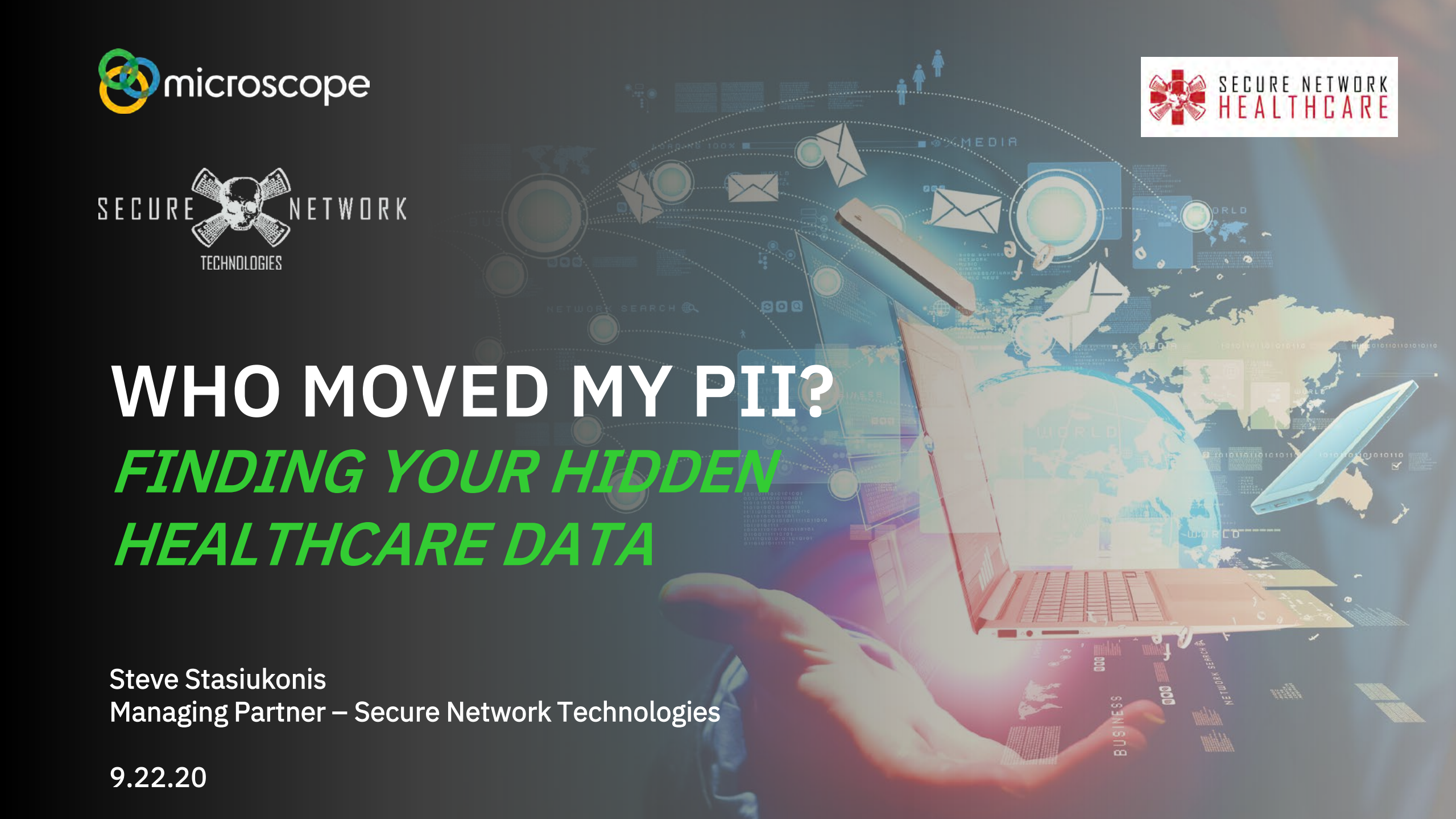

WHO MOVED MY PII?

FINDING YOUR HIDDEN HEALTHCARE DATA

Steve Stasiukonis
Managing Partner – Secure Network Technologies

9.22.20

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HOW TO GET CPE

1. At some point during the webinar, please be sure to type a message or question into the chat OR question box.
2. Be sure to complete the survey (evaluation) at the end of the webinar.

*If there is an issue with your chat box/question box or if your evaluation does not populate, please email Jackie Al-Nwiran @ jackieA@microscopeHC.com to receive credit.

CPE Certificates will be emailed out next week.

*Questions: There will be time allotted at the end of the presentation for a brief Q&A. You can type your questions throughout the presentation into the question box and they will be answered in the order in which they were received.

* This presentation will be available in PDF format by request.

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TODAY'S PRESENTER

Steve Stasiukonis

Managing Partner – Secure Network Technologies

Steve focuses on Penetration Testing, Information Security Risk Assessments, Incident Response and Digital Investigations. Steve has worked in the field of Information Security since 1997. As a part of that experience, Steve is an expert in Social Engineering and has demonstrated actual social engineering efforts involving pretexting, phishing and physically compromising financial institutions, data centers and other secure facilities. Steve has contributed to Darkreading and Information Week since 2006.

SECURE  NETWORK

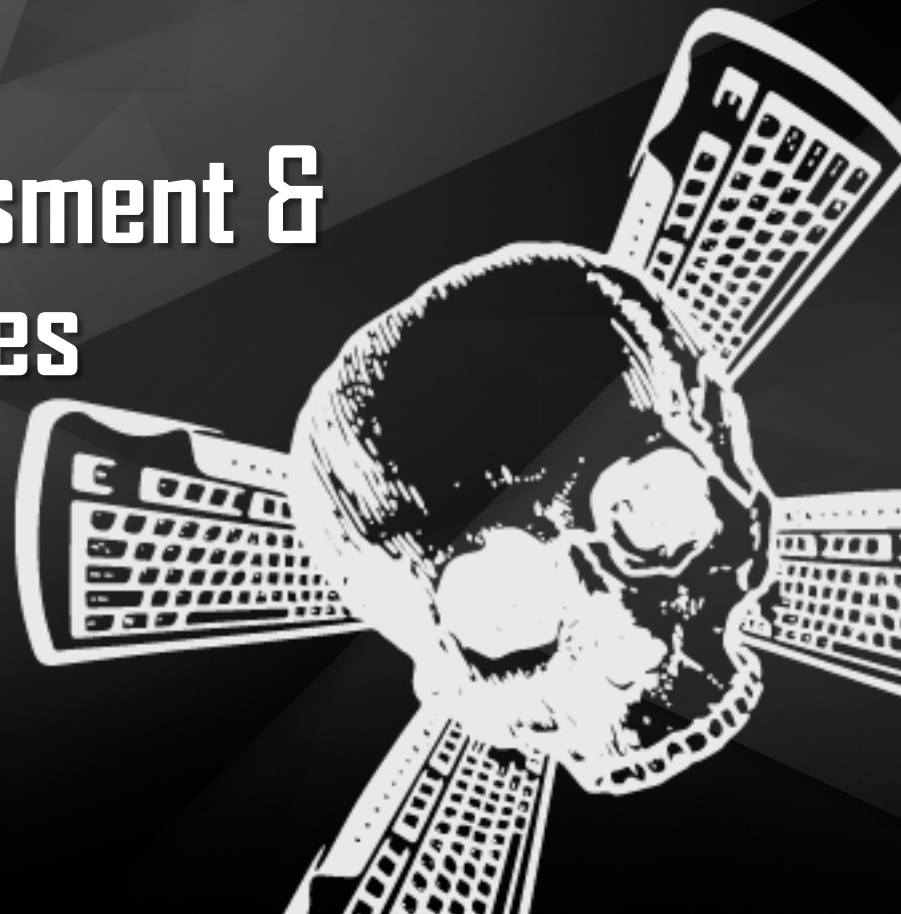
TECHNOLOGIES

ABOUT SECURE NETWORK

ESTABLISHED IN 1997

Perform Security Assessment & Penetration Services

Perform Incident Response Services



WHO MOVED MY PII
"PERSONAL IDENTIFIABLE INFORMATION"

Personally identifiable information (PII) is any data that could potentially identify a specific individual. Any information that can be used to distinguish one person from another and can be used for deanonymizing previously anonymous data can be considered PII

HOW HACKERS LOCATE PII?

2020 HEALTHCARE DATA DISASTERS

AVEANNA HEALTHCARE: 166,077 PATIENTS

POORLY MANAGED SYSTEMS EXFILTRADED DATA

PIH HEALTH: 199,548 PATIENTS

PROTECTED SYSTEM VIA COMPROMISED EMAIL ACCOUNTS

MAGELLAN HEALTH: 365,000 PATIENTS

RANSOMWARE & EXFILTRATION OF DATA

BENEFIT RECOVERY SPECIALISTS: 274,837 PATIENTS

MALWARE EXFILTRATION

AMBRY GENETICS: 232,772 PATIENTS

COMPROMISED EMAIL ACCOUNTS

FLORIDA ORTHOPAEDIC INSTITUTE: 640,000 PATIENTS

RANSOMWARE & EXTORTION

BJC HEALTH SYSTEM: 287,876 PATIENTS

COMPROMISED EMAIL

ELITE EMERGENCY PHYSICIANS (FORMERLY KNOWN AS ELKHART EMERGENCY PHYSICIANS): 550,000 PATIENTS

INCOMPETENT DATA DESTRUCTION VENDOR

HEALTH SHARE OF OREGON: 654,000 PATIENTS

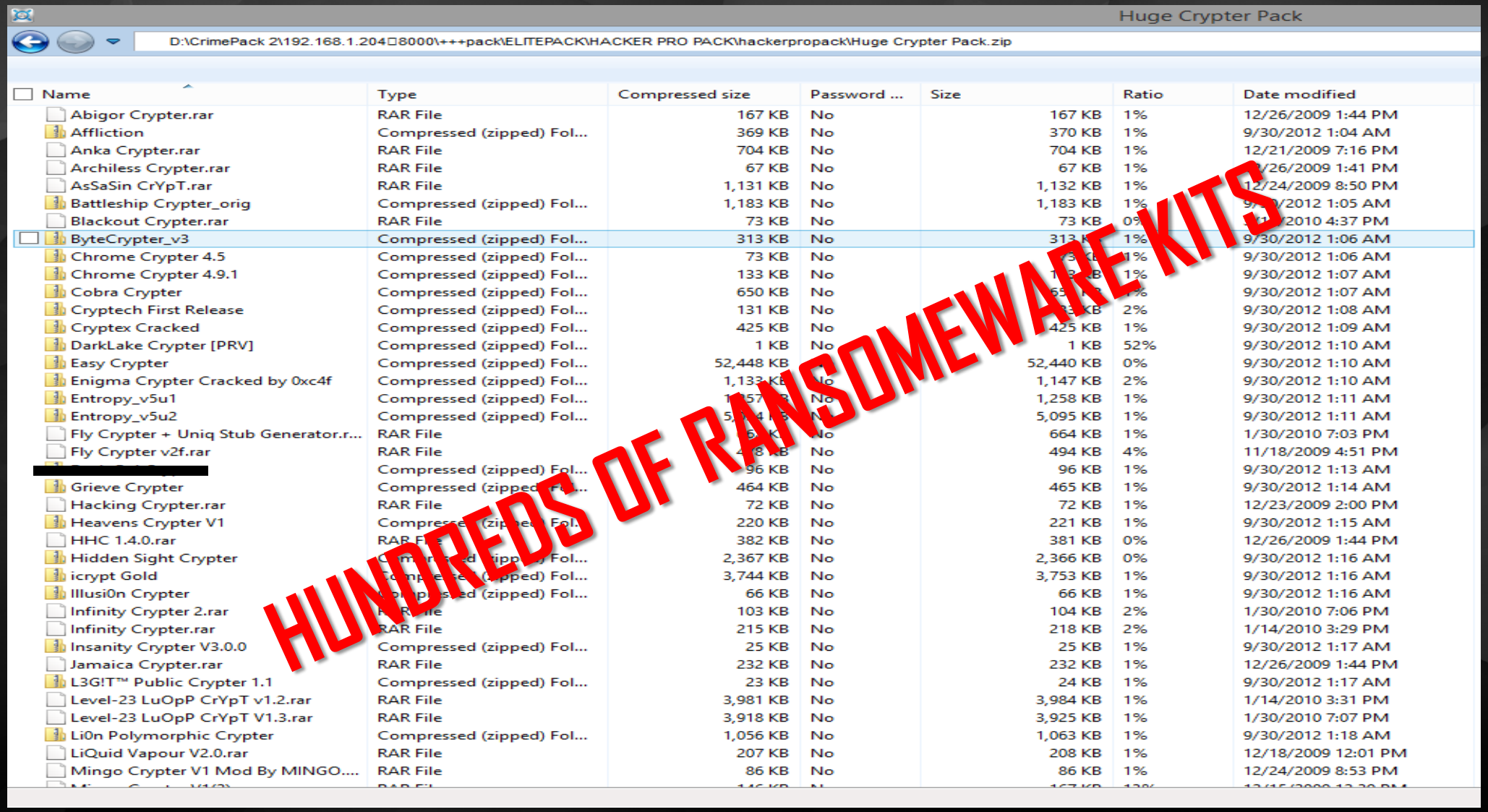
LOST LAPTOP

BST & CO. CPAS: 170,000 PATIENTS

RANSOMWARE & EXTORTION

WHY GO AFTER HEALTHCARE PII?

HACKERS LIKE LOCKING UP DATA



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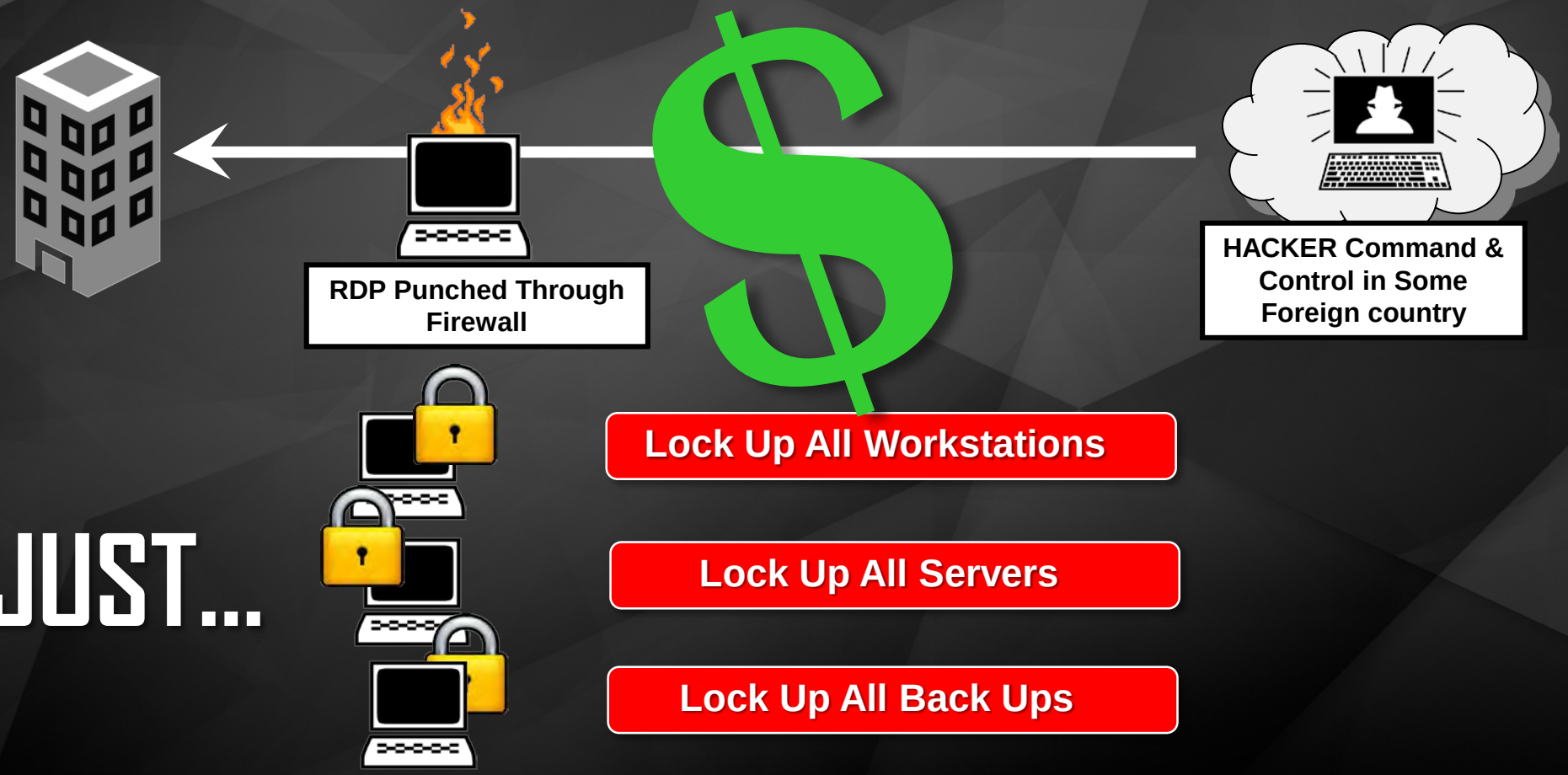
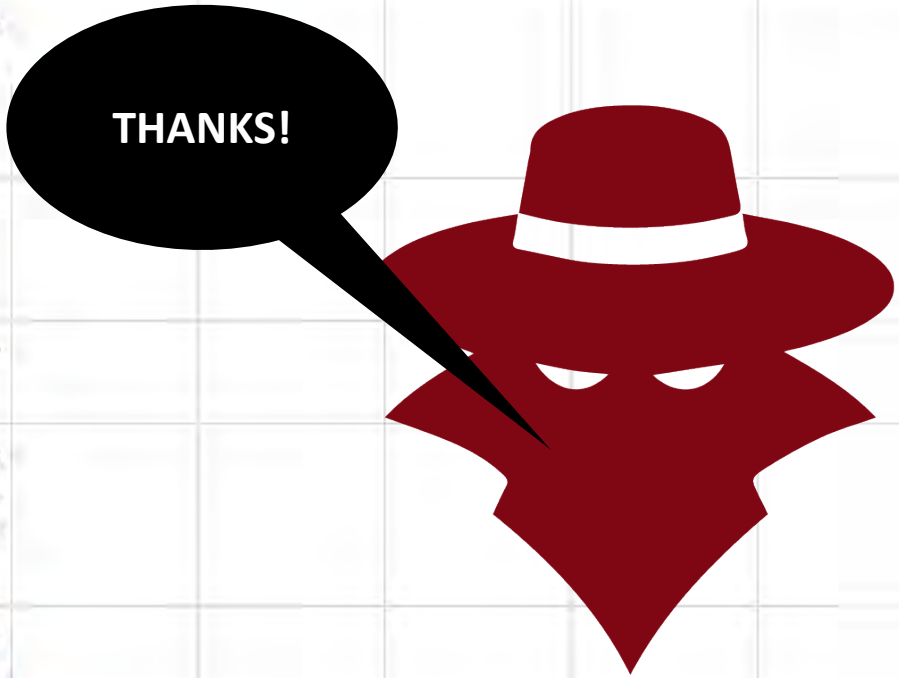
RANSOMWARE KITS ADDED CAPABILITIES



NOT JUST...

REALLY SOPHISTICATED CAPABILITIES

Initial Access	Execution	Persistence	Privilege Escalation	Defense Evasion	Credential Access	Discovery	Lateral Movement	Collection	Command and Control	Exfiltration	Impact
	Service Execution	File System Permissions Weakness	File System Permissions Weakness	Code Signing	Hooking	File and Directory Discovery	Remote Desktop Protocol	Email Collection		Data Compressed	
	Windows Management Instrumentation	Hooking	Hooking	File Deletion		Network Service Scanning					
		Kernel Modules and Extensions	Process Injection	Modify Registry		Process Discovery					
				Process Injection		Query Registry					
				Software Packing		System Network Configuration Discovery					
						System Time Discovery					



WITH BITCOIN INCREASING IN VALUE...

HACKERS KNOW A LOT OF MONEY CAN BE MADE...

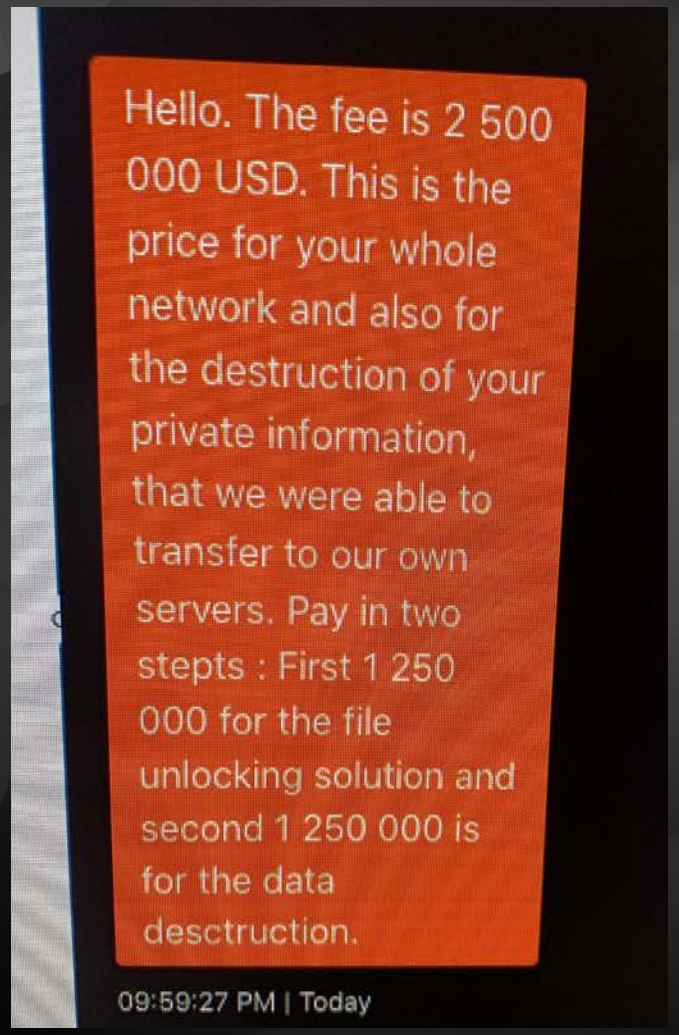
NOW RANSOMING DATA IS THE LAST ACTIVITY...

