



Provide a report on your findings from the pcap file and outline what processes / the steps you followed to achieve this. Here are each of your sub-tasks with additional instructions. Please record your findings under each sub-task title.

Sub-task 1:

- *anz-logo.jpg and bank-card.jpg are two images that show up in the users network traffic.*
- *Extract these images from the pcap file and attach them to your report.*

To find the images the user accessed called anz-logo.jpg and bank-card.jpg I followed the following process for both images:

First I filtered the packet capture for http traffic and looked through the remaining packets for the GET request that downloaded the image. I then right clicked the image and followed its TCP stream.

In the TCP stream I saw what looked like image data. In order to view the data in hex format, I changed the view to 'raw', and then searched the hex data for a jpeg's file signature.

After finding the file signature "FFD8" at the top, and the file footer "FFD9" at the bottom, I copied everything between those two points into the hex editor HxD and saved it as a jpg image.

This was the image I found for anz-logo.jpg:





This was the image I found for bank-card.jpg:

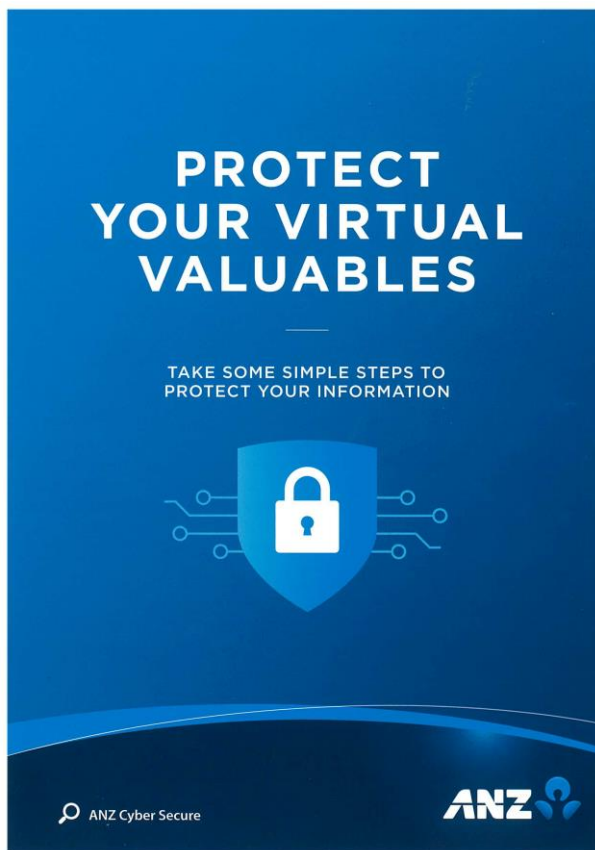


Sub-task 2:

- *The network traffic for the images "ANZ1.jpg" and "ANZ2.jpg" is more than it appears.*
- *Extract the images, include them and mention what is different about them in your report.*

I followed the same process to extract these images as I did in sub-task 1, which was to view the TCP stream, identify the images hex data, then copy and save that as a jpg file.

The image for ANZ1.jpg (Resized for report):



The difference in the network traffic for this images download I discovered was a hidden message in the data after the end of the image.

The message said "You've found a hidden message in this file! Include it in your write up."



The image for ANZ2 (also resized):

MAKE A 'PACT'

TO PROTECT YOUR VIRTUAL VALUABLES



PAUSE
before sharing your
personal information

Ask yourself, do I really need to give my information to this website or this person? If it doesn't feel right, don't share it.



CALL OUT
suspicious messages

Be aware of current scams. If an email, call or SMS seems unusual, check it through official contact points or report it.



ACTIVATE
two layers of security with
two-factor authentication

Use two-factor authentication for an extra layer of security to keep your personal information safe.



TURN ON
automatic
software updates

Set your software, operating system and apps to auto update to make sure you get the latest security features.

Report suspicious messages from ANZ:

Email hoax@cybersecurity.anz.com

Report fraudulent or unusual ANZ account activity:

137 028 / +61 3 8693 7153 (Corporate/Business Clients)

133 350 / +61 3 9683 8833 (Personal Banking Customers)

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This network traffic also had a message hidden in the same way.

It was "You've found the hidden message! Images are sometimes more than they appear."

Sub-task 3:

- The user downloaded a suspicious document called "how-to-commit-crimes.docx"
- Find the contents of this file and include it in your report.

In order to find the contents of the document, I had to view the TCP stream of the http get request for the file. The documents contents were visible in the ascii view.



The full document contained the message:

“Step 1: Find target

Step 2: Hack them

This is a suspicious document.

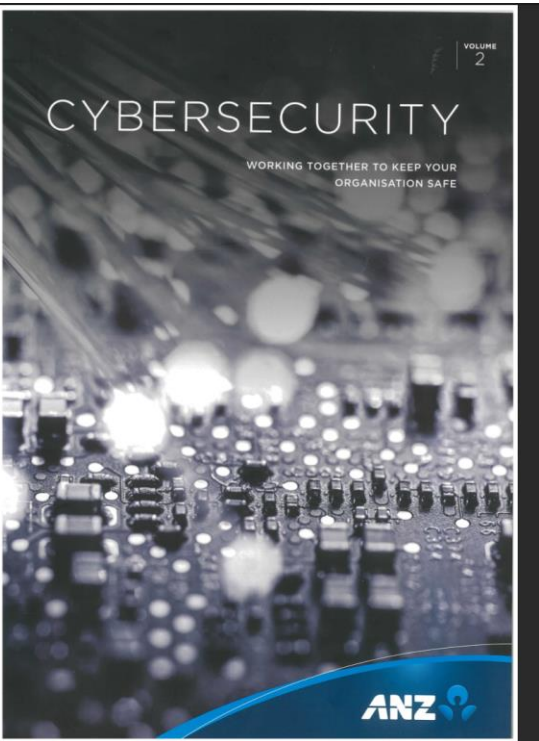
“

Sub-task 4:

- *The user accessed 3 pdf documents: ANZ_Document.pdf, ANZ_Document2.pdf, evil.pdf*
- *Extract and view these documents. Include images of them in your report.*

In order to view these PDF's I viewed the TCP stream as usual, and found the file signature for a PDF, which was the hex data “25 50 44 46”. I noticed in the ascii view that the PDF data went until the very end of the TCP stream, so I copied all the hex data from the file signature onwards into HxD and saved it as a pdf file.

The same process worked for all three files:



THE CHANGING CYBER THREAT LANDSCAPE

COMMON ATTACK VECTORS



AT A GLANCE

- Cyberattacks exploit any weakness in an organisation's people, process or technology infrastructure
- Using human to infiltrate organisations is a common factor in most current cyber threat attacks
- Effective processes together with an appropriate approach are crucial
- Organisations benefit from a risk-based management strategy - tailored to digital
- The ability to detect, control and adapt to new cyber threats will differentiate the strong from the weak
- Cyber resilience plans are essential - respect cyber disruption and prepare to deal with it while continuing to manage your business
- ANZ works with our clients to help keep them safe

CYBERCRIME INNOVATION

Cybercriminals continue to prosper. The Australian Cyber Security Centre (ACSC) released its 2017 Cybercrime Innovation Report, highlighting the growing involvement of overseas-based and increasingly sophisticated cybercriminals in the financial, retail, energy, health and government and public sector networks, increasing number of DDoS incidents, malware targeting and changes in the frequency, scale, sophistication and severity of cyber threats.

Cybercriminals are increasingly sophisticated in their methods and are increasingly responsible for causing significant financial damage to organisations through their criminal activities, to say a virtual form being abused. This includes when they use innovative methods to gain control of the execution of cybercriminal processes, such as

malware and other tools that many organisations are ill-equipped to deal with. However, cybercrime is not a business in itself, and success for the most part of multi-national organisations including customer support and banking providers by using their criminal products and services will be limited.

