



Share experience. Build resilience

Welcome to SECCON NL 2022

digital trust
center.



HSD
securitydelta.nl

CYBERVEILIG
NEDERLAND



Nationaal Cyber Security Centrum
Ministerie van Veiligheid en Justitie

telindus
a Proximus company

avit

CISCO
SECURE



Day in life at the Dutch Tax Office SOC



Karl Lovink

Technical Lead Security Operations Center, Dutch Tax and Customs Administration
September 22, 2023

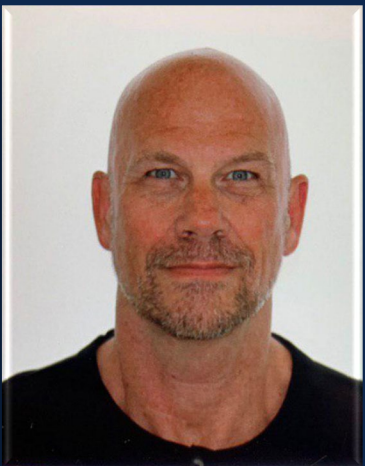


Agenda

- 1 Organization
- 2 Security Operations Center
- 3 Facts, Incidents and Figures
- 4 Partnerships



\$whoami



Karl Lovink
Technical Lead SOC
Liaison NCSC
Dutch Tax and Customs
Administration

kw.lovink@belastingdienst.nl



18 Security Analisten
Started in June 2010





Who do we work for



- Citizens and companies
- Customers within the service
- Customers outside the service



IT – Facts and Figures



24 Petabyte
storage



> 2000 Physical
> 21.500 Virtual



3 locations



43.000
notebooks/pc



1.600
applications



30 million LoC



> 50.000 mobile
devices



> 300 apps

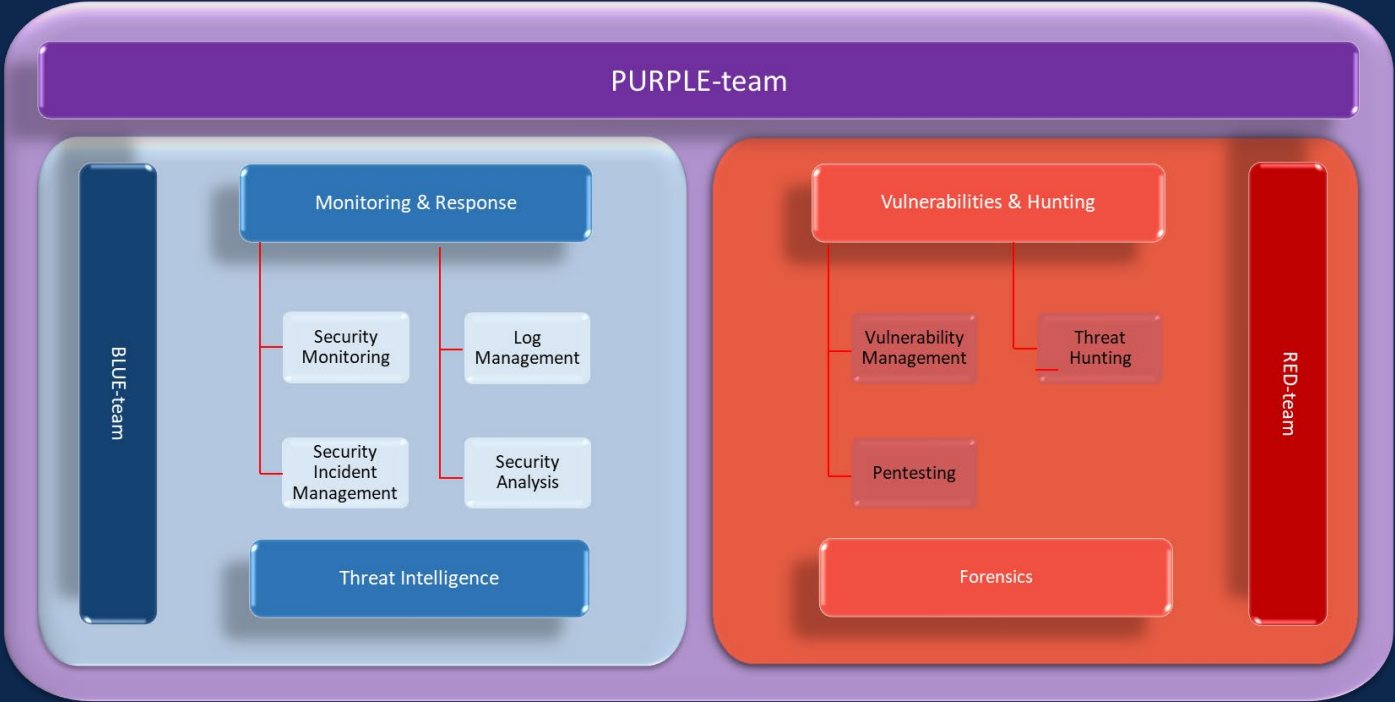


Definition Security Operations Center

“A Security Operation Center (SOC) is a centralized function within an organization employing **people, processes, and technology** to continuously monitor and improve an organization's security posture while **preventing, detecting, analyzing, and responding** to cybersecurity incidents.”



Main processes SOC





Monitoring & Response

The SOC deals with Security Monitoring, examples of which are :

- Unauthorized account creation in the domain “Belastingdienst”
- Use of honey token account

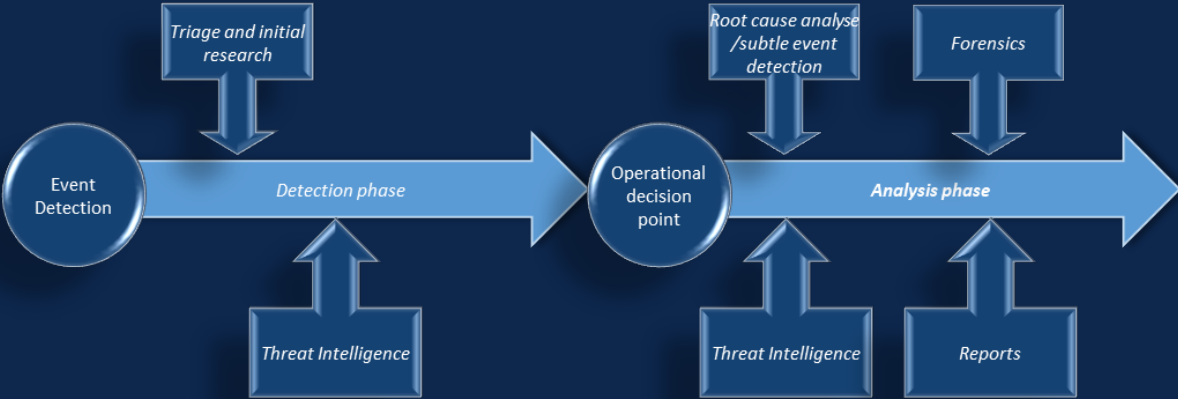
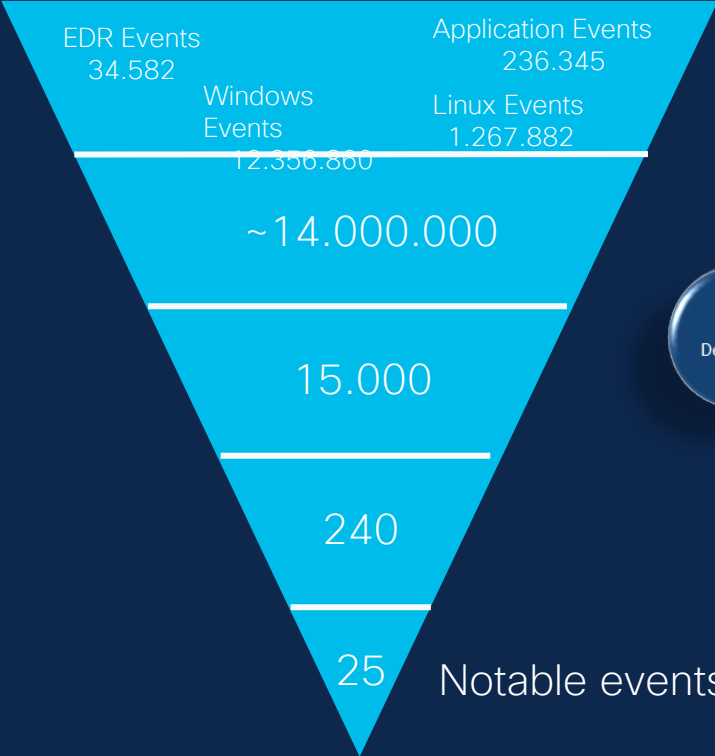
Examples not covered by security monitoring:

- An unexpected restart
- Unexpected restoration of a backup
- Availability of an application
- Abnormalities in behavior

Note: Availability lies with Operations Bridge



Challenge: from events to incidents



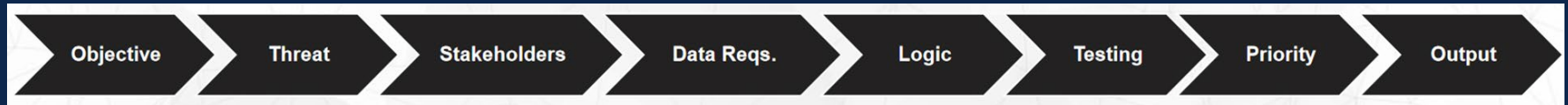


Monitoring & Response – Use-cases

What is a SOC use-case?

“Methodology used by the SOC team to identify and organize technical and organizational requirements for detection and response to specific threats”

From 3 billion events to 24 notable events.....

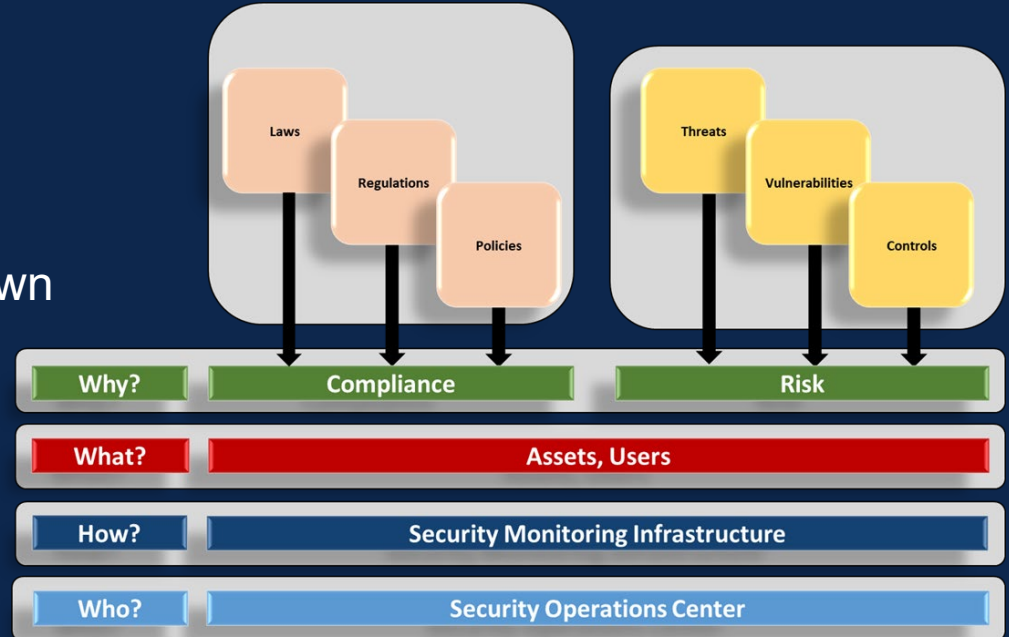




MAGMA Use-case Framework

The MaGMA Use Case Framework (UCF) is a framework and tool for use case management and administration on security monitoring

Now: Use-case: bottom-up
Future: Risks/Compliance: top-down



Share experience. Build resilience.



Monitoring & Response – Use-case Examples

- Inside to inside:
 - Unauthorized creation of users
 - Use of "honey token accounts"
- Outside to inside:
 - DDoS detection
 - Inbound malware
 - Hacking attempts, exploiting vulnerabilities, Coordinated Vulnerability Disclosure
- Inside to outside:
 - Detection of network traffic to botnets, malware workstations
- Outside to outside:
 - Reports citizens phishing/smishing



Security Incident and Event Management System

Incident Review

Urgency

- CRITICAL 0
- HIGH 2
- MEDIUM 27
- LOW 0
- INFO 0

Status

Closed

Owner

Security Domain

Select...

Tag

Type...

Correlation Search | **Sequenced Event**

ACC-WIN-0006 Unauthorized account ...

END-DWB-0008 Execution of suspicio...

Search

Time | **Associations**

Last 90 days

Submit

✓ 29 events (10/10/19 12:00:00.000 AM to 1/8/20 2:59:52.000 PM) Job Smart Mode

Format Timeline - Zoom Out + Zoom to Selection x Deselect 1 day per column

Edit Selected | Edit All 29 Matching Events | Add Selected to Investigation

< prev 1 2 next >

| i | <input type="checkbox"/> | Time | Security Domain | Title | Urgency | Status | Owner | Actions |
|---|--------------------------|--------------------------|-----------------|--|---------|--------|-------|---------|
| > | <input type="checkbox"/> | 12/19/19 7:02:07.000 PM | Endpoint | END-DWB-0008 Execution of suspicious PowerShell commands/scripts (user | Medium | Closed | | |
| > | <input type="checkbox"/> | 12/19/19 3:31:15.000 PM | Endpoint | END-DWB-0008 Execution of suspicious PowerShell commands/scripts (user | Medium | Closed | | |
| > | <input type="checkbox"/> | 12/19/19 3:29:26.000 PM | Endpoint | END-DWB-0008 Execution of suspicious PowerShell commands/scripts (user | Medium | Closed | | |
| > | <input type="checkbox"/> | 12/19/19 3:15:39.000 PM | Endpoint | END-DWB-0008 Execution of suspicious PowerShell commands/scripts (user | Medium | Closed | | |
| > | <input type="checkbox"/> | 11/15/19 11:12:09.000 AM | Access | ACC-WIN-0006 Unauthorized account creation | Medium | Closed | | |
| > | <input type="checkbox"/> | 11/15/19 9:40:17.000 AM | Endpoint | END-DWB-0008 Execution of suspicious PowerShell commands/scripts (user | High | Closed | | |



Outside to inside: DDoS detection/mitigation

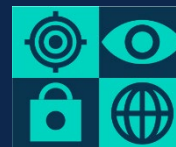
| Rulebase & Screening | Rulