OSINT

Beware. Your data is out there.

Porto.TechHub – 27/10/2023

$whoami

- Pedro Vieira
- Security Engineer @Bosch
- Certified Ethical Hacker
- Degree at University of Minho
- Porto.TechHub – Conference 2023
- 27 outubro | 16H00 | Secondary Stage

BOSCH

We want our products and solutions to spark enthusiasm, enhance the quality of people's lives, and help conserve natural resources.

In short, we aim to create technology.

Invented for life

Disclaimer & Laws

Disclaimer
Boring but necessary

- Information in this presentation is intended for **educational and awareness purposes only**.

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- This presentation **is not related** to my work or employer.

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Avoid illegal activities

- Some links, websites, software or other items listed may or **may not be legal**, illegal, a felony, misdemeanor, or worse, in your country.
- Please make sure that you are **allowed** to browse the websites, download links and software **BEFORE USING**!
- Ignorance about laws or rules is **no excuse** for illegal activities or wrongdoing.
- Illegal activities may get you in **trouble or arrested**.
- **Always check what is legal, and what laws apply**.

Laws
Portuguese Law and Organizations

- Laws
  - Diário República Eletrónico (link)
  - ANACOM (link)
- Organizations
  - CNCS – Centro Nacional de Cibersegurança (link)
    - Incident Notification (link)
    - CERT.PT (link)
  - Unidade Nacional de Combate ao Cibercrime e à Criminalidade Tecnológica (UNC3T) (link)
  - Ministério Público (link)

OSINT Time

“Information is not knowledge”

Albert Einstein

OSINT – Open-source intelligence
Digital Footprint

- Open-source intelligence (OSINT) is the collection and analysis of data gathered from open sources (overt and publicly available sources) to produce actionable intelligence. (Wikipedia)

- It's about digital footprint. Gathering information from:
  - search engines (Google, …)
  - social media (Facebook, …)
  - government sites
  - …

- The constant battles:
  - Privacy vs Publicaly available information
  - Convinience vs Security

Search, and then search again

Who Am I
Let’s OSINT me ☺

- Just got a name
  - Pedro António Oliveira Vieira
- Google (link) ➡
- Google “Improved Search” (link) ➡
- Google “Improved Search” (link) ➡
- LinkedIn (link) ➡
  - Public profile was showing way too much

- Certified **Ethical** Hacker (link) ➡

- My github notes (link)

Search Engines
Internet is more than Google

- Different search engine → different rules/crawlers → different results

- Google (link)
- Bing (link) ➡
- Yahoo (link)
- DuckDuckGo (link) ➡
- Baidu (China) (link)
- Yandex (Russia) (link)

- You may ask to be removed from one search engine, not all ☹ (link)

Search operators
Improve the search

- Google Advanced Search (link) ➡

- **filetype**: search your results based on the file extension
- **cache**: This operator allows you to view cached version of the web page.
- **allinurl**: This operator restricts results to pages containing all the query terms specified in the URL.
- **inurl**: This operator restricts the results to pages containing the word specified in the URL
- **allintitle**: This operator restricts results to pages containing all the query terms specified in the title.
- **link**: This operator searches websites or pages that contain links to the specified website or page.
- **info**: This operator finds information for the specified web page.
- **location**: This operator finds information for a specific location.

- **42 Advanced Operators** (link)

Google Dorks
Commonly used searches

- Google Hacking Database (link) ➡
- gbhackers (link)
- google-dork-list (link)
- Google Advanced Operators Guide (link)
- Google Advanced Operators Reference (link)

Awareness

Who are YOU
Search yourself

- Search your name on Google and analyze the results
  - As you saw the search can be improved

- Some results can/will include:
  - Family and Friends
  - Work
  - School grades
  - BI - Identity Card Number (yes)
  - NIF – Tax Identification Number

- That is typically information to **verify your identity** over a phone call.

Awareness
The internet sees you

- Posted information privately can get publicly and world available by someone else
- When information is posted
  - Shows where you are at that time (habits & routines)
- Information on the picture
  - Metadata/Geolocation
- What companies know about us (link)
- What do we teach our kids? Do we teach?
  - They are connected/exposed to 5,19 billion people (64,6% of world population)
- Social networks
  - If you don’t have a social media account, I’ll create one for you and talk to your friends and family

Internet Search

Internet Search
Pay slip

- Don’t open links just because they are available.
  - It’s like entering a house just because the door was open. Would you do that ?

- Google Search (link) ➡ (link)
- Bing Search (link) ➡
- Yahoo Search (link) ➡
- “recibo de vencimento” filetype:pdf
  - “recibo de vencimento” – keywords to look for
  - filetype:pdf - only pdf files

- Available information on pay slips
  - Full name, address, nif, nib, marital status, number of children, …

Internet Search
Hacked Websites

- Google Search (link) ➡

- allintitle:“hacked by” site:pt
  - “hacked by” - keyword to look for
  - site:pt - only “portuguese” sites (registered portuguese domains)

- About 10.400 results
  - Sites / pages that were “tagged”/”signed”
  - Attack and contents changed to show off skills (mainly kids) – compared to street tagging

Internet Search
Curriculum Vitae

- Google Search (link) ➡
- Google Search - List site/directories contents (link) ➡
- “curriculum vitae” filetype:pdf inurl:upload
  - “curriculum vitae” – keywords to look for
  - filetype:pdf - only pdf files
  - inurl:upload
- Curriculum Vitae
  - Sending CV with too much information – what is too much ☺
    - Home address – Street View
- Professional information phishing
  - Fake job adds (Is this a thing?)

