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“Covid-19 and its impact on the Security Posture in Healthcare"

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CASE ANALYSIS «Psychotherapy Center Vastaamo»

abc NEWS LOG I

Finland shocked by therapy center hacking, client blackmail

Finland's interior minister has summoned key Cabinet members into an emergency meeting Sunday after hundreds — and possibly thousands — of patient records at a Finnish psychotherapy center were accessed by a hacker or hackers now demanding ransoms

By **JARI TANNER Associated Press**

26 October 2020, 02:28 • 3 min read

October 21st, 2020

"Psychotherapy Centre Vastaamo announced that it had become a victim of a data system break-in and extortion."

Press release October 26, 2020: «Investigation into the Vastaamo data system break-in – shortcomings in information security in the background»

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RESULTS of the investigation at the Psychotherapy Centre Vastaamo determined:

- Break in have been possible until mid-March 2019;
- The database wasn't stolen after November 2018; however, some individual data items have been viewed /copied;
- There was additional data breach in mid-March 2019.
- As result of request to fill police reports, till November 10t, 2020 there was filled 25000 reports according to the National Bureau of Investigation of Finland,

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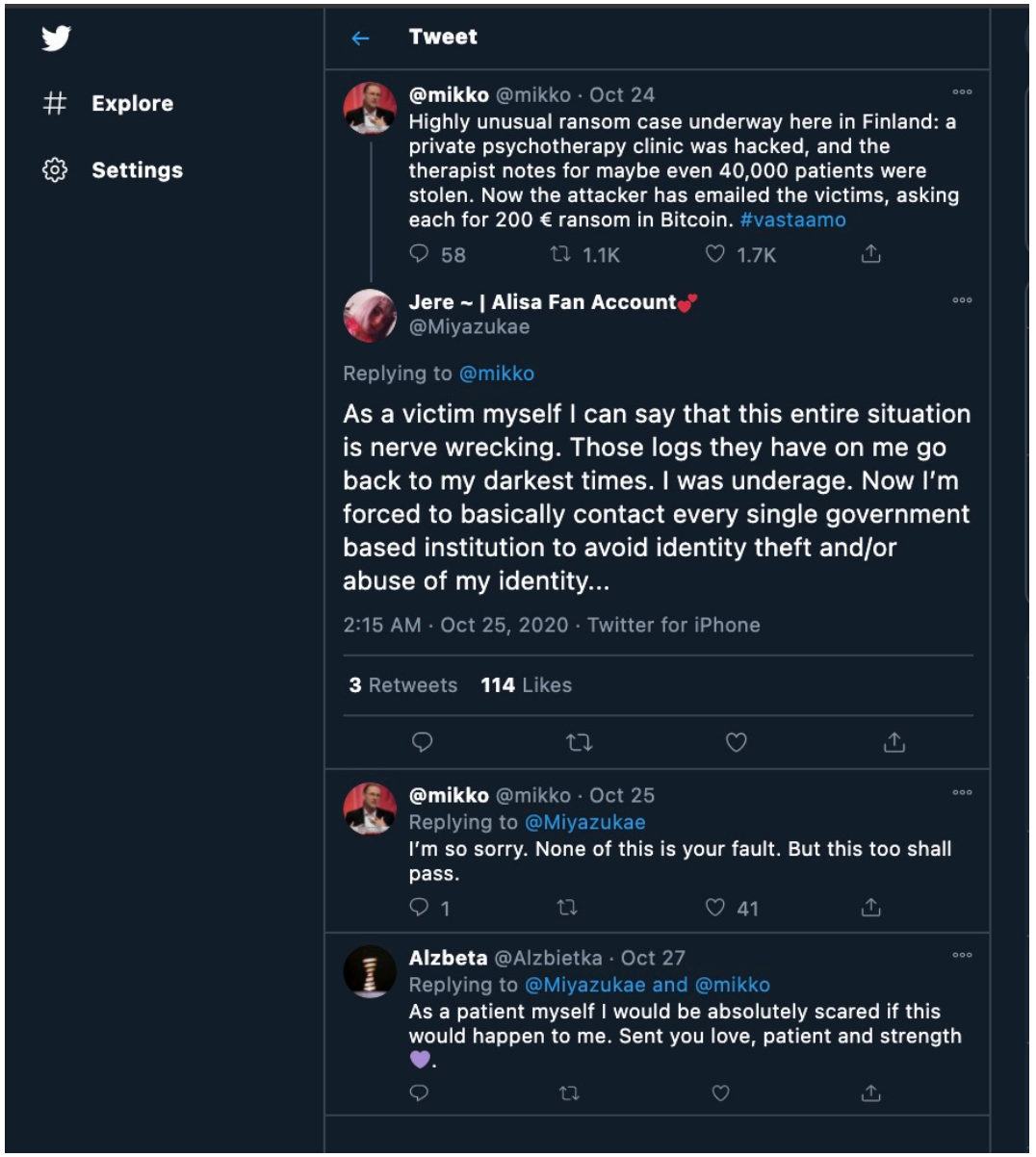
IMPACT ON HUMAN LIFE

FINANCIAL IMPACT



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Covid-19 on the Security Posture in a Healthcare environment?

