SteveMac MEDIA

How Safe is Your Data?

7 Steps of Hacking - 20th Feb 2018

Learning Objectives

You will:

- Understand the steps that hackers use to infiltrate companies and employees to steal their data
- Understand how hackers identify a target company or employee
- Understand why we all have a responsiblity to keep our data secure.
- Understand how targeted electronic equipment can be used to infiltrate companies or employees.
- Understand simple defences to protect yourself.

Recent Headlines

Password guru Bill Blur regrets past password advice in interview with Wall Street Journal August 2018

"Carbanak cybergang steals $1bn from 100 financial institutions worldwide"

500 million YAHOO user accounts had been breached in 2014 only coming to light in 2016

Rampant Ransomware encrypts files, holding business hostage

Fiat Chrysler recalls 1.4 million Jeeps after Jeep Cherokee Hack

Equifax exposes personal data of 143 million consumers

Ashley Madison infidelity site customer data 'leaked'

Data breaches following Cyber attacks in 2016 was in excess of 3.1 billion records leaked

KFC warns 1.2 million colonels club loyalty schem member of data breach

The ICO (Data Watchdog) fines Royal & Sun Alliance Plc £150,000 following the loss of the personal information of 60,000 customers

Does anyone know the global cost of cybercrime to the Global Economy?

It is estimated to cost the global economy more than

£338 billion every year and Projected to reach £1.5 trillion by 2019

McAfee, Net Losses: Estimating the Global Cost of Cybercrime (June 2014) & Steve Morgan Forbes Tech column

What is an Ethical Hacker?

An ethical hacker is a **computer and network expert**, employed to attack a system on behalf of its owners, seeking vulnerabilities a malicious hacker could exploit.

What is the difference between:

an amateur hacker
&
a professional hacker?

Our Expertise

the Observer 29 October 1995

RAF covertly taps mobile phones

'Special dispensation' by DTI threatens privacy

Peter Beaumont
Defence Correspondent

A SECRETIVE Royal Air Force unit dedicated to gathering and preserving electronic intelligence is monitoring calls on Britain's public mobile telephone networks – despite acknowledging the risk of accidentally eavesdropping on private conversations.

The Observer has established that 381 Signals Unit, based at RAF Digby in Lincolnshire, has been monitoring mobile calls since at least the middle of this year, after the forming defensive monitoring of RAF radio frequencies and their own telephones and has ceased to spot people discussing classified material on open lines or frequencies.

Until last year the RAF was prevented from monitoring mobile calls under the 1990 Interception of Communications Act. Now, however, the unit has been given special permission by the Department of Trade and Industry to monitor mobile telephone traffic.

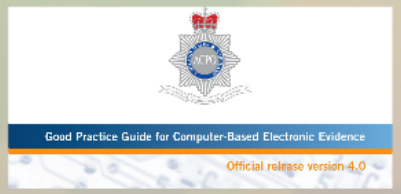
The new exemption to the Act follows concern over the increased use of portable telephones by RAF personnel and about telephone monitoring across the three armed services.

Labour MP Chris Mullin said: 'There is obvious scope for abuse. Like most people, I am very surprised that the RAF should be able to listen in to open public networks and I believe we should be told more about this.

'The issue is to be raised by Labour's Shadow Defence Secretary, David Clark, who is to ask which other mobile phone networks are being monitored by the armed forces.

