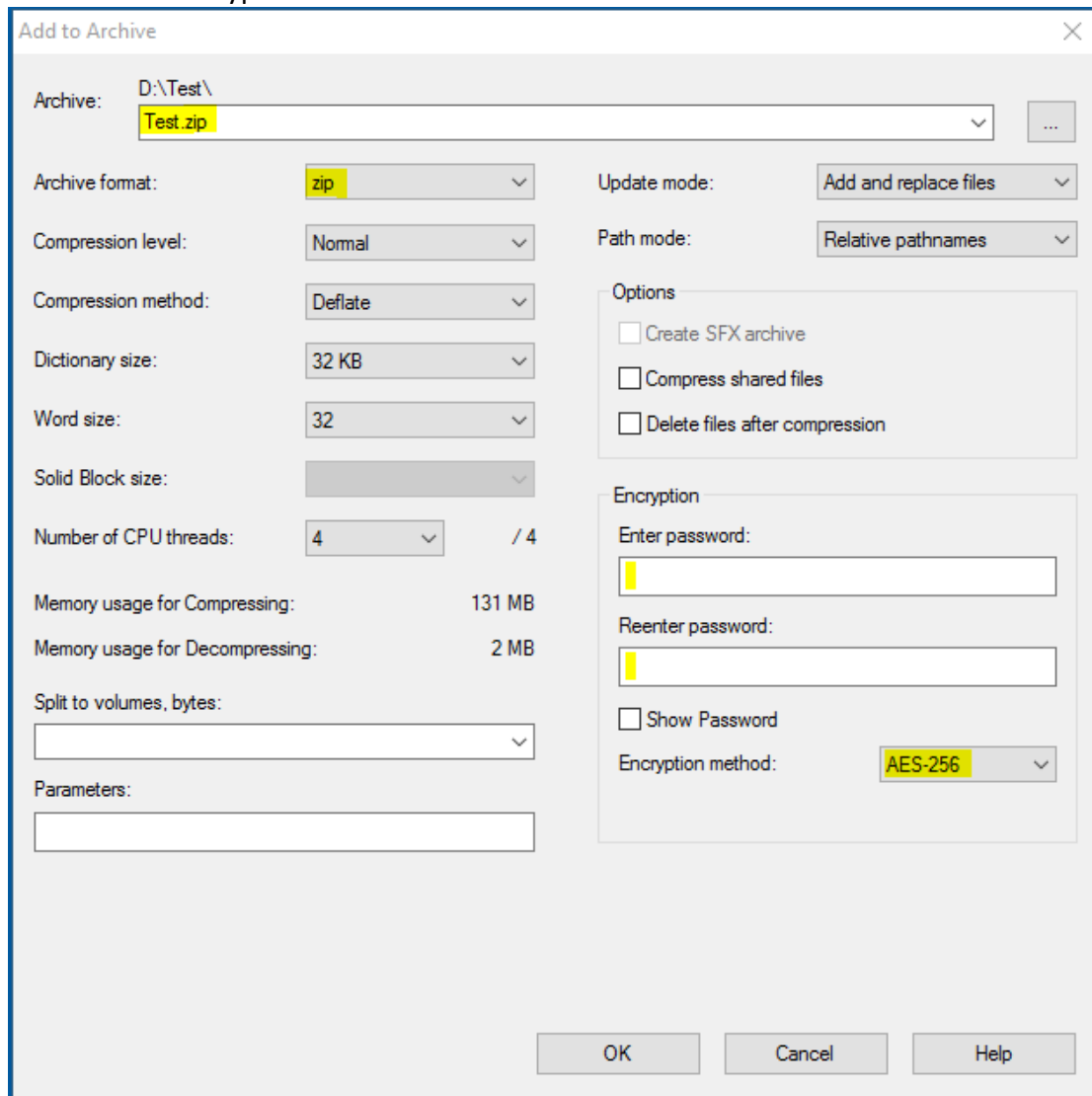


(Fig 7 – 7-Zip File Manager window showing files that can be compressed and encrypted)

In the 'Add to Archive' window (Fig 8), make the following changes:

- Under 'Archive' enter a name for your AES-256 encrypted ZIP archive
- Change 'Archive' format to ZIP
- Change Encryption method' to AES-256
- Make sure that your archive name ends with .ZIP
- Under 'Enter Password' enter a passphrase that contains at least one number and one special character, such as **Securing 003 files!**

Click 'OK' to encrypt the files.

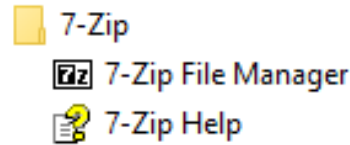


(Fig 8 – 7-Zip 'Add to Archive' Screen)

The files will now be compressed and encrypted to your chosen destination folder.