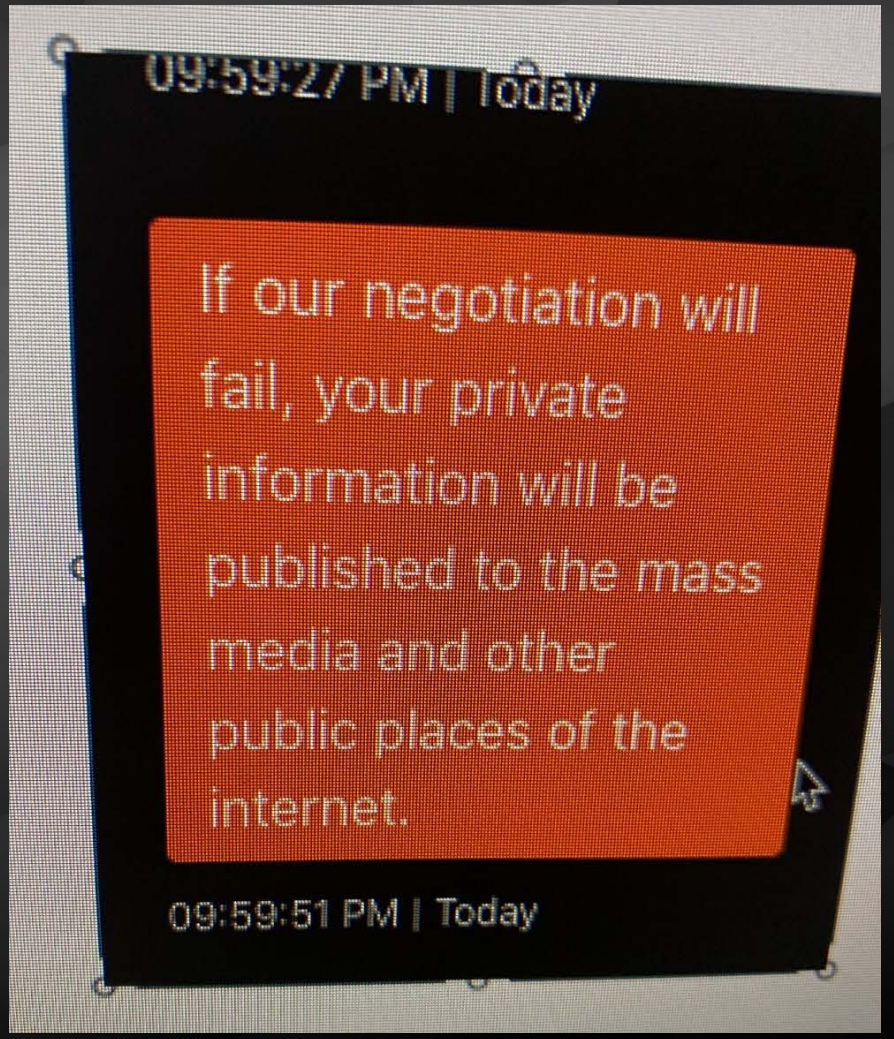
The mean dwell time (time between compromise and detection) was a global average of 146 days

Source- FireEye

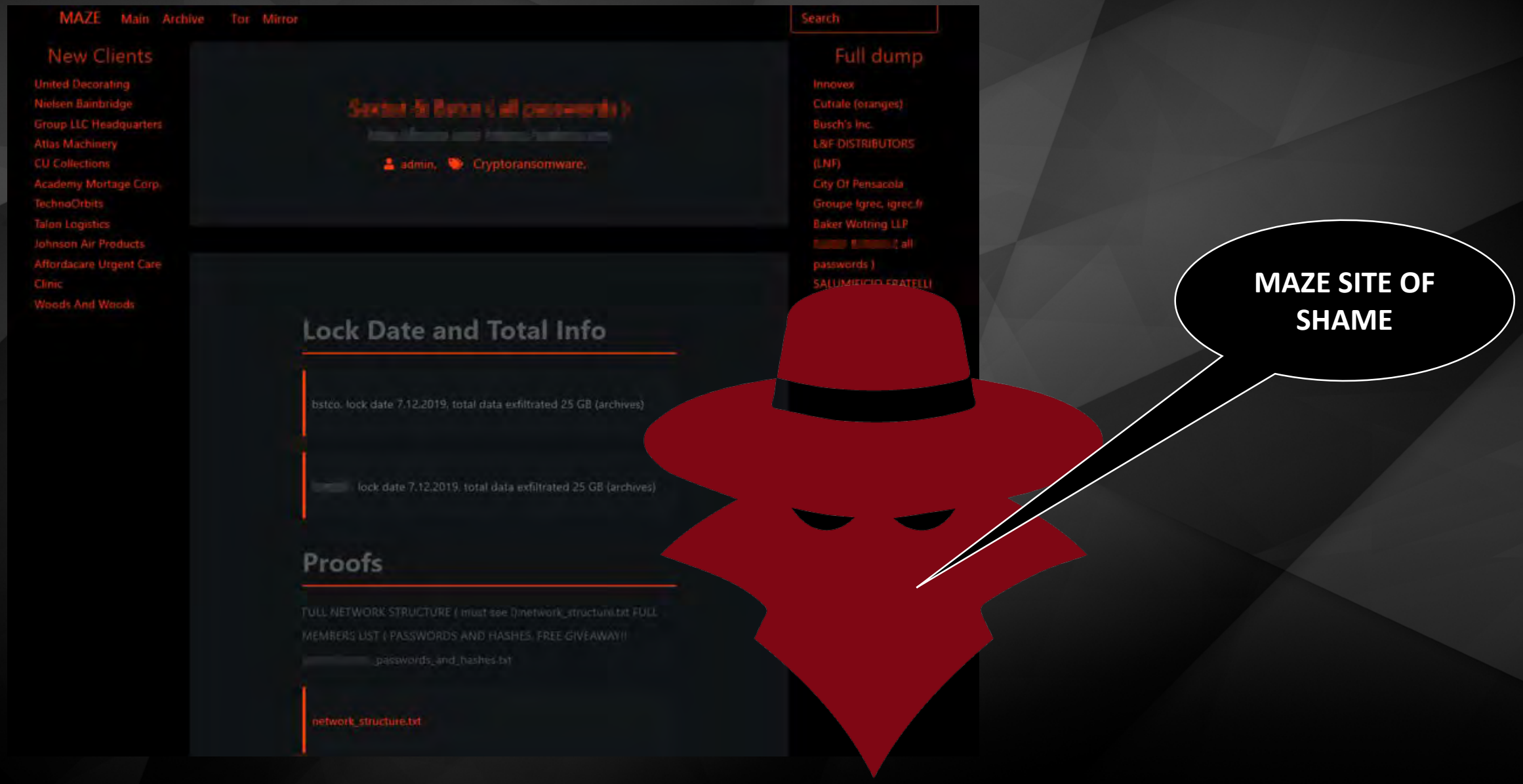
EXFILTRATION OF DATA IS THE MONEY MAKER!!!

RANSOMING THE DESTRUCTION OF DATA STOLEN





PAY UP! OR BE PUBLICALLY SHAMED!