True stories

True stories
Healthy Meal

- Someone posted a photo of healthy meal during COVID
  - Working remotely on in the usual business environment
  - Company laptop was in the background
    - Zoomed in and was possible to read emails
    - Company private information could be leaked
    - Personal information on other persons was showing
  - Social Media Apps use OCR
    - Means they also read the emails
    - And everyone else on that social media could get the same information

True stories
Quiet vacations

- Long last deserving vacations
  - Too many friends at destination
  - So, warn no one and just relax on vacations
- I posted a picture on social media
  - My friends were alerted I was nearby
  - Friends on that location called me on the phone
  - Everyone else knew I was not home
    - Burglars love that kind of information
    - Not public profile. At least I think it is not (rules change)
    - Someone could have shared the photo with the world

True stories
Store Credit

- Buying a book for almost no money
  - How I was able to get money just by having the right information
  - Store clerk asked for store customer card
  - Gave mobile number and full name
  - Store clerk asked if I wanted to use balance credit
  - I accepted and little had to pay
  - Mobile and full name were not mine ☺

True stories

Customer Information – GDPR where are you?

- taxpayer identification number
  - Requesting invoice with NIF
  - Invoice filled with:
    - Name
    - Address
- Phone number
  - Updating client data in store
    - Email and address
- Returing equipments
  - On returning was asked for Citizen Card

Awareness
Browser F12

- 1 - Type url on browser
- 2 - Page is requested from the internet
- 3 - Page is displayed from local data (previously downloaded)

- Show password text on password field
- Did you ask for a screenshot
  - Let me just change some data

OSINT Portugal

OSINT
Portugal – Public contracts

- Base (link)
  - The example (link) ➡
- PDF of contract with PII strikethrough (link)
  - Open with pdf reader and delete the strikethrough boxes
  - Name of employee who edited the document
    - Information on UA, LinkedIn, Facebook, …
  - Metadata: “KONICA MINOLTA bizhub C454”
- Information leaked
  - Full Names, nif, addresses

OSINT
Portugal – Vehicle Information

- Automóvel On-line (link)
- Certidão Permanente Automóvel (link)
  - License Plate : “89-QS-04” (link)
  - Result
    - Brand: MERCEDES-BENZ
    - VIN: WDD2221631A248762
  - Example (link)

- Vehicle Information (link)
  - Example (link)
  - Information: Brand, Model, Location, Paint, Delivery Date, Extras, …
- Hack across the globe by VIN (link)

OSINT
Portugal –Insurance Information

- ASF – Autoridade de Supervisão de Seguros e Fundos de Pensões (link)
  - Example (link)
    - License Plate : “01-EF-34”
    - Date : “03-07-2022”
  - Example 2 (link)
    - License Plate : “01-EF-34”
    - Date : “03-07-2012”
- Insurance Company
  - Current and Past
  - Length of the contract
  - Insurance policy number
  - Is it possible to get information for all license plates ????

OSINT
Portugal

- DGES - Direção-Geral de Ensino Superior (link) (link) ➡
- DGAE - Direção – Geral da Administração Escolar (link) ➡
- DRE - Diário da República (link)
  - Search DRE (link) ➡
- Ministério da Justiça – Publicações (link) ➡
- Tribunal de Contas (link)
- Instituto Nacional da Propriedade Industrial (link) ➡

OSINT
Portugal

- Registo Predial Online (link)
- Finanças - Penhorados (link)
  - Example (link) ⇨
  - Search Penhorados – (link)
- Ministério da Justiça - Penhorados (link) ⇨
- Plataforma Eletrónica de Compras (Administração Pública) (link)
- Leaked information:
  - Full Names, Addresses, NIF, Company, Marital Status, …

OSINT

OSINT
Profiling Awareness

- What's my IP? (link)
- Ip2Location (link)
- Mylocation (link) ➡
- Twitter
  - Twitter Advanced Search (link) ➡
- Facebook
  - StalkFace (link)
  - Sowdust Github (link)
  - IntelligenceX Facebook Search (link)

OSINT
Profiling Awareness

- Mobile (how long have you been using the same number)
  - Sync me (link)
- Usernames (you reuse usernames)
  - NameChk (link)
  - WhatsMyName (link) ➡
  - NameCheckup (link) ➡
- Tinder
  - Username reuse (link) ➡
- New awesome tools are always being created

OSINT
(Reverse) Image search

- One image is worth 1000 words, maybe more.
  - What information can be extracted from a photo ?

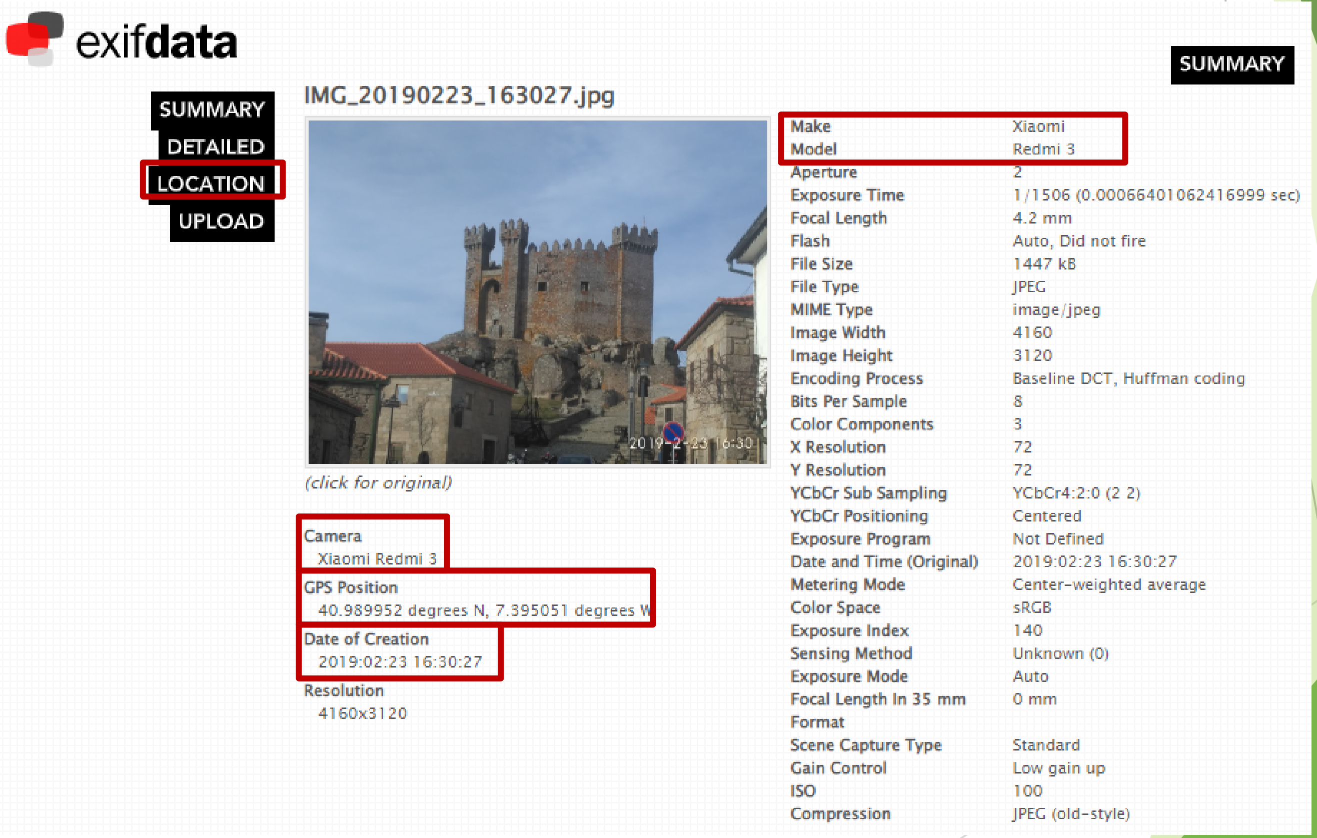
- Google Images (link)
- Bing Images (link) ➡
- Yahoo Images (link)
- Tineye (link)

- Yandex (link)

- The professionals (video explaining) (link)

OSINT - Photos Metadata

- Metadata
- GPS (link)
- Google Maps (link)



exifdata

SUMMARY

SUMMARY

DETAILED

LOCATION

UPLOAD

IMG_20190223_163027.jpg

(click for original)

Camera
Xiaomi Redmi 3

GPS Position
40.989952 degrees N, 7.395051 degrees W

Date of Creation
2019:02:23 16:30:27

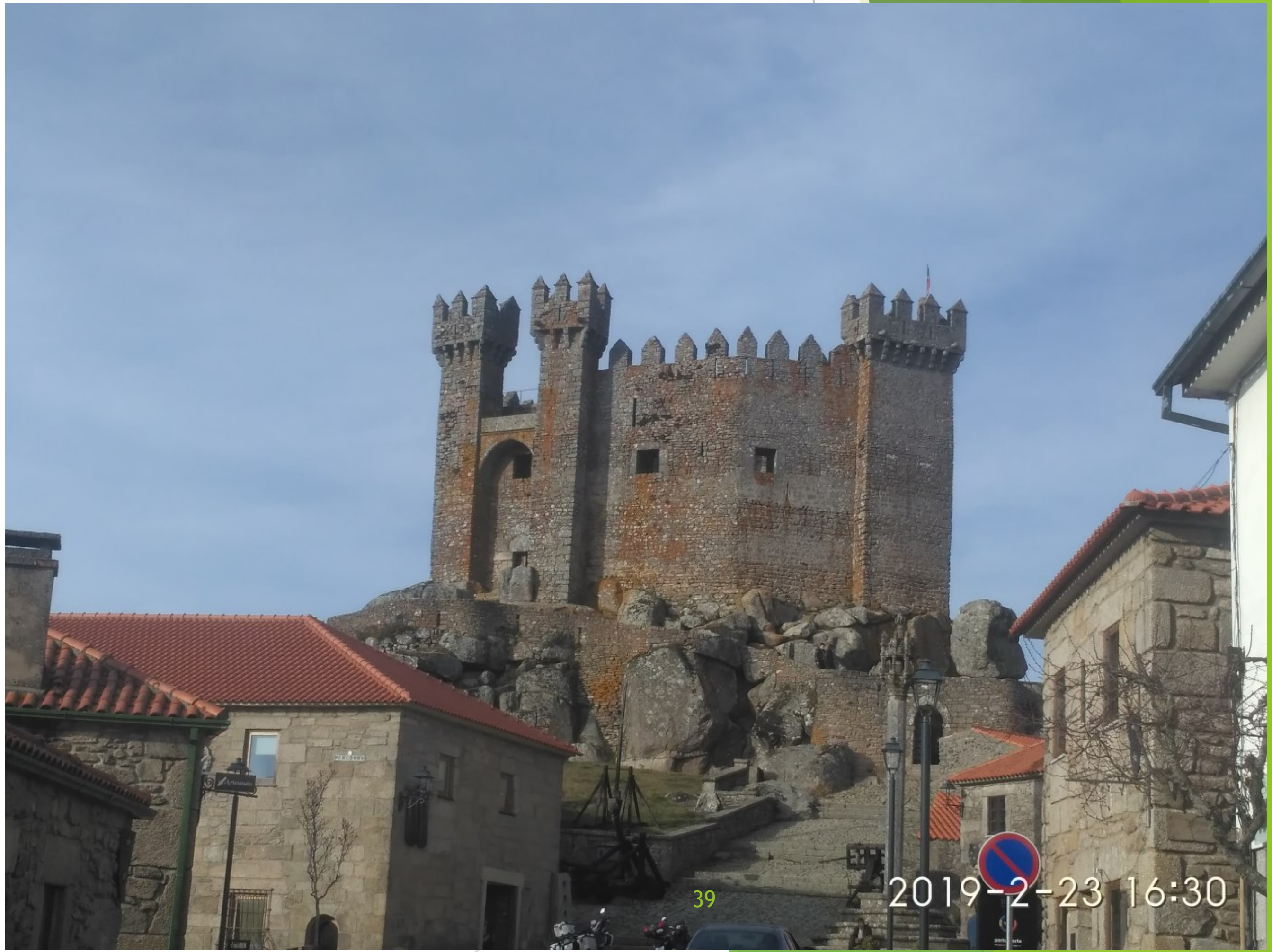
Resolution
4160x3120

Make	Xiaomi
Model	Redmi 3
Aperture	2
Exposure Time	1/1506 (0.00066401062416999 sec)
Focal Length	4.2 mm
Flash	Auto, Did not fire
File Size	1447 kB
File Type	JPEG
MIME Type	image/jpeg
Image Width	4160
Image Height	3120
Encoding Process	Baseline DCT, Huffman coding
Bits Per Sample	8
Color Components	3
X Resolution	72
Y Resolution	72
YCbCr Sub Sampling	YCbCr4:2:0 (2 2)
YCbCr Positioning	Centered
Exposure Program	Not Defined
Date and Time (Original)	2019:02:23 16:30:27
Metering Mode	Center-weighted average
Color Space	sRGB
Exposure Index	140
Sensing Method	Unknown (0)
Exposure Mode	Auto
Focal Length In 35 mm Format	0 mm
Scene Capture Type	Standard
Gain Control	Low gain up
ISO	100
Compression	JPEG (old-style)

OSINT - Photos
No Metadata but still lots of Information

- Where was this image taken?
  - Have you been there?
- When?
  - Date stamp on photo
  - Filename with date
  - Metadata
- What else?
- Image search
  - Identify the castle? ⇨

- CleanUp (link) ⇨
- AperiSolve (link) ⇨



OSINT
Street View

- Google Street View (link)
  - Identify house by address
  - Assess security (cameras, fences, …)
  - Parked cars (timeline, …)
  - People’s habits/routines, timetables, …
- View the past – timeline (link) ➡
- Instant Street View (link)

OSINT
Maps and Satellites

- Google Maps (link)
- Bing Maps (link)
- Wikimapia (link)
- Overpass Turbo (link) ➡
  - Wizard: plant:source=nuclear
- DualMaps (link)
- Tips, Tricks and Techniques (link)

- Zoom Earth (link)
- Satellites Pro (link)
- World Imagery (link)
  - Wayback (link)
  - Wayback example (link) ➡
- View the past - timeline

OSINT MEMORY
Internet in the past

- Wayback Machine (link)
  - Example (link) ⇨
- Archive.is (link)
- Cached Pages (link)
- Cached View (link)
- OldWeb.Today (link)
- Time Travel (link)

- Github commits ☺

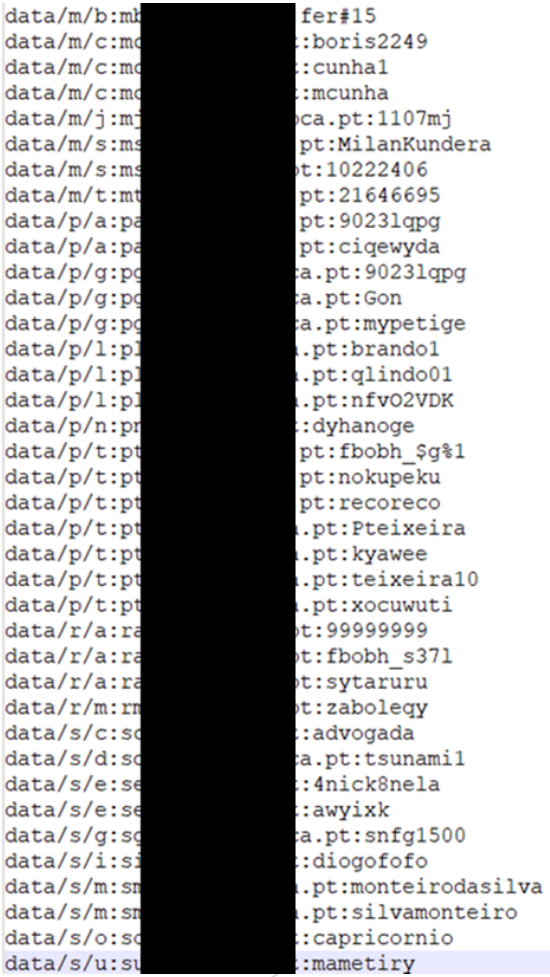
Databreach

Databreach
Is not a thing of the past

- Troy Hunt
  - HaveIBeenPwned (link)
  - Pwned websites (link)
- Ashley Madison Breach 2015 (link)
  - When private data gets public
- Piracy - Subtitles
  - Don’t think you can hide – **Illegal activities are tracked**
- Companies are leaking all your information
  - Compromised data: Dates of birth, Email addresses, Employers, Family structure, Genders, Income levels, Living costs, Marital statuses, Mothers maiden names, Names, Phone numbers, Physical addresses, Places of birth, Religions, Spouses names

Databreach
Company credentials ?

- Source
  - Publicly available list of credentials
  - More than 10k credentials just for Bosch
- Information gathered
  - Rule of email/login
    - (FirstName.LastName)@(Country).(company).com
  - Rule of password complexity
  - List of users
    - Phishing campaigns
    - Brute force
    - Look for those users on Social Media
- HaveIBeenPwned (link) ⇨

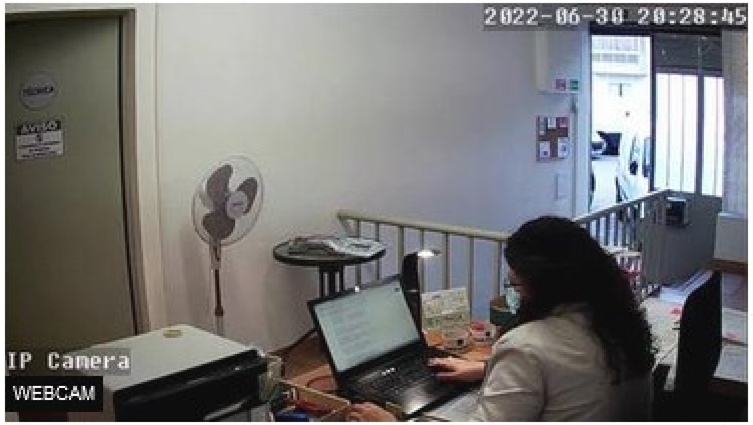


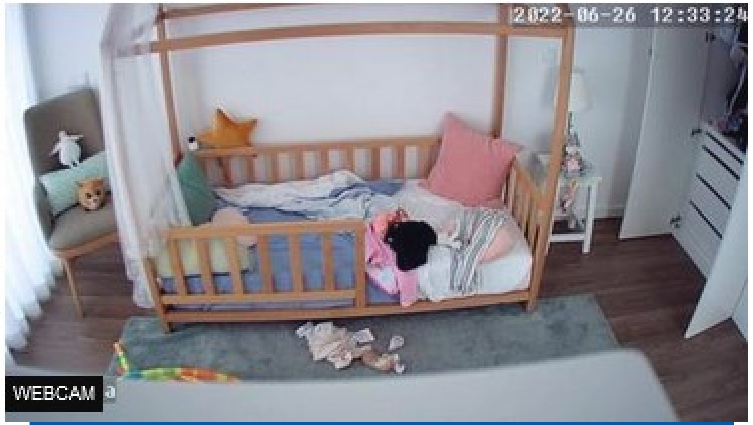
```
data/m/b:m[redacted]fer#15
data/m/c:m[redacted]:boris2249
data/m/c:m[redacted]:cunha1
data/m/c:m[redacted]:mcunha
data/m/j:m[redacted]ca.pt:1107mj
data/m/s:m[redacted]pt:MilanKundera
data/m/s:m[redacted]t:10222406
data/m/t:m[redacted]pt:21646695
data/p/a:p[redacted]pt:90231qpg
data/p/a:p[redacted]pt:ciqewyda
data/p/g:p[redacted]a.pt:90231qpg
data/p/g:p[redacted]a.pt:Gon
data/p/g:p[redacted]a.pt:mypetige
data/p/l:p[redacted].pt:brando1
data/p/l:p[redacted].pt:qlindo01
data/p/l:p[redacted].pt:nfvO2VDK
data/p/n:p[redacted]:dyhanoge
data/p/t:p[redacted]pt:fbobh_$g%1
data/p/t:p[redacted]pt:nokupeku
data/p/t:p[redacted]pt:recoreco
data/p/t:p[redacted].pt:Pteixeira
data/p/t:p[redacted].pt:kyawee
data/p/t:p[redacted].pt:teixeira10
data/p/t:p[redacted].pt:xocuwuti
data/r/a:r[redacted]t:99999999
data/r/a:r[redacted]t:fbobh_s371
data/r/a:r[redacted]t:sytaruru
data/r/m:r[redacted]t:zaboleqy
data/s/c:s[redacted]:advogada
data/s/d:s[redacted]a.pt:tsunami1
data/s/e:s[redacted]:4nick8nela
data/s/e:s[redacted]:awyixk
data/s/g:s[redacted]a.pt:snfg1500
data/s/i:s[redacted]:diogofofo
data/s/m:s[redacted].pt:monteirodasilva
data/s/m:s[redacted].pt:silvamonteiro
data/s/o:s[redacted]:capricornio
data/s/u:s[redacted]:mametiry
```

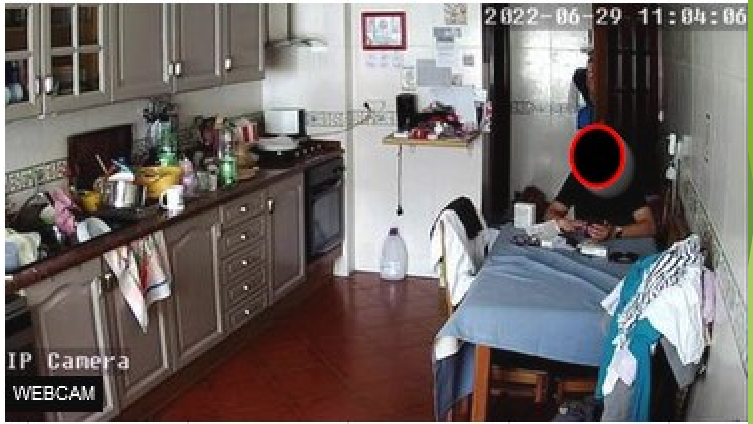
SHODAN

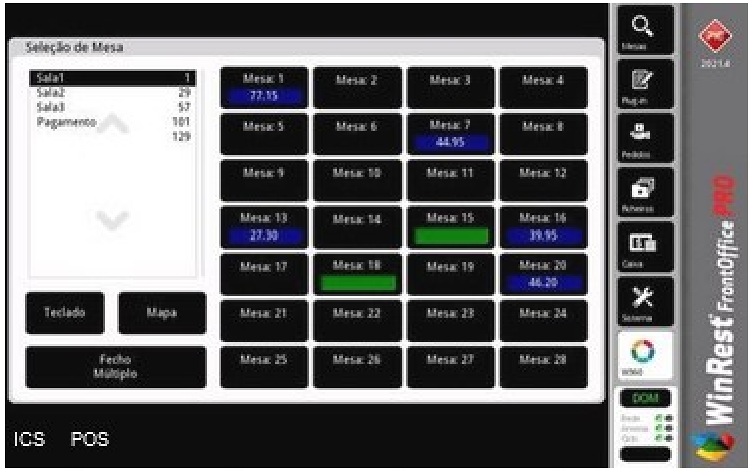
Shodan

Internet of Things - Images



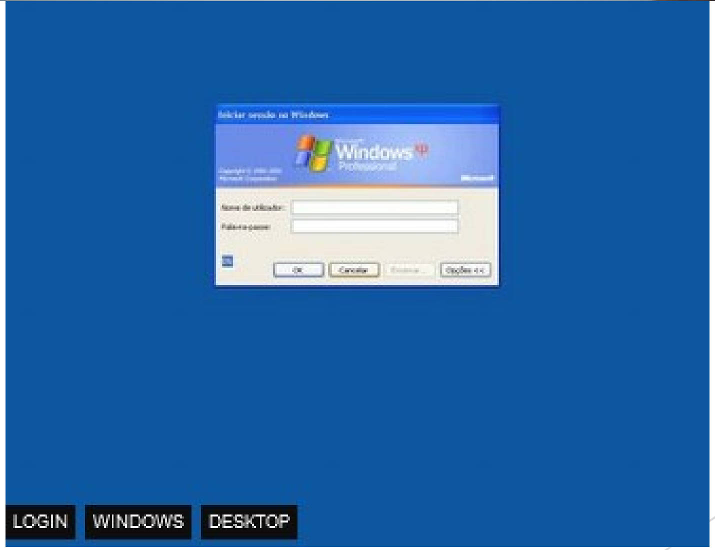





Seleção de Mesa

Sala1	1
Sala2	29
Sala3	57
Pagamento	101
	129

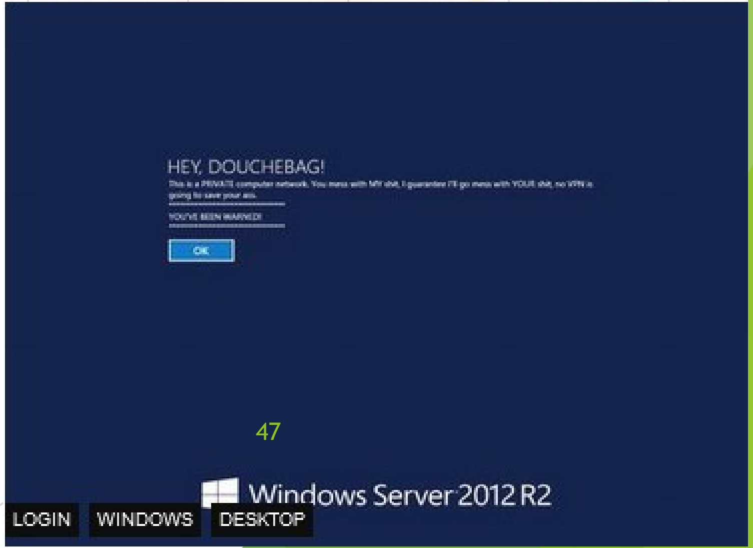
Mesa: 1 77.15	Mesa: 2	Mesa: 3	Mesa: 4
Mesa: 5	Mesa: 6	Mesa: 7 44.95	Mesa: 8
Mesa: 9	Mesa: 10	Mesa: 11	Mesa: 12
Mesa: 13 27.30	Mesa: 14	Mesa: 15 🟩	Mesa: 16 39.95
Mesa: 17	Mesa: 18 🟩	Mesa: 19	Mesa: 20 46.20
Mesa: 21	Mesa: 22	Mesa: 23	Mesa: 24
Mesa: 25	Mesa: 26	Mesa: 27	Mesa: 28


Iniciar sessão no Windows

Windows XP Professional

Nome de utilizador:

Palavra-passe:

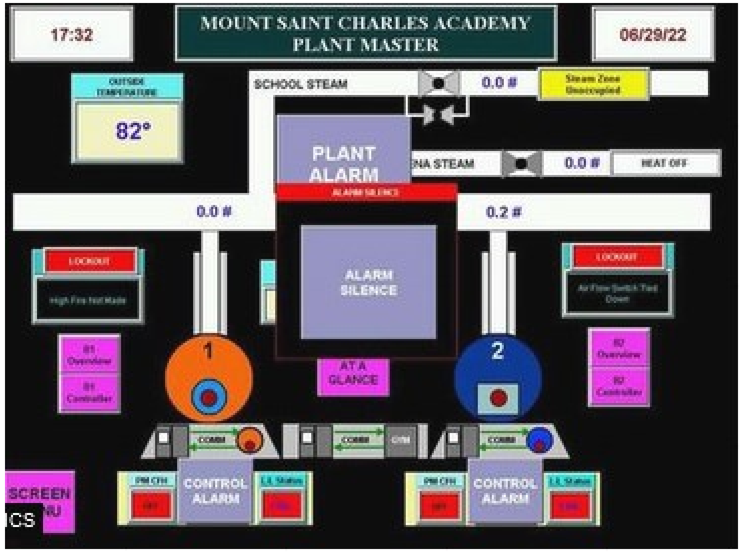

HEY, DOUCHEBAG!

This is a PRIVATE computer network. You mess with MY shit, I guarantee I'll go mess with YOUR shit, no VPN is going to save your ass.

YOU'VE BEEN WARNED!

Shodan
Industrial Control Systems

- Industrial Control Systems (link)


MOUNT SAINT CHARLES ACADEMY PLANT MASTER

17:32

06/29/22

OUTSIDE TEMPERATURE 82°

SCHOOL STEAM 0.0 #

Steam Zone Unoccupied

NA STEAM 0.0 #

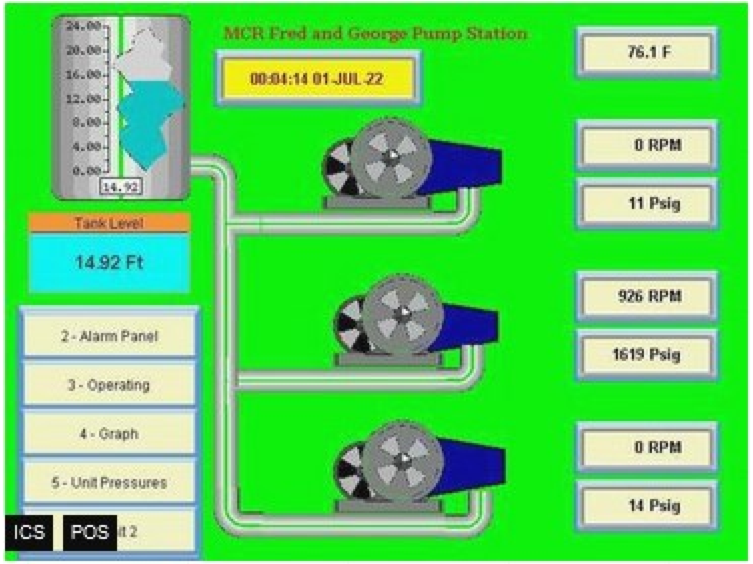
HEAT OFF

0.0 #

0.2 #

LOCKOUT High Fire Not Made

LOCKOUT Air Flow Switch Tied Down


MCR Fred and George Pump Station

00:04:14 01-JUL-22

Tank Level 14.92 Ft

76.1 F

0 RPM

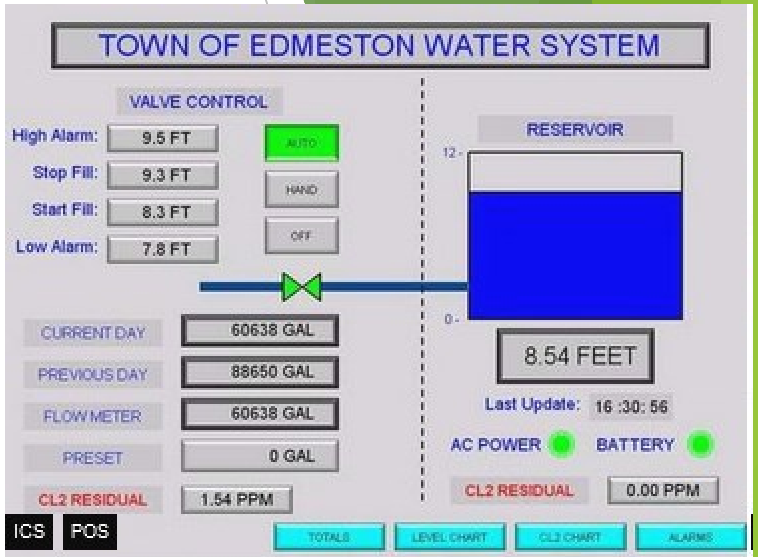
11 Psig

926 RPM

1619 Psig

0 RPM

14 Psig


TOWN OF EDMESTON WATER SYSTEM

VALVE CONTROL

High Alarm: 9.5 FT

Stop Fill: 9.3 FT

Start Fill: 8.3 FT

Low Alarm: 7.8 FT

CURRENT DAY 60638 GAL

PREVIOUS DAY 88650 GAL

FLOW METER 60638 GAL

PRESET 0 GAL

CL2 RESIDUAL 1.54 PPM

RESERVOIR

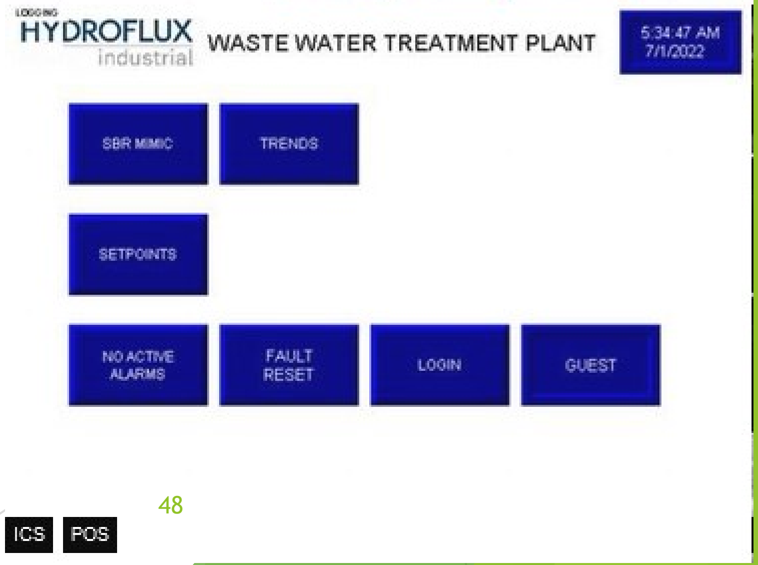
8.54 FEET

Last Update: 16 :30: 56

AC POWER ●

BATTERY ●

CL2 RESIDUAL 0.00 PPM


HYDROFLUX industrial

WASTE WATER TREATMENT PLANT

5:34:47 AM 7/1/2022

Shodan
Internet of Things

- Internet Exposure Observatory
  - Exposure Dashboard (link)
- Explore
  - Shodan explore (link)
- Images
  - Shodan images (link)
- Maps
  - Shodan maps (link)

- Remote Desktop (link)
  - Total results: 3,482,756
  - Braga (link) ⇨
- Imagens
  - Braga (link)
  - VNC Remote Access and Loggedin (link) ⇨
- Authentication Disabled
  - Portugal (link) ⇨
  - Primavera (link)
- Contabilidade (link) ⇨

Before you start OSINTing

Don’t get under the spotlight.

OSINT Notes
My notes and some links

- My OSINT notes (link) ➡
  - OSINT (Presentation)
  - Awareness (Presentation)
- Sofia Santos - How to do a small OSINT investigation (blog) (video)
- Michael Bazzel – IntelTechniques (link) (book) (magazine)
- OSINT Combine (link) (bookmarks)
- OSINT Dojo (link)
- OSINTCurio.us (link)
- OSINT Techniques (link)
- Start.me pages (link) (example) ➡
- Technisette (link)
- Open Source Intelligence Tools and Resources Handbook 2020 (link)

CTF
Capture The Flag & Challenges

- TraceLabs CTF (link) (notes)
- Hacktoria (link) (notes)
- Cyber Detective CTF (link)
- Cyber Investigator CTF (link)
- TryHackMe (link)
  - Search for OSINT (link) (notes)
- Blue Team Labs Online - Cyber Range (link)

OSINT
Tools & more tools

- OSINT FRAMEWORK (link) ➡
  - Yups, only one link is all it takes. But others worth mentioning.

- OSINT4ALL (link) ➡
- Intel Techniques (link) ➡
- OSINT Techniques (link)
- Technisette (link)
- Cyber Detective (link)
- OSINT Link (link)
- Aware Online (link)

Why is information important?

AITI – Brunei Darussalam

Authority for Info-communications Technology Industry of Brunei Darussalam

Deutsche Telekom
Message from Ella | Without Consent

Deadly Social Media
The Final Hours of Pop Smoke

- Rapper Pop Smoke Murdered in Home Invasion ... By 4 Masked Gunmen (link) ➡
- Instagram Posts
  - Location Tag
- Geolocation
  - Reverse Image
- Google Maps
  - Local Recon
- Airbnb/Zillow (Rent/Real-estate)
  - House photos (Outside and Inside)
  - Layout

- YouTube Video: The Cyber Mentor (link)

ONLINE SAFETY

Helping Tools
Privacy

- VPN (Different country, different advertisements, what else ?)
  - ProtonVPN (link)
- Temporary Email (Need to register? Activate software?)
  - 10 minute email (link)
  - 20 minute email (link)
- Disposable Email
  - 60 minute email (link)
- Internet Access (DarkWeb included)
  - Tor (link) (internet browser)
  - Tails (link) (OS that runs on usb or VM)

  - Extreme Privacy Book (link)

Helping Tools
Safety

- VirusTotal
  - Check received files (link) ➡
    - (**don’t upload Personal or Company related information**)
- Netcraft
  - Sitereport (link) (check for suspicious sites)
- Ransomware
  - No More Ransom (link) ➡
- Virtual Credit Card (online shopping)
  - Mbnet (link) ➡
  - Revolut (link)
  - PayPal (link)

Free to Share

- Feel free to use/modify/share
- Teach someone
- Improve awareness