



**IT Services
Training Guide**

Encryption
Introduction to using 7-Zip

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Version: 5.3

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Introduction to Using 7-Zip

Introduction

7-Zip is an application that allows you to:

- Compress a file – for example a file that is 5MB can be compressed to 3MB
- Secure the contents of most file types by protecting it with encryption
- Combine multiple MS Office documents into one folder, as an easy alternative to encrypting many documents individually

Other encryption options:

Microsoft Office:

It is recommended that Microsoft Office encryption should be used for any Office file. Also, the contents of other file types, such as images, can often be copied and pasted into Word or PowerPoint more easily than using 7-Zip. PDF files created using the "Save as pdf" function in Word also have an encryption function. Further information on how to use Microsoft Office for encryption can be found here <http://documents.manchester.ac.uk/DocuInfo.aspx?DocID=9622>

Adobe Acrobat Pro:

PDF files can be created and encrypted using Adobe Acrobat Pro which is available for a fee from the Electronic Software Delivery System: <http://www.software.itservices.manchester.ac.uk/>

Other applications may be able to generate and encrypt files, but these have not been robustly tested and cannot be recommended. For example PDF-Xchange **must not** be used to encrypt documents as they can be opened without a password on devices with Apple operating systems. Where third-parties, who provide data to the University (eg for research projects), explicitly require alternative encryption methods to be used, you should contact IT Services for further advice.

Further encryption advice can be found here:

<http://www.itservices.manchester.ac.uk/secure-it/encryption/>

REMEMBER THAT SENSITIVE DATA TO BE SENT BY EMAIL MUST BE PUT IN AN ENCRYPTED ATTACHMENT AND THE PASSWORD CONVEYED TO THE RECIPIENT BY A DIFFERENT ROUTE.

7-Zip is included in the standard University Windows 7 image, so you shouldn't need to download/install the software onto your computer. If you are using any other image you may require administrator permissions on your PC to install 7-Zip. Please contact IT Support if you don't have administrator rights and arrange for the software to be installed for you. Once 7-Zip is installed it can be used to compress or encrypt files on your PC without the need to have administrator permissions.

For information, instructions on how to download the software can be found in Appendix A.

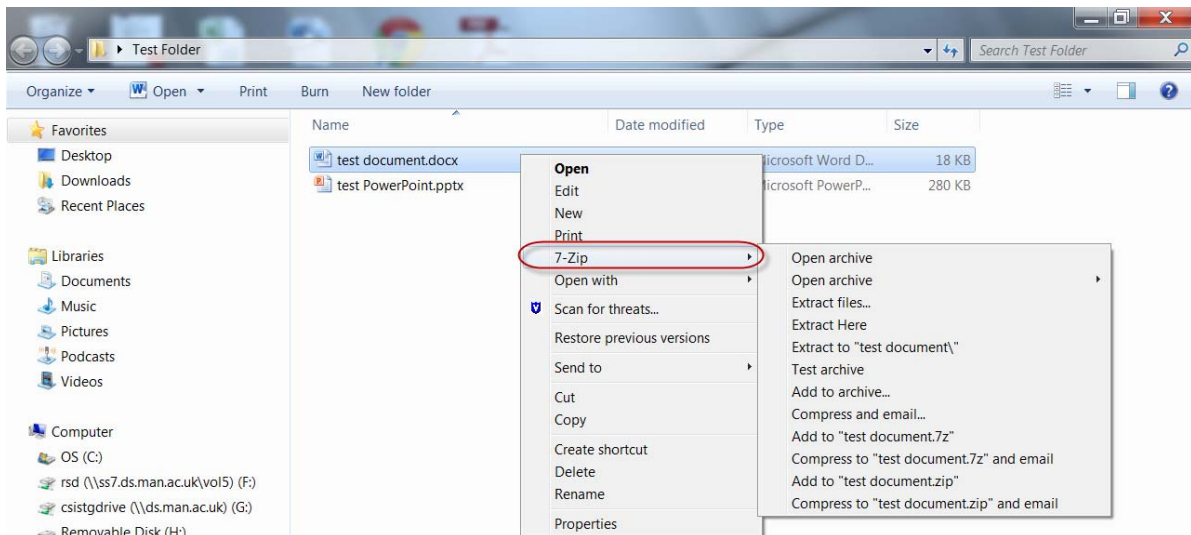
Further information with regards to securing data can be found via the following website: <http://www.itservices.manchester.ac.uk/secure-it/>

Compress/encrypt individual files

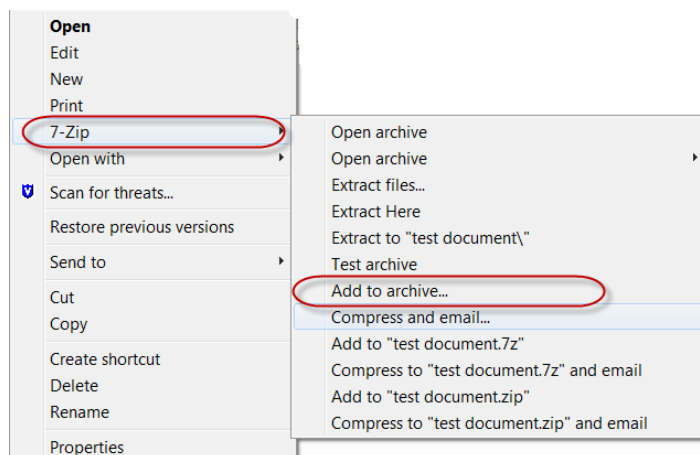
7-zip can be located via: **Start>All Programs>7-Zip>7-Zip Manager**.

However you will be shown a different way to use the application which is considered easier to use.

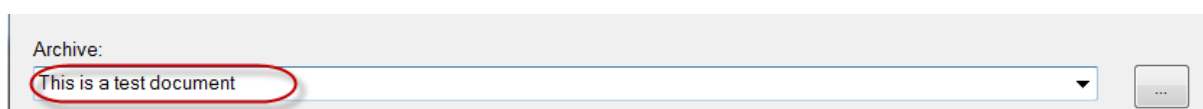
1. Right-click on the file you want to compress/encrypt and you will see the 7-Zip option. This is where you will find most of the functionalities of 7-Zip.



2. To encrypt a file right-click on the file, select **7-Zip** and then select **Add to archive....**



3. The default name of the Archive file will be the same as the file name. You can change the name by overwriting the existing name in the Archive field.



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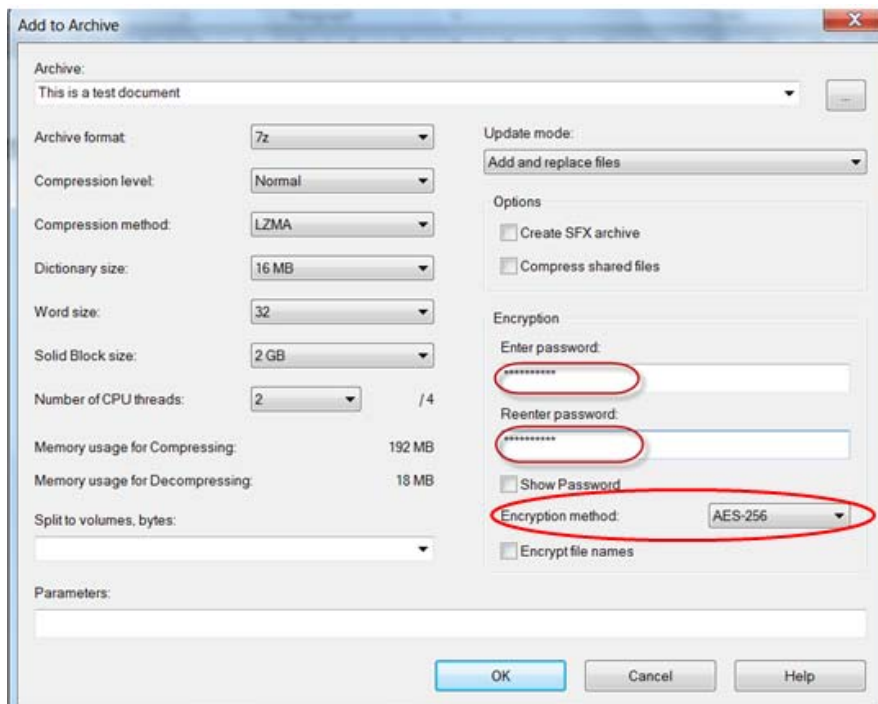
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4. It is important that you ensure that the Encryption method is "AES-256". The remainder of the fields can be left at the default. Enter a password in the relevant field. IT Services recommend the use of a pass-phrase which for encryption purposes should be a minimum of 20 characters.

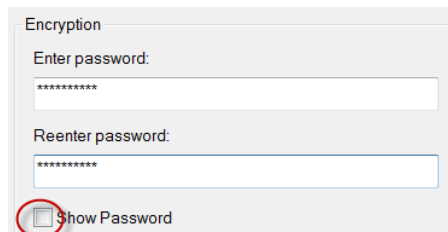
i The strength of a pass-phrase is critically dependent on its length, the range of characters used (upper/lower case letters, numbers, special symbols) and how randomly they're put together. Longer pass-phrases constructed in this way are more resistant to what is termed a 'brute-force attack'. You will then be required to re-enter the password.

i Please refer to the following link for further information and guidance.




<http://documents.manchester.ac.uk/DocuInfo.aspx?DocID=9149>



5. You can click to **Show Password** to check that you have spelt the password correctly. If you do click this button, once you have checked the password be sure to un-check **Show Password**.






6. Click **OK** to continue.

-  Do not use your central University password as a password for 7-Zip.
-  Make sure you remember your encryption password.
If you lose or forget it you will have to re-compress/re-encrypt the original file.
-  Further information with regards to securing data can be found via the following website **<http://www.itservices.manchester.ac.uk/secure-it>**

7. The compressed/encrypted file is now displayed and available to be sent as an email attachment. The original file will be left in the same format on your computer

-  The extension of the file has changed to '7z' and the file size has decreased.

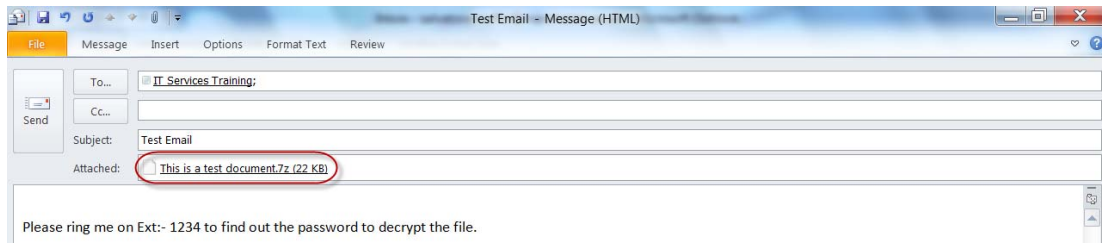
Name	Date modified	Type	Size
 This is a test document.7z		7Z File	22 KB
 test document.docx		Microsoft Word D...	25 KB
 test PowerPoint.pptx		Microsoft PowerP...	280 KB

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Email compressed/encrypted files

1. Once the file has been compressed and encrypted you will need to open Outlook.
2. Enter the recipient's email address and subject.
3. Then attach the '7z' file.

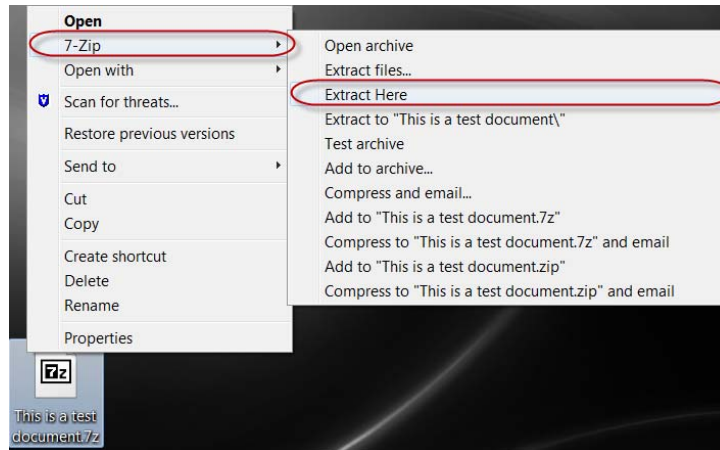


4. Continue to enter the contents of the email before sending.

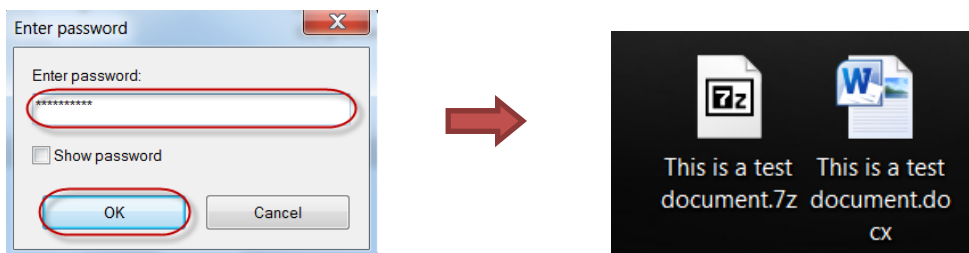
- i** Do not include the password to decrypt the file within the body of the email.
- i** A separate communication (not email) to notify the recipient of the password is essential. Relaying the password by phone is an ideal way to keep the password separate from the encrypted file.

Decrypt an encrypted file

1. To permanently decrypt a file, right-click on the file, select **7-Zip** and then select **Extract Here** from the 7-Zip sub-menu.



2. Enter the password when prompted. The file will be restored back to its original filename and icon. You can then work with the file as you would do normally.



- i** Encrypted files can also be extracted using other popular zip applications such as Winzip and WinRAR, should the recipient already have one of these alternative applications installed on their computer.

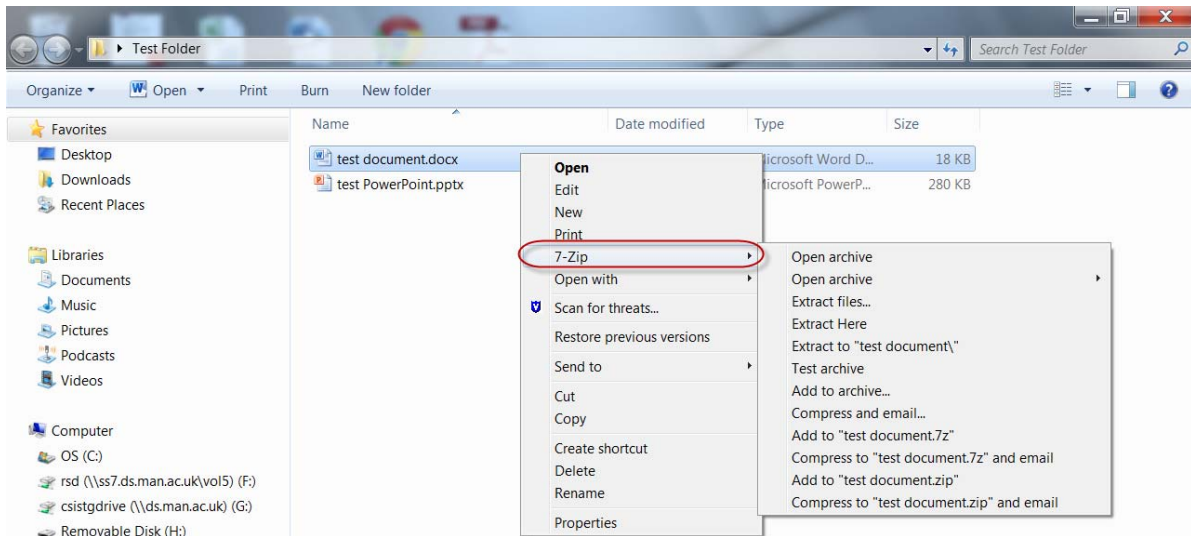
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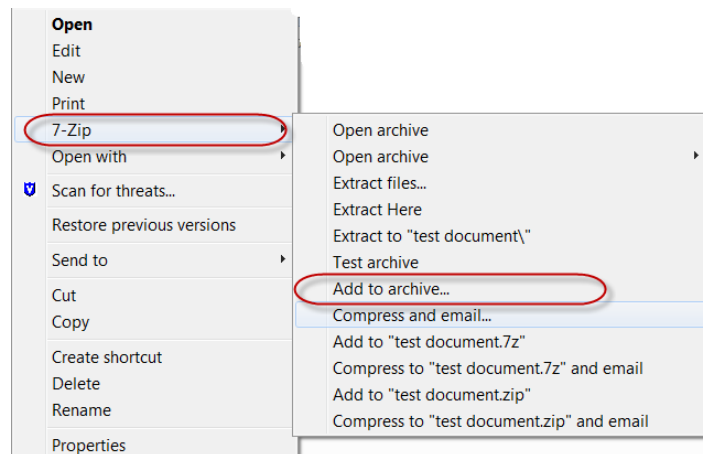
Create a self-extracting encrypted file

In this example you will encrypt a single file into a self-extracting archive which means that the recipient will not need to have 7-Zip installed on their PC.

1. Right-click on the file you want to compress/encrypt and you will see the 7-Zip option. This is where you will find most of the functionalities of 7-Zip.

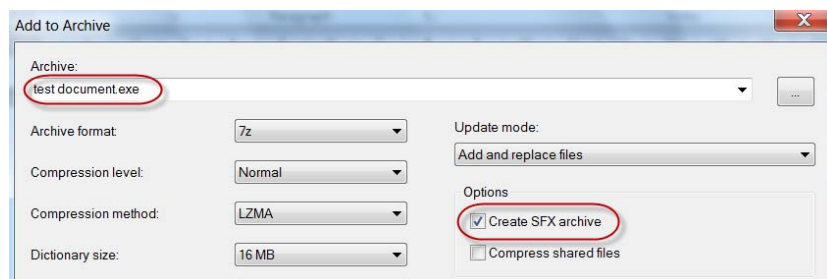
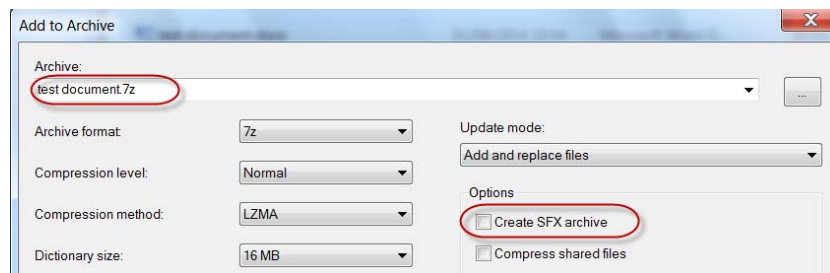