As a result of these cyberattacks, you must understand the changing landscape and risks. Cybercriminals continue to prosper because of their own expertise - people, process and technology. Cybercriminals have developed new methods to use in more of these elements to infiltrate the business to gain some financial advantage or exploit existing data releases of data at times, the international networks.

CYBERCRIMINALS INNOVATE, MAKE DECISIONS AND EXECUTE FASTER THAN MANY ORGANISATIONS ARE EQUIPPED TO DEAL WITH.

CYBERCRIME IN ACTION

In March 2017, a 233 page report was released by the Australian Cyber Security Centre (ACSC) titled 'Cybercrime Innovation Report 2017'. The report highlights the growing involvement of overseas-based and increasingly sophisticated cybercriminals in the financial, retail, energy, health and government and public sector networks, increasing number of DDoS incidents, malware targeting and changes in the frequency, scale, sophistication and severity of cyber threats.

The report also notes that cybercriminals are increasingly sophisticated in their methods and are increasingly responsible for causing significant financial damage to organisations through their criminal activities, to say a virtual form being abused. This includes when they use innovative methods to gain control of the execution of cybercriminal processes, such as malware and other tools that many organisations are ill-equipped to deal with.

The report highlights the growing involvement of overseas-based and increasingly sophisticated cybercriminals in the financial, retail, energy, health and government and public sector networks, increasing number of DDoS incidents, malware targeting and changes in the frequency, scale, sophistication and severity of cyber threats.

According to an IBM report, a spokeswoman said the most common cyber threat in 2016, IBM identified that the most common threat to organisations was the use of malware. The report also noted that the most common threat to organisations was the use of malware. The report also noted that the most common threat to organisations was the use of malware.

ANZ works with our clients to help keep them safe.



Sub-task 5:

- *The user also accessed a file called "hiddenmessage2.txt"*
- *What is the contents of this file? Include it in your report*

I viewed the TCP stream of this file, and noticed that instead of being plain text it was encoded data and when viewed as hex it had the same file signature as a jpg image.

So I copied and saved the hex data with HxD as I have for other images, and discovered that the text file was actually this image (resized):



Sub-task 6:

- *The user accessed an image called "atm-image.jpg"*
- *Identify what is different about this traffic and include everything in your report.*

I viewed the TCP stream as normal when investigating this traffic, and found two sets of jpeg file signatures instead of one like in the previous tasks.

I tried extracting both sets of data, and got two different images.

The first image:



The second image:



So the thing that is different about this traffic is that a single GET request performed by the user downloaded two images.

Sub-task 7:

- *The network traffic shows that the user accessed the image "broken.png"*
- *Extract and include the image in your report.*

The TCP stream for the broken.png traffic did not show any file signature for a png image. So while viewing the ascii form of the data, I recognized that the data was encoded in base64. Decrypting the base64 with an online tool resulted in png image data, which I copied into the "decoded text" section of HxD and saved as a png file.



That resulted in this image:



Sub-task 8:

- *The user accessed one more document called securepdf.pdf*
- *Access this document and include an image of the pdf in your report. Detail the steps to access it.*

After investigating the TCP stream for securepdf.pdf I discovered three things:

The data there was not for a PDF.

The bottom of the file contained the hidden message: Password is “secure”

It contained the file signature for a zip file, meaning that the what the user downloaded was actually a zip file.

So I copied the hex of the zip file into HxD and saved it as a zip file. I opened this zip file, and found it contained a pdf file called rawpdf.pdf. When opened, the pdf prompted for a password. The password ‘secure’ shown in the tcp stream worked, and the PDF opened. It was the first two pages to a guide for internet banking.



**YOUR GUIDE TO
ANZ INTERNET BANKING**

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