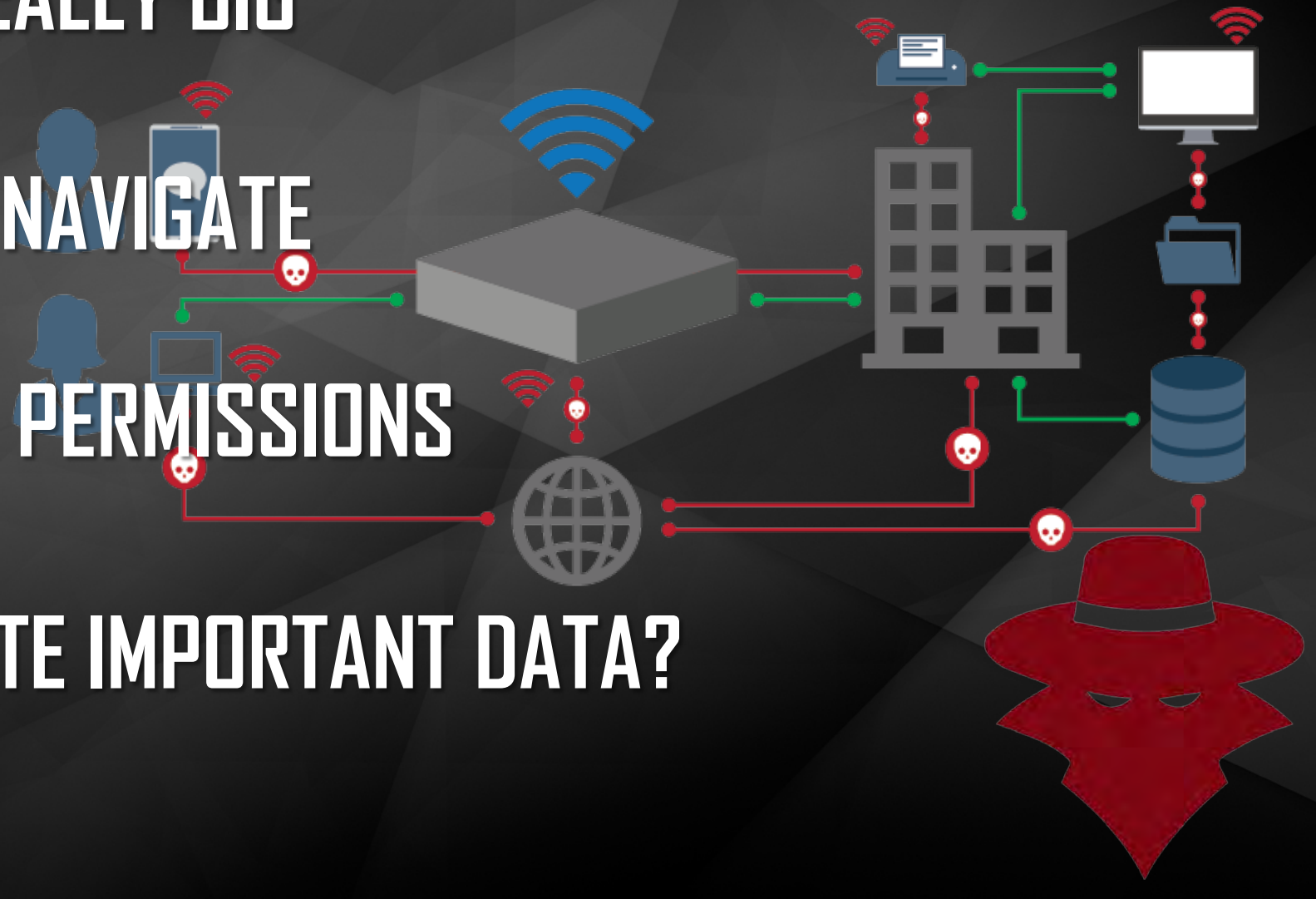
HOW DO HACKERS QUICKLY FIND IMPORTANT DATA?

NETWORKS CAN BE REALLY BIG

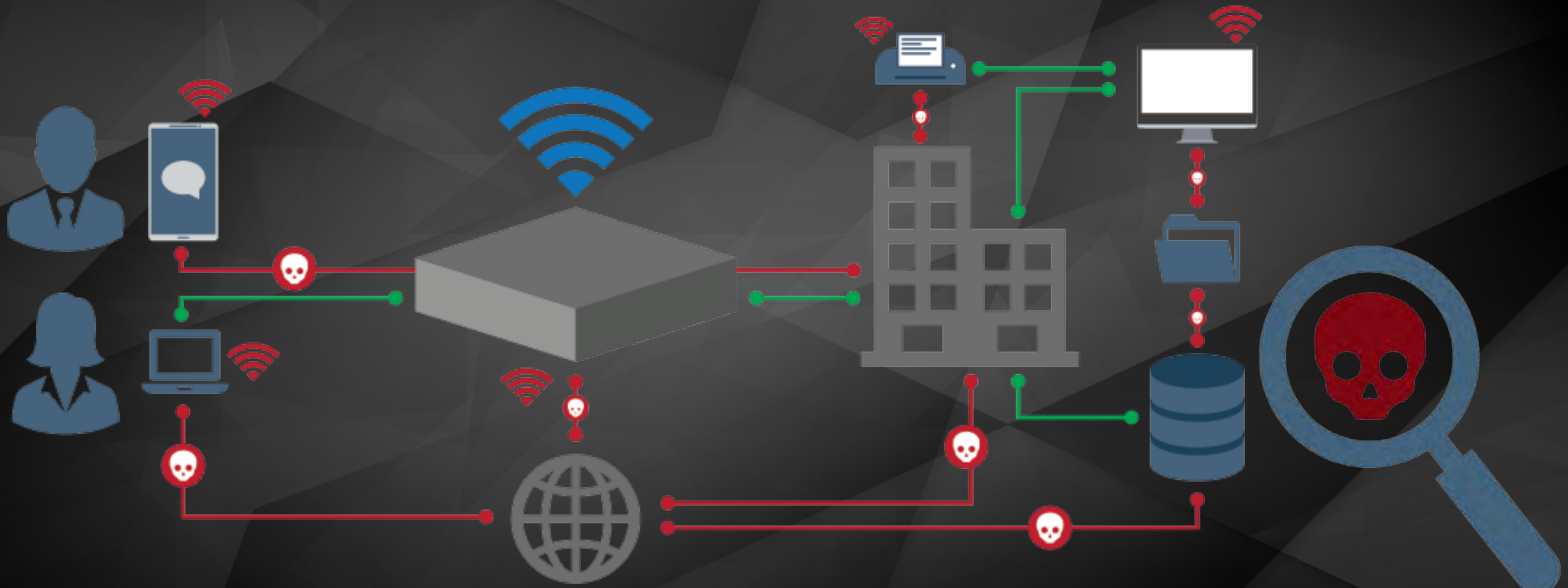
COMPLEX & HARD TO NAVIGATE

HAVE CONTROLS AND PERMISSIONS

HACKERS STILL LOCATE IMPORTANT DATA?



USERS OFTEN ENABLE HACKERS TO FIND THE DATA



USERS OFTEN PROVIDE A ROADMAP

HOW?