A spokesman for the RAF conceded that the new law had

Source: Observer 29th October 1995



http://www.7safe.com/electronic_evidence/ACPO_guidelines_computer_evidence_v4_web.pdf

Certifications

CERTIFIED FORENSIC INVESTIGATION PRACTITIONER
CFIP
COMPUTER FORENSICS

CERTIFIED SECURITY TESTING ASSOCIATE
CSTA
ETHICAL HACKING

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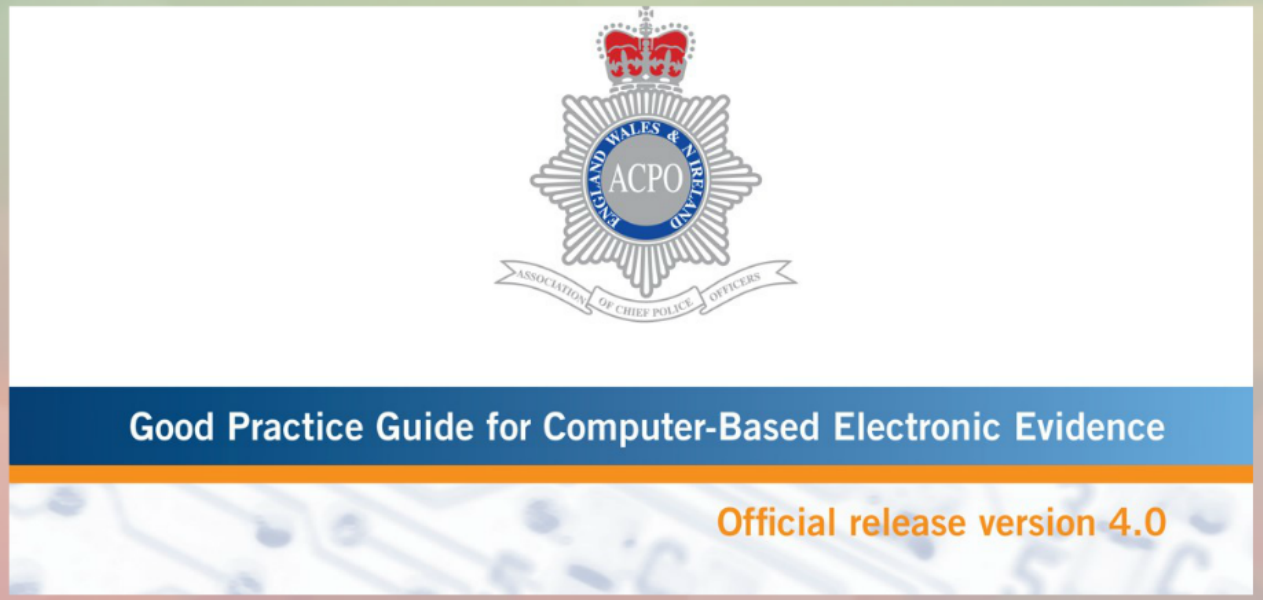

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Who is at risk?

Chip and PIN terminal users

Businesses with competitors

Large organisations

Anyone with a computer!

7 Steps to Hacking

Step 1
Information Discovery

Research the target

Dumpster diving
Social Engineering
Real World Gathering
Companies House
Current clients
Company Website
The Internet!
Company Testimonials

Step 2
Target Scanning

Identify potential entry points

Physical access or virtual?

Determines a hacker's chosen method of attack

Step 3
Vulnerability Assessment

The information gathered from steps 1 & 2 helps the hacker decide on the best method of attack

This is determined by the hacker

Selecting the path of least resistance

Step 4
Exploiting the weakness

Virtual access example

The Trojan Email

Physical access example

The Trojan Keyboard

Step 5
Privilege Escalation

Establish self as a trusted user

Gain administrative privileges

All computers, printers and devices are now exposed to the hacker

This is know as "owning the network"

Step 6
Retaining Access

Owning the network allows you to:

Open other routes/backdoors into the network

Complete the required task for the original hack

Step 7
Covering Tracks

Hide the evidence of being hacked

Retain anonymity, ranging in severity Changing file metadata and permissions, Corrupting files, folders and Master Boot Records

Back out of the computer or network

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Email servers

Standard router credentials

Insecure wireless networks

Remote web workplace

Outlook web access

Targeted electronic equipment

Remote Desktop

Physical Access

Disgruntled employee or former employee

Lax security and procedures

Third party contractors, e.g. agency staff

Targeted electronic equipment

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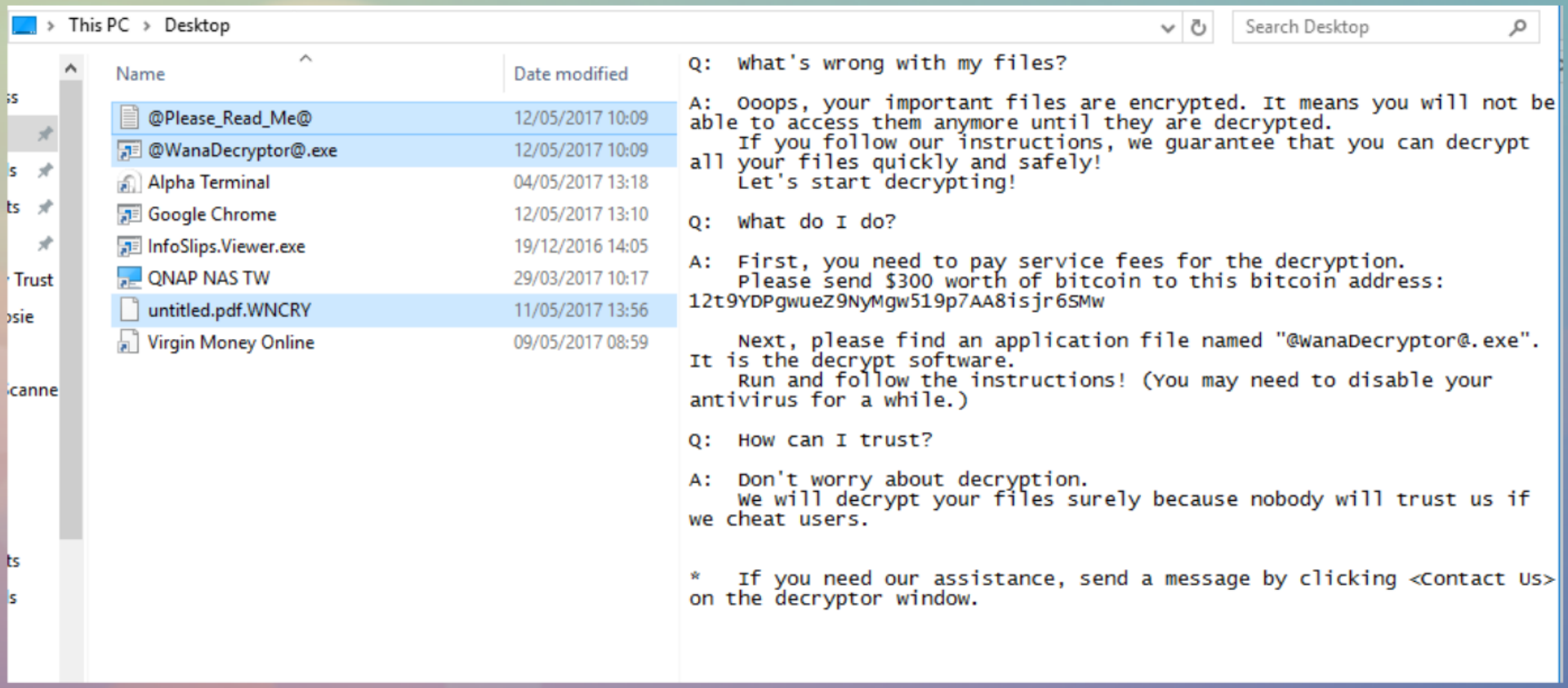
How much does it cost to become James Bond?

James Bond's Budget	
'Spy sunglasses	£225
key-fob recording device	£175
Nokia charger recording device	£200
Keystroke logger	£35
'Spy watch'	£100
Bugged phone	£200
Total	**£935**

Wanacrypt Ransomware Example



Simple rules for a first line of defence

Educate your employees about the risks

Install all security updates when released

Consider information you place on the web

Ensure all internal firewalls are always on

Introduce clear desk policies

Vet third-party contractors

Get Cyber Crime Insurance

Lock unattended computers

Check user rights regularly

Avoid writing passwords down...