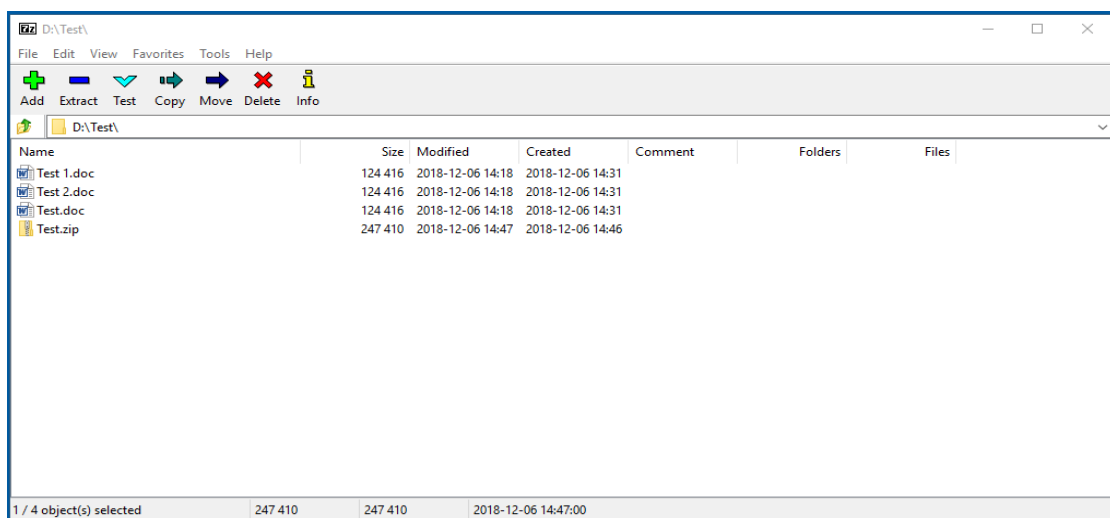
3. Using 7-Zip to decrypt and extract files from AES-256 encrypted ZIP archives

Open 7-Zip by clicking on the '7-Zip File Manager' icon (Fig 9) located in your Windows Start Menu or on your Windows Start Screen if you are using Windows 8.



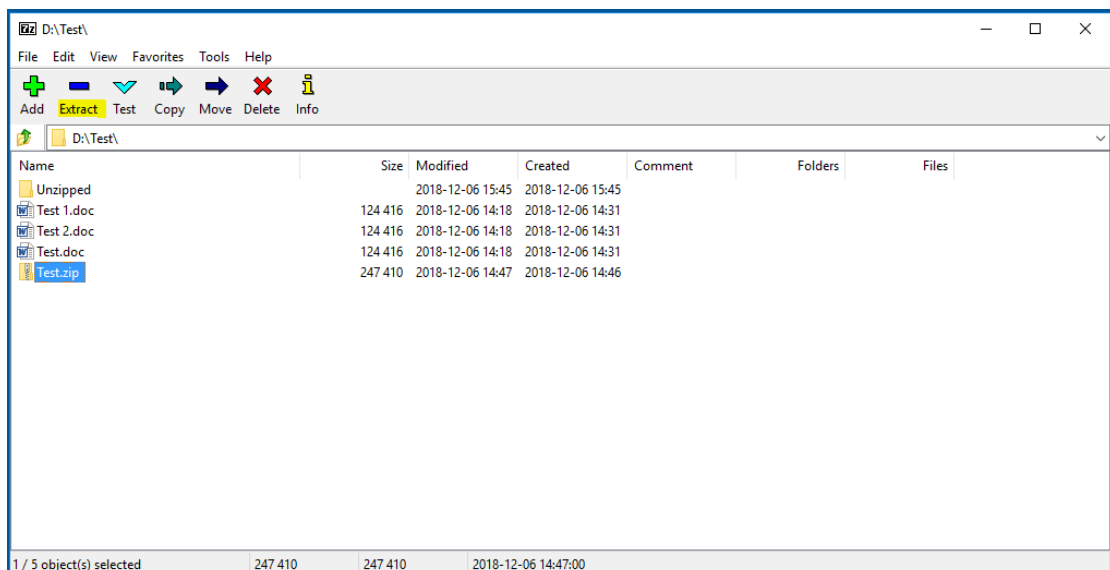
(Fig 9 – 7-Zip File Manager)

In the "7-Zip File Manager" window (Fig 10) browse to the location that contains your AES-256 encrypted ZIP archive