USERS OFTEN DO NOT FOLLOW POLICY

THEY PLACE OR MOVE DATA HOWEVER THEY CAN

USING EMAIL TO FIND DATA

FINDING DATA STORES USING EMAIL

POORLY SECURED EMAIL

POORLY MANAGED EMAIL

MOST INBOX'S ARE FILLED WITH PII

INBOX LEADS TO INTELLIGENCE

FINDING DATA USING WEBMAIL

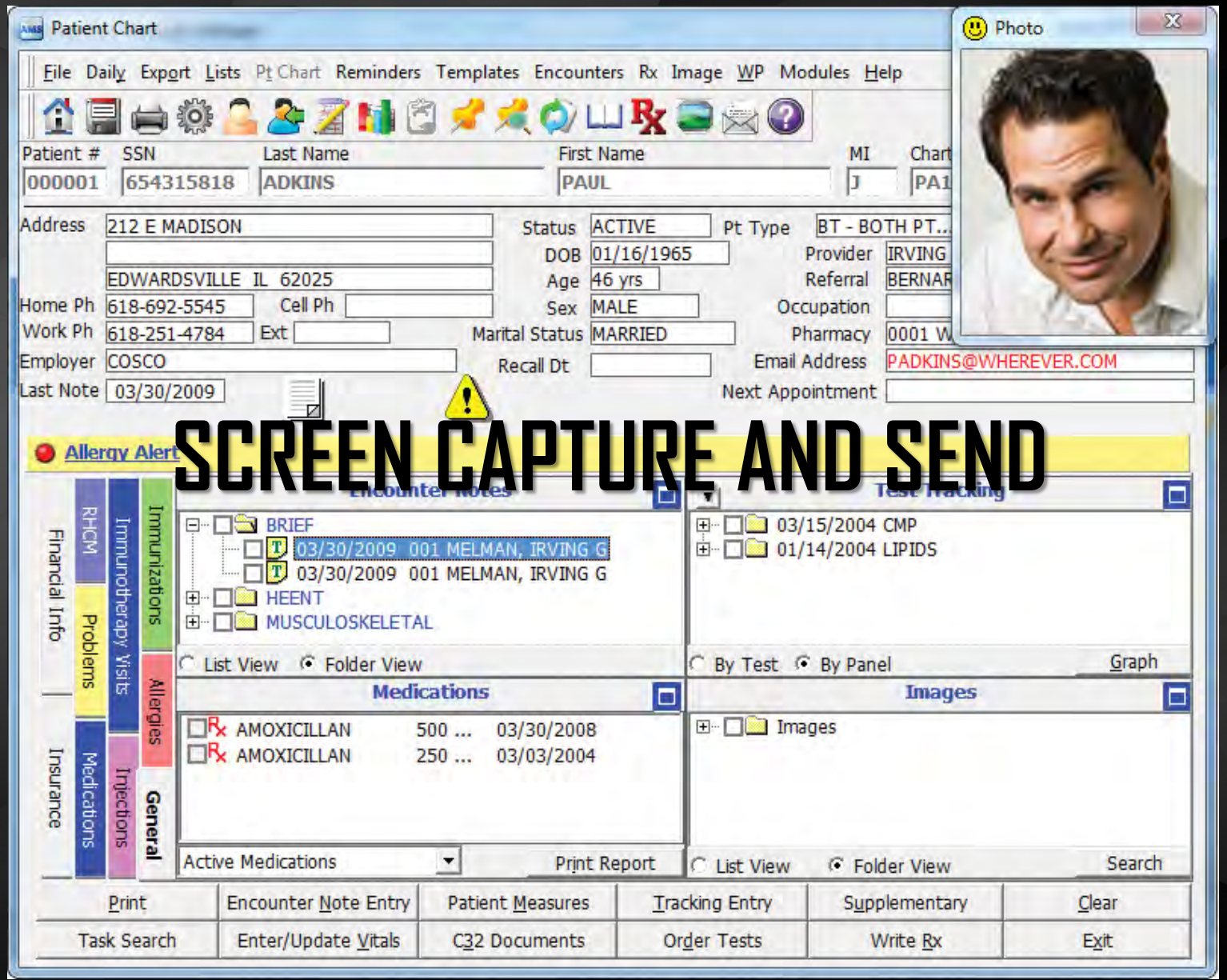
USERS USE TO BYPASS DLP

WILL USE BASED ON FILE SIZE

USERS MAY THINK ITS FASTER

THIS CREATES A DATA LOSS DISASTER

FINDING DATA STORES USING EMAIL



FINDING DATA STORES

FINDING DATA STORES ON A NETWORK

SYSTEMS

INBOX INSTRUCTIONS? WHATS THAT?

SYSTEM RESETS

SYSTEM TRAINING

SYSTEM DOCUMENTATION

FINDING DATA STORES – WEB SERVICES

WEB SERVICES

LEVERAGE COMPROMISED SYSTEMS

LOOK THROUGH THE "FAVORITES"

LOOK THROUGH THE HISTORY OF THE USERS

MOVING STUFF THROUGH A POORLY PROTECTED RESOURCE

FINDING DATA STORES-SHARES

SHARE

LOOK FOR A SHARED FOLDER

USED AS A METHOD OF CONVENIENCE

MOST TIME NO CONTROLS

STUFFED FULL OF THINGS WE SHOULDN'T SEE

DATALOSS CASE STUDY

HOW A SHARE CAN CRIPPLE YOU

FINDING DATA STORES – USB STUFF

USB STUFF

LOOK FOR ANYTHING CONNECTED

BACKUPS ARE OFTEN TIED TO USB HD DRIVES

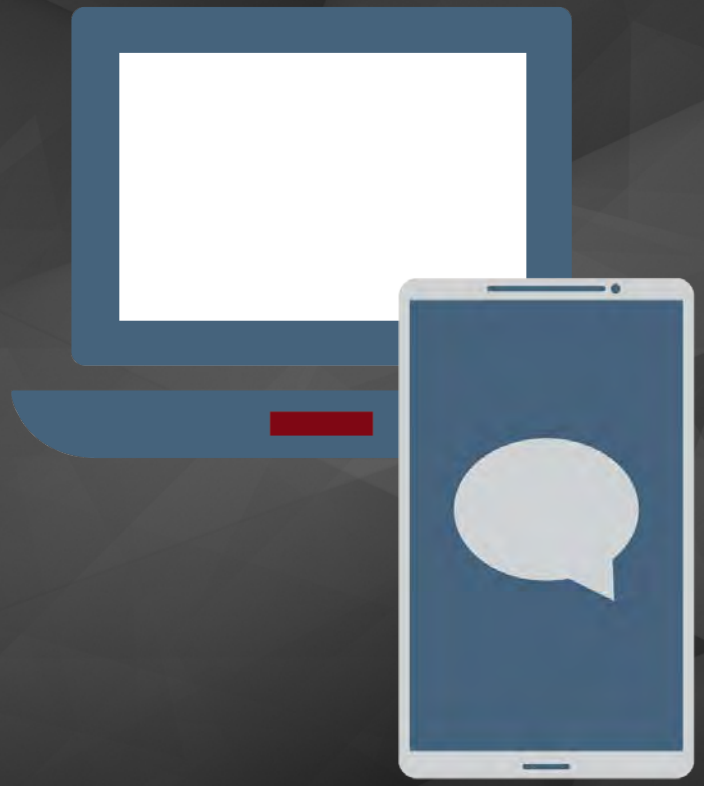
USB HAS LIMITED CONTROLS

OFTEN FILLED WITH STUFF DEEMED "IMPORTANT"

DATALOSS CASE STUDY

HUMAN RESOURCES DISATER VIA

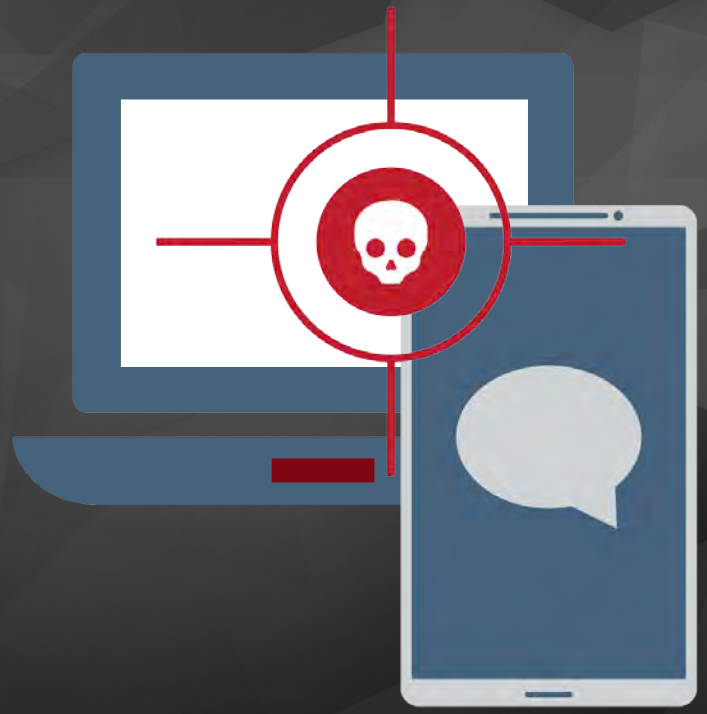
FINDING PHYSICALLY LOST DATA



NO ENCRYPTION LEADS TO BIG TROUBLE

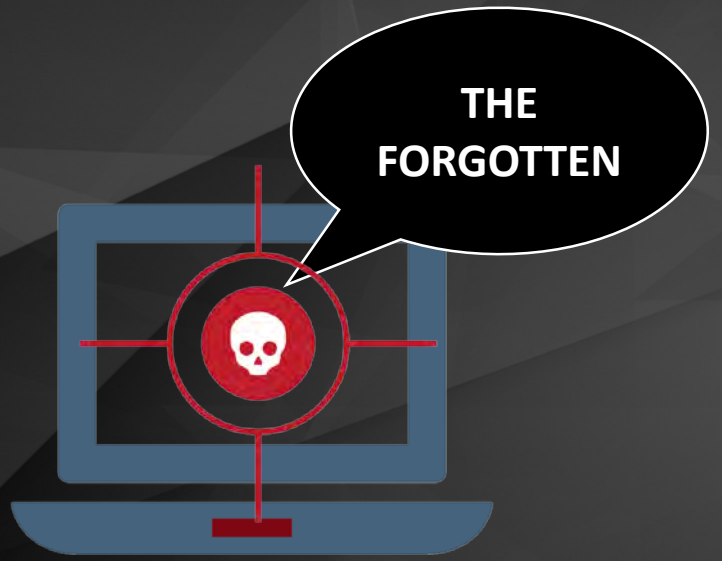
DATALOSS CASE STUDY

LOST HARDWARE CREATES A DISASTER



FINDING BIG DATA STORES

FINDING DATA STORES – LEGACY SYSTEMS



OLD FAX SYSTEMS ARE A PERFECT START

SYSTEMS WITH OLD OPERATING SYSTEMS

OLD SYSTEMS OFTEN HAVE POOR AUTHENTICATION

DECOMMISSIONED BUT NEVER REMOVED

COMPROMISE A SYSTEM TO GET DATA?

SYSTEMS

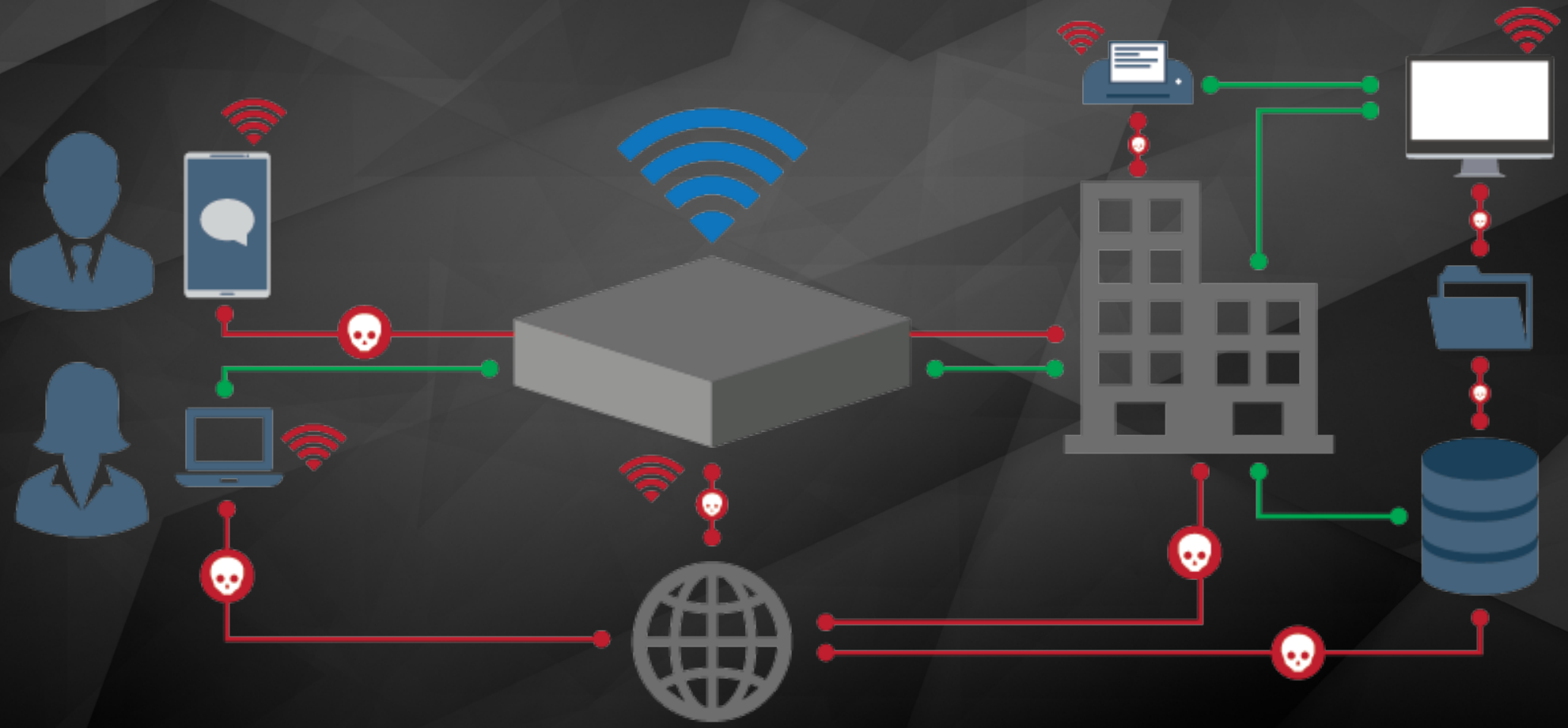
GET MORE NETWORK PRIVILIDGES

SCAN NETWORK FOR A VULNERABLE SYSTEM

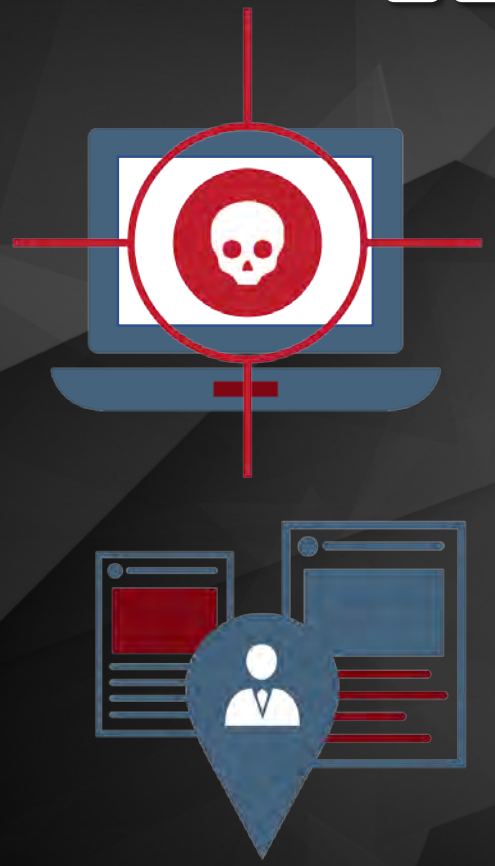
EXPLOIT THE VULNERABLE SYSTEM

GO FROM USER TO ADMIN TO DOMAIN ADMIN

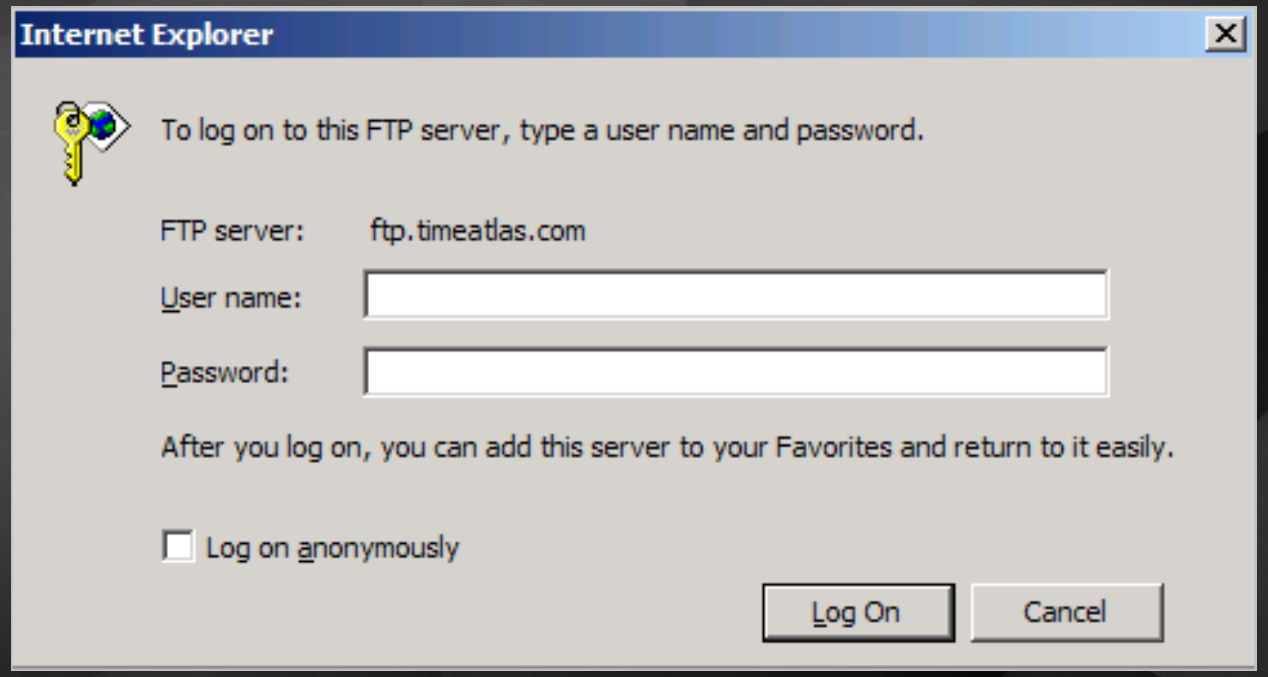
DATA BECOMES INCREASINGLY VISIBLE



USING NETWORK SERVICES TO MOVE DATA?

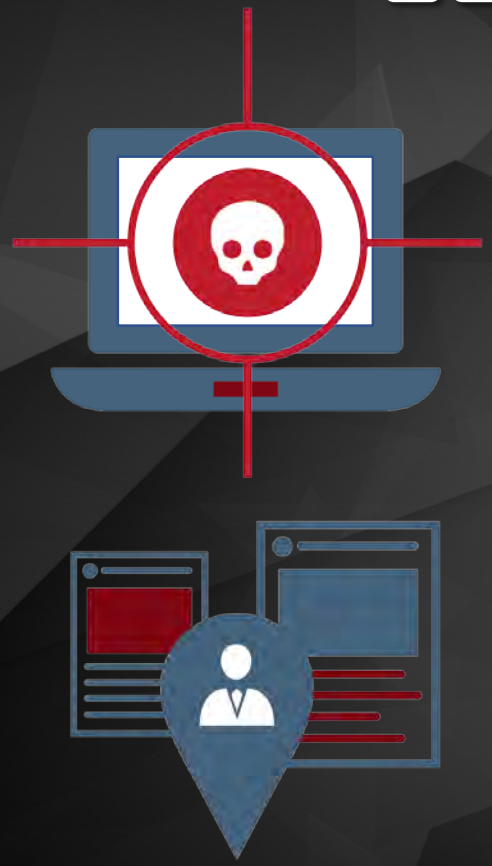


UNNECESSARY OPEN FIREWALL PORTS



FTP (Port 21)

USING NETWORK SERVICES TO MOVE DATA?



UNNECESSARY OPEN FIREWALL PORTS

RDP (Port 3389)

DATA IN THE CLOUD

ON SITE RESOUCES

CO-LOCATED RESOURCES

CLOUD SERVICE MODELS

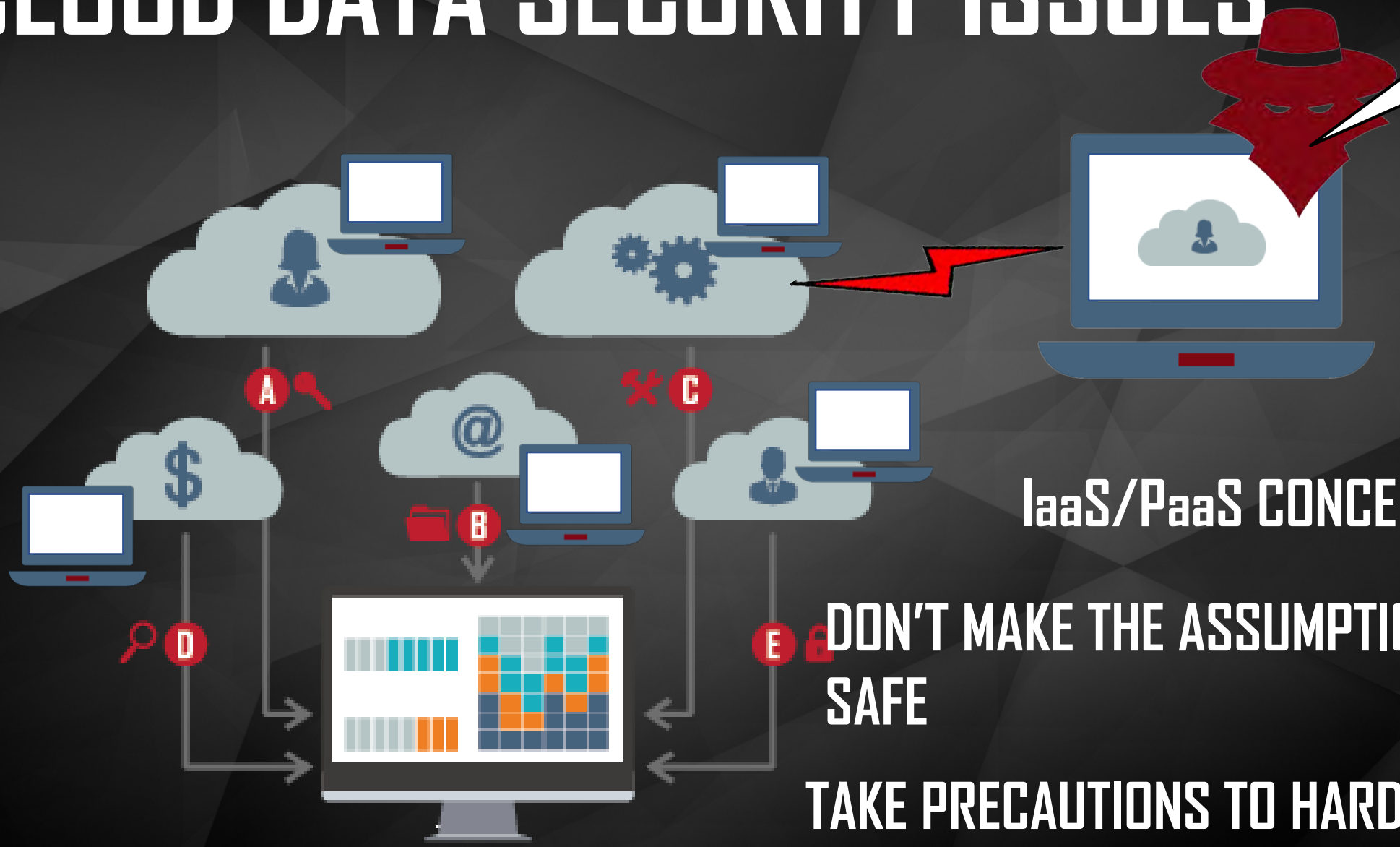
SOFTWARE AS A SERVICE (SaaS)

PLATFORM AS A SERVICE (PaaS)

INFRASTRUCTURE AS A SERVICE (IaaS)

YOUR JUST MOVING DATA TO ANOTHER PLACE

CLOUD DATA SECURITY ISSUES



IaaS/PaaS CONCERNS

DON'T MAKE THE ASSUMPTION YOUR DATA IS SAFE

TAKE PRECAUTIONS TO HARDEN SECURITY OF YOUR CONTENT

SECURITY RECOMENDATIONS...

- TRAIN USERS TO FOLLOW POLICY
- IF POSSIBLE, IMPLEMENT A DATA LOSS PROTECTION SYSTEM
- EXAMINE SYSTEMS AND NETWORK FOR SENSITIVE DATA

SECURITY RECOMENDATIONS...

- LEVERAGE ENCRYPTION AS MUCH AS POSSIBLE
- HARDEN CREDENTIALS TO DATA STORES
- IMPLEMENT TWO FACTOR IF POSSIBLE

SECURITY RECOMENDATIONS...

REVIEW VENDOR APPLICATION FOR SECURITY CONTROLS

ASK FOR THE LAST SECURITY TESTING RESULTS

DON'T MAKE THE ASSUMPTION YOUR DATA IS SAFE IN THEIR POSSESION

QUESTIONS?

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wwildridge@microscopeHC.com