2. To encrypt a file **right-click** on the file, select **7-Zip** and then select **Add to archive....**

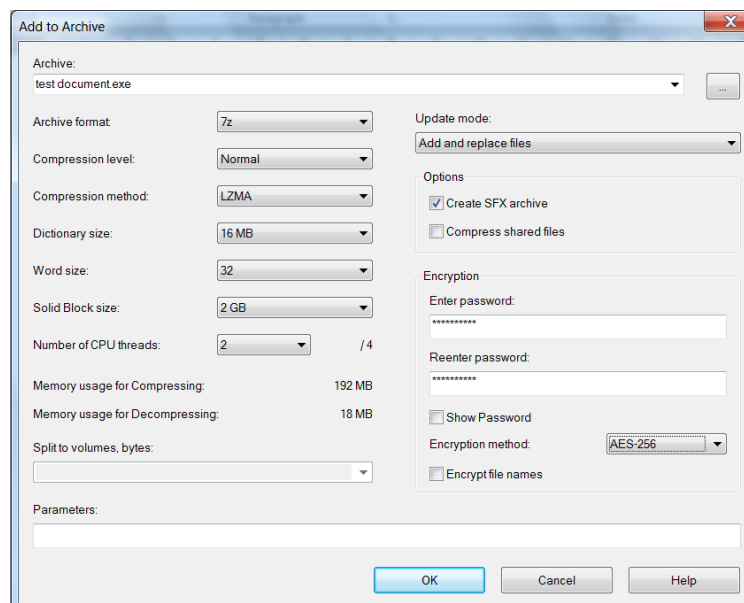


3. The default name of the Archive file will be the same as the file name. You can change the name by overwriting the existing name in the Archive field.

4. Tick the box for **Create SFX archive**. If this is grey out (not selectable), then ensure that the Archive format is set to **7z**. You will notice that the file name changes from eg 'testfile.7z' to 'testfile.exe'



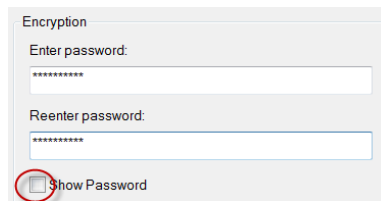
5. The remainder of the fields can be left at the default. Enter a password in the relevant field. IT Services recommend the use of a pass-phrase which for encryption purposes should be a minimum of 20 characters. The strength of a pass-phrase is critically dependent on its length, the range of characters used (upper/lower case letters, numbers, special symbols) and how randomly they're put together. Longer pass-phrases constructed in this way are more resistant to what is termed a 'brute-force attack'. You will then be required to re-enter the password.



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- You can click to **Show Password** to check that you have spelt the password correctly. If you do click this button, once you have checked the password be sure to un-check **Show Password**.



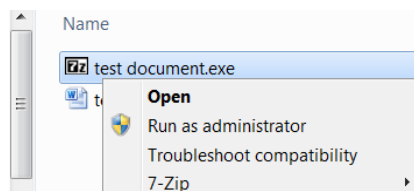
- Click **OK** to continue.

- i** Do not use your central University password as a password for 7-Zip.
- i** Make sure you remember your encryption password. If you lose or forget it you will have to re-compress/re-encrypt the original file.
- i** Further information with regards to securing data can be found via the following website <http://www.itservices.manchester.ac.uk/secure.it>

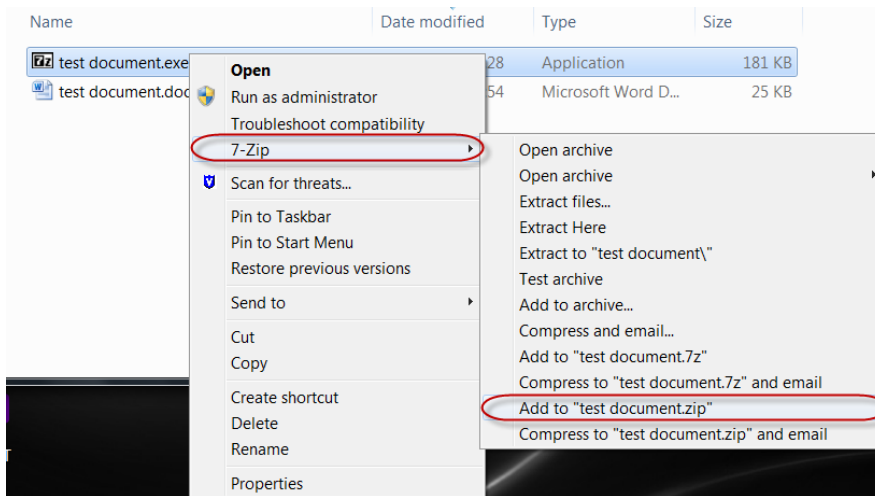
- The encrypted file is now displayed and available in the same location as the original file to be sent as an email attachment. The original file will be left in the same format on your computer.

Name	Date modified	Type	Size
test document.exe		Application	181 KB
test document.docx		Microsoft Word D...	25 KB

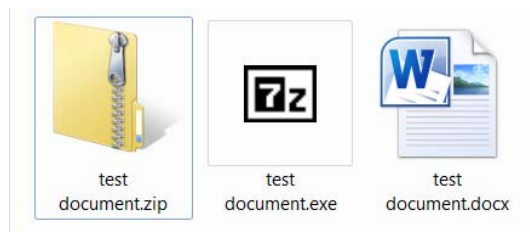
- i** The extension of the file has changed to 'exe' and the file size has increased.
- Most email systems prevent the transmission of executable files (.exe). Therefore, you will now need to either rename the file, changing the .exe suffix to something else, or create a zip file to contain the encryption file. However some mail systems also prevent the transmission of zip files which contain executables and you may need to check with the recipient.
 - To zip the file, right-click on the file ending '.exe' (in this example it is test document.exe)



11. Select **7-Zip** and then from the submenu **Add to 'test document.zip'** .



12. A generic archive file will now have been created in the same location as the original and the executable file.



The zip file contains a copy of the self-extracting file which Windows can open without any additional software being required. This zip file can now be emailed.

13. Please refer to Page 8 and follow the instructions on how to email an encrypted file including an attachment.

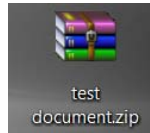
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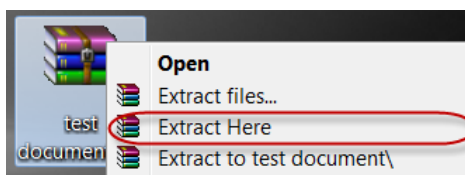
Decrypt/un-zip a file

The example shown below is based on using a piece of software called WinRAR. However, there is other software available to use.

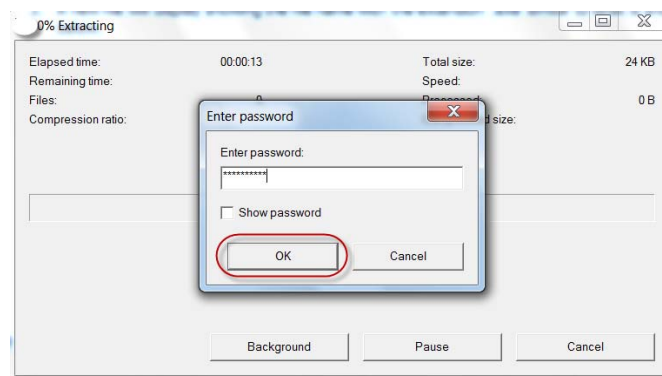
1. Save the attachment to a safe location on your computer.



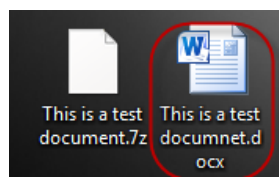
2. When the download completes right-click on the file and then select **Extract Here** from the WinRAR menu.



3. Enter the password to de-encrypt the file then click **OK**.

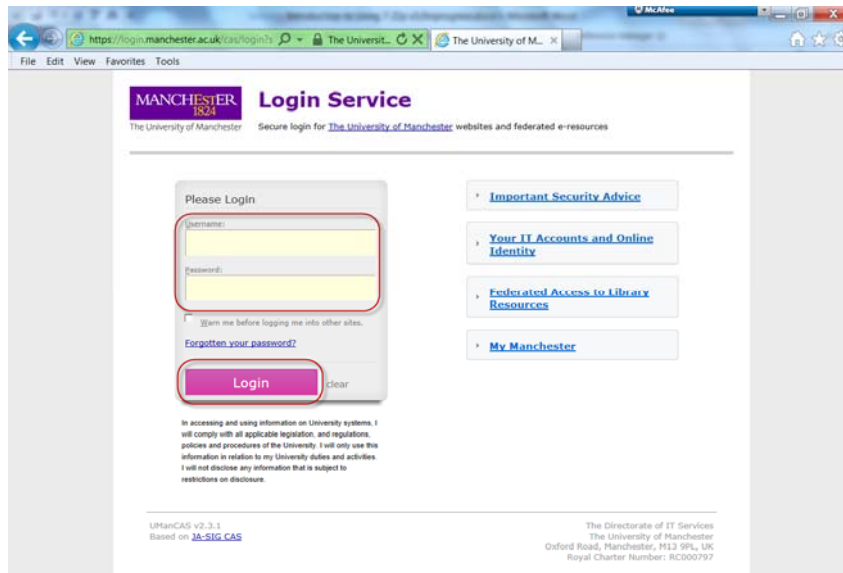


4. The file will be restored to its original filename and icon. You can then work with the file as you would do normally.