Password Policies

Minimum 13 characters

Avoid significant names, dates and places

Develop a system to remembering a password comprising of:

circa four random and unconnected words

Include numbers

Include special characters such as

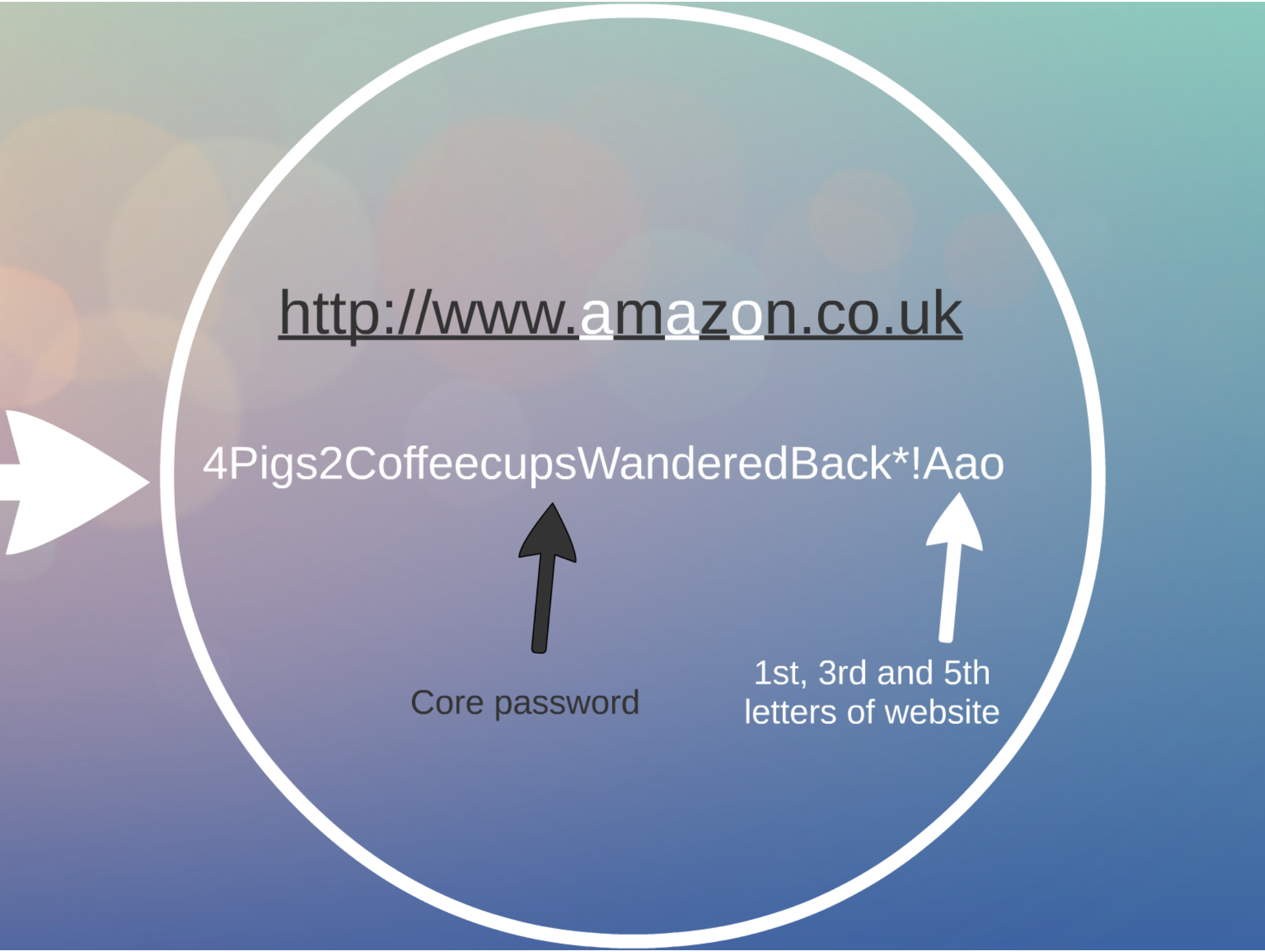
*** ! @ £ % - + =**

Example Core Password

4Pigs2CoffeecupsWanderedBack*!