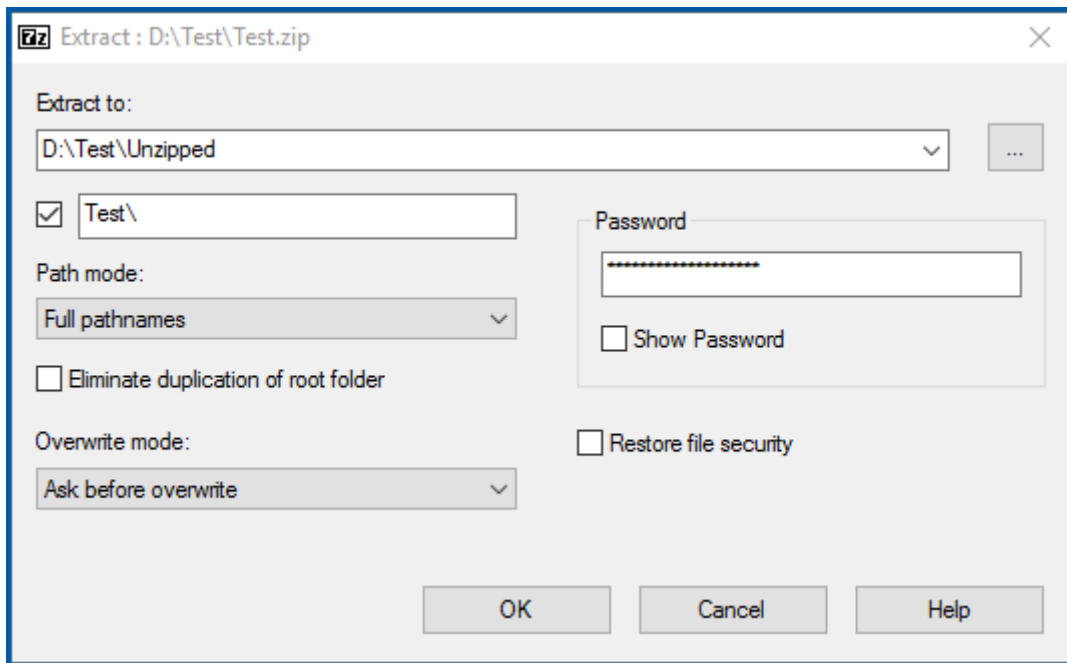
(Fig 10 - 7-Zip Navigation Screen)

Select the .zip file you want to decompress and decrypt by highlighting the file and clicking **Extract** (Fig 11).



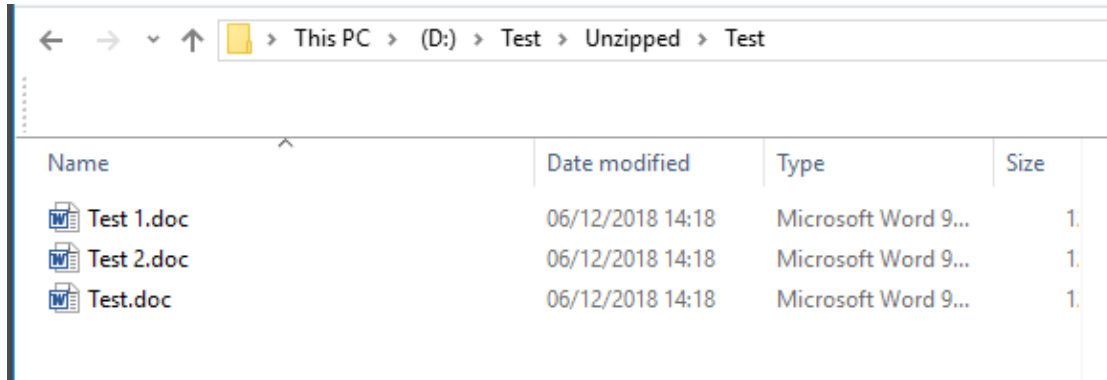
(Fig 11 – 7-Zip File Manager window showing files that can be decompressed and decrypted)

Select the location that you want to extract your files to (Fig 12). The default location is the same location that contains your AES-256 encrypted ZIP archive. Enter the password / pass phrase you used to encrypt the files and press **OK**.



(Fig 12 – Extracting the contents of the ZIP file)

Your files will now be extracted and ready to use (Fig 14).



(Fig 13 – Extracted Files ready for use.)

4. Protecting your encryption passphrase

Your passphrase is the only thing that stops a criminal from accessing the contents of your AES256 encrypted ZIP archive if it falls into the wrong hands. If you need to communicate your passphrase to a recipient, then you **must** communicate that passphrase by telephone or in a face to face conversation.

Do not forget your passphrase. It is not possible for us to recover your data if you forget your passphrase.

5. Maintain access to your important work

Save a master copy of your data, in an unencrypted form, to your X drive or other secure storage location. This will ensure that your data can still be accessed if you do forget your passphrase or if the AES-256 encrypted ZIP archive is damaged.

6. Information security incidents

If you discover an incident that places sensitive or confidential information at risk, then you **must** notify the Computer Services Team through the Helpdesk by email (helpdesk@lyit.ie) or by telephone (0749186050).

7. Information Security checklist

Ref	Requirement	
1	Have you familiarised yourself with the prerequisites for using 7-Zip?	
2	Have you downloaded and installed 7-Zip?	
3	Do you know how to create an AES-256 encrypted ZIP archive?	
4	Do you know how to extract files from an AES-256 encrypted ZIP archive?	
5	Do you know how to protect your passphrase?	
6	Do you know how to maintain access to your important work?	
7	Do you know how to report an information security incident?	
8	Have you read the Institutes Information Security and Data Protection Policies?	