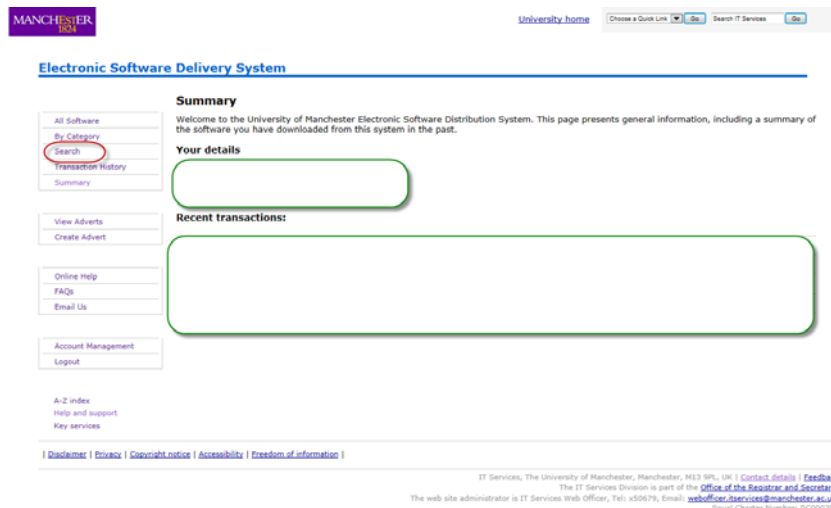


APPENDIX A Downloading and installing 7-Zip

1. You can download and install 7-Zip via the following website:-
<http://www.software.itservices.manchester.ac.uk/>
2. Enter your central username and password then click **LOGIN**

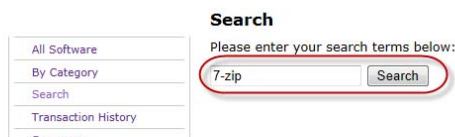


3. The Summary screen will be displayed if your login has been accepted. Click **Search** in the 'Browse Software' section on the left side of the page to display the search function of the website.



4. Type **7-Zip** into the search field then click **Search**.

Electronic Software Delivery System



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- Your search results should display a link to the recommended version of 7-zip. Click on the link for product information and to download the software. The software comes in 32-bit and 64-bit versions. If you are unsure what version your computer is then contact your IT Support department. You will then require 3MB of space on your computer hard drive to install the software.

7-Zip works with: Windows 7 / Vista / XP

The screenshot shows the University of Manchester Electronic Software Delivery System search results for '7-zip'. The page header includes the Manchester logo, 'University home', and search options. The main content area is titled 'Search Results' and shows 'You searched for '7-zip''. Two search results are listed: '7-Zip for Windows 32-bit' and '7-Zip for Windows 64-bit'. The '7-Zip for Windows 64-bit' link is circled in red. Below the search results is a 'Search again' section with a search box and a 'Search' button. On the left side, there are navigation links: 'All Software', 'By Category', 'Search', 'Transaction History', 'Summary', 'View Adverts', and 'Create Advert'.

- Click **Add to Basket** link and then **VIEW/CHECKOUT** in 'Your Basket' section on the right hand side of the screen.

The screenshot shows the product page for '7-Zip for Windows 64-bit' on the University of Manchester Electronic Software Delivery System. The page header includes the Manchester logo, 'University home', and search options. The main content area is titled '7-Zip for Windows 64-bit' and includes a 'Systems Functions' section. The product details are as follows: Manufacturer: 7-Zip; Operating System: Windows 98 and above; License Price: £ 0.00; Available to: Staff and students; Media type: MSI Installer. Below the product details is a description of 7-Zip as a file archiver with a high compression ratio, supported formats, and various features. On the left side, there are navigation links: 'All Software', 'By Category', 'Search', 'Transaction History', 'Summary', 'View Adverts', 'Create Advert', 'Online Help', 'FAQs', 'Email Us', 'Account Management', 'Logout', 'A-Z index', 'Help and support', and 'Key services'. On the right side, there are user details and a 'Your basket' section. The 'Add to basket' link is circled in red and labeled 'Step 1'. The 'View/Checkout' link in the 'Your basket' section is circled in red and labeled 'Step 2'.

- Click **Checkout now** to confirm your order.

Electronic Software Delivery System

All Software

By Category

Search

Transaction History

Summary

View Adverts

Create Advert

Your Basket

Item	Quantity	Price	VAT Exemption	Action
7-Zip for Windows 64-bit	1	£0.00	<input type="checkbox"/>	Remove

Actions

- Read the license agreement and tick the boxes to agree the terms and conditions. Then click **Continue**.

MANCHESTER
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University home

Choose a Quick Link Search IT Services

Electronic Software Delivery System

All Software

By Category

Search

Transaction History

Summary

View Adverts

Create Advert

Online Help

FAQs

Email Us

Account Management

Logout

A-Z index

Help and support

Key services

Checkout

Your licenses

Below is a list of the software which you have requested, along with their license agreements and restrictions. Please confirm you have read and agree to the terms of each license. You must agree to all the license terms to continue.