Website specific

Core password, plus 1st, 3rd and 5th letters of the website address


http://www.amazon.co.uk
4Pigs2CoffeecupsWanderedBack*!Aao
Core password
1st, 3rd and 5th
letters of website

National Cyber Security Centre

Password security

Attackers use a variety of techniques to discover passwords, including using powerful tools freely available on the internet. The following advice makes password security easier for your users – improving your system security as a result.

How passwords are cracked...

Interception

Passwords can be intercepted as they are transmitted over a network.

Brute Force

Automated guessing of billions of passwords until the correct one is found.

Searching

IT infrastructure can be searched for electronically stored password information.

Stealing Passwords

Insecurely stored passwords can be stolen – this includes handwritten passwords hidden close to a device.

Manual Guessing

Personal information, such as name and date of birth can be used to guess common passwords.

Shoulder Surfing

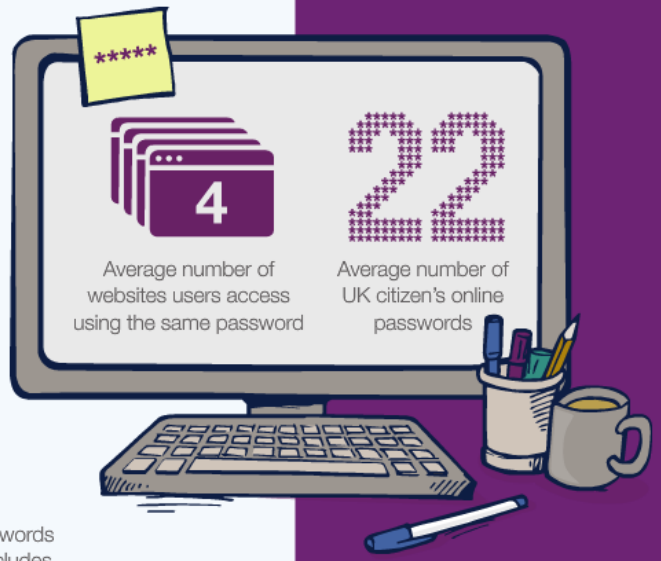
Observing someone typing their password.

Social Engineering

Attackers use social engineering techniques to trick people into revealing passwords.

Key Logging

An installed keylogger intercepts passwords as they are typed.



...and how to improve your system security

Help users cope with 'password overload'

- Only use passwords where they are really needed.
- Use technical solutions to reduce the burden on users.
- Allow users to securely record and store their passwords.
- Only ask users to change their passwords on indication of suspicion of compromise.
- Allow users to reset password easily, quickly and cheaply.

Help users generate appropriate passwords

- Put technical defences in place so that simpler passwords can be used.
- Steer users away from predictable passwords – and ban the most common.
- Encourage users to never re-use passwords between work and home.
- Train staff to help them avoid creating passwords that are easy to guess.
- Be aware of the limitations of password strength meters.

Blacklist the most common password choices

Monitor failed login attempts… train users to report suspicious activity

Prioritise administrator and remote user accounts

Don't store passwords in plain text format.

Change all default vendor supplied passwords before devices or software are deployed

Use account lockout, throttling or monitoring to help prevent brute force attacks

For more information go to **www.ncsc.gov.uk** **@ncsc**

Summary

The higher up the tree you are,
the safer you will become

To beat a hacker...
you need to think like one!

Any Questions?

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