STAGE 1

- Catalogue: Online Presence. Catalogue Presentation. Downloadable Forms

STAGE 2

- Transactions: Services and Forms On-line. Working Databases supporting online transactions

STAGE 3

- Vertical Integrations: Local systems linked to higher level systems; Within similar functionalities

STAGE 4

- Horizontal Integration: Systems integrated across different functions; - Real one stop shopping for citizens.

e-government is not static, but is constantly changing environment, which consist of following stages, (Karen Layne, 2001):

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WEAKEST POINTS

ROUTERS - It is very difficult from the InfoSec viewpoint treat the router as BYOD.

? Do you have policies and guidelines, which can be align to telework and applies directly to a router security management and privacy according to the GDPR?

Source:insight.tech

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ASSUMPTION, that **you will be able to update a router**, to maintain required security level – not always tur, due to:

- Some manufactures don’t provide updates at all;
- Some manufacturers sell product, which cannot be updated, due to limitation of initial product design;

Some ROUTERS have:

- add-on software firewall for additional fee;
- built- in hardware firewall;
- provide a Cloud management

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Peter Weidenbach and Johannes vom Dorp

“Home Router Security Report 2020”

Fraunhofer Institute for Communication, Information Processing and Ergonomics FKIE

- Attention paid on 127 routers
- following versions were found from the Linux Kernel 2.4.20 to the Linux Kernel 4.4.60.

https://www.fkie.fraunhofer.de/content/dam/fkie/de/documents/HomeRouter/HomeRouterSecurity_2020_Bericht.pdf

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Version of Linux Kernel	Initial publishing date	Number of vulnerabilities listed at the https://cve.mitre.org/
Linux Kernel 2.4.20	November 29th, 2002	4, oldest -2002, newest - 2003
Linux Kernel 2.6.22	July 8th, 2007	18, oldest - 2005, newest - 2012
Linux Kernel 2.6.31	September 9th, 2009	21, oldest – 2009, newest - 2015
Linux Kernel 2.6.35	August 1st, 2010	16, oldest – 2010, newest - 2011
Linux Kernel 2.6.36	October 20th, 2010	36, oldest – 2010, newest - 2014
Linux Kernel 3.10.10	August 30th, 2013	1, oldest/newest - 2013
Linux Kernel 3.10.14	October 1st, 2013	316. oldest - 2013 , newest – 2019 (https://www.cvedetails.com/)
Linux Kernel 3.10.20	November 20th, 2013	47, oldest -2014, newest – 2019 (https://www.cvedetails.com/)
Linux Kernel 3.10.39	May 6th, 2014	194, oldest – 2014, newest – 2019, (https://www.cvedetails.com/)
Linux Kernel 3.10.49	July 17th , 2014	194, oldest - 2014, newest – 2019 (https://www.cvedetails.com/)
Linux Kernel 3.10.70	February 26th, 2015	194, oldest - 2015, newest – 2019 (https://www.cvedetails.com/)
Linux Kernel 3.14.43	May 17th, 2015	189, oldest - 2017, newest – 2019 (https://www.cvedetails.com/)

Without detailed look at each vulnerability, it cannot be assumed, that all of them can be applied towards router and its built-in hardware limitations. However, there is necessary only for one weakest link in the chain, or one weakest spot in the metal crystal structure.

Conclusion – Takeaway

1. Focus on **People-Process-Product**, when you try to determine at which e-government stage your company, organization, division, etc. currently exist;

2. Create **audit of all routers** in your organization – including those, which are used by your personnel to work from home and determine:

- How old is the device?
- Does it have latest updates?
- Can it be updated?
- Does it provide any firewall functions?
- Does it support VPN function?
- Does it capable to close ports above 1023 or it only able to manage ports from 0 to 1023, and rest of ports are open by the device?

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Conclusion – Takeaway

If the router is used as BYOD, when working from home, does it provide adequate security level?

For IP address scaning you can use: https://www.shodan.io/ ,

it will allow you to determine whether on the network are exploitable devices, which can be used either to acquire/monitor your organizations personnel or be used to exploit your company with malicious intent;

Useful Links:

ARTSS projekts ietver informāciju par drošiem pamatservisiem (https://artss.rtu.lv/lv**)**:

- **IKT** infrastruktūras un datortīkla apdraudējumu identificēšana
- **Droši telemedicīnas servisi** : Prasības IKT nodrošinājumam telemedicīnas servisu nodrošināšanai
- **Droši attālinātā darba servisi** : Efektīvas komunikācijas sistēmas risinājums
- **Droši biznesa servisi** : Mobilitātes nodrošināšanas servisi ārkārtas situācijās

The Cavalry isn't coming. It falls to you. Be a voice of reason.
Drive cybersecurity for public safety and human life.
https://iamthecavalry.org/

Securing Telehealth Remote Patient Monitoring Ecosystem https://www.nccoe.nist.gov/projects/use-cases/health-it/telehealth

Regarding Vastaamo – update by Wiliiam Ralstom "A dying man, a therapist and the ransom raid that shook the world", published on January 10th, 2020 https://www.wired.co.uk/article/finland-mental-health-data-breach-vastaamo

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