7-Zip for Windows 64-bit

License

This is the license for this software. Please read this license carefully.

Licensees for files are:

1) Tr.dll : GNU LGPL + unRAR restriction

2) All other files: GNU LGPL

The GNU LGPL + unRAR restriction means that you must follow GNU LGPL rules and unRAR restriction rules.

Restrictions

Please indicate that you have read and agree with the license below.

I agree to the license above

Due to end of financial year processes, any purchase you make of chargeable Adobe or Microsoft software prior to midnight on 4 July 2014 will be recharged to account codes in the current 2013/14 financial year. Purchases made after this deadline will be recharged to account codes in the forthcoming 2014/15 financial year.

Users

You have requested 1 license. Please enter the licensee details below. You may add additional licensees and increment or decrement the number of licenses you assign them by clicking less or more, then type in the name of the additional licensees.

Licensees Name
1 <input style="width: 100px;" type="text"/>

Click continue to complete the transaction and to proceed to download the software.

- You are now presented with a link to download 7-Zip. Click **7z920-x64.msi** link to save the download file on your computer.

MANCHESTER
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University home

Choose a Quick Link Search IT Services

Electronic Software Delivery System

All Software

By Category

Search

Transaction History

Summary

View Adverts

Create Advert

Online Help

FAQs

Email Us

Account Management

Logout

Your transaction is complete

You have successfully completed your transaction and a confirmation will be sent to you by e-mail. Please keep this e-mail for your records as it will also act as your licence certificate. If you requested licences in more than one name, you will receive multiple e-mails and you should pass these on to the appropriate licence holder for their records. If you do not receive an e-mail, please contact your service desk with the date and time of your transaction as shown below.

If you requested a VAT-exemption, please send a copy of your VAT exemption certificate covering this purchase by FAX to 0161 275 6071 [or 56071 internally], marked for the attention of IT Services Admin. Please include the transaction ID number as shown in your confirmation e-mail. You need to send this within 24 hours. If we do not receive a copy of your certificate, your transaction will not be VAT exempt and we will recharge you the full amount including VAT.

You may now optionally download your software or documentation by clicking the links below. Software which consists of multiple disks will have multiple entries.

Transaction details

This transaction was performed on **2014-07-30 11:17:21**.

7-Zip for Windows 64-bit

Media

7z920-x64.msi

MSI Installer

[How do I use this file?](#)

3 downloads remaining.

User details

You are logged in as

Your basket

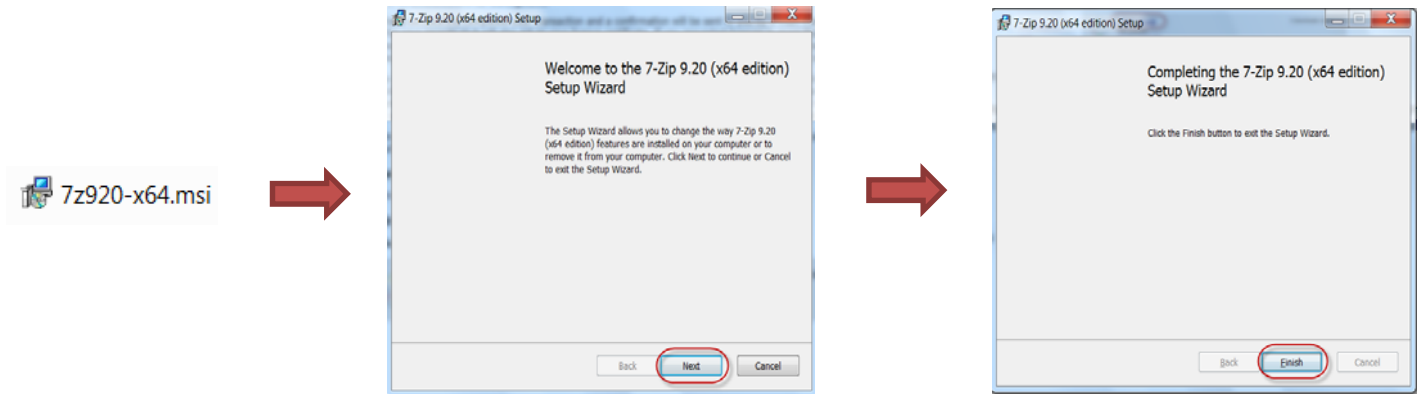
Your basket is currently empty.

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 An email will be automatically sent to you to confirm your order.

10. Double click on the msi file to start the installation and follow the default installation instructions to install 7-zip on to your computer. You will need to click **Next** several times. Click **Finish** to complete the installation.



Help and Further Reference

Below is a list of relevant support contacts and links in relation to policy documents, advice and training.

Training Documents and Advice

<http://www.itservices.manchester.ac.uk/secure-it/>

7-Zip

<http://www.7-zip.org>

IT Services Training Team (email)

its.training@manchester.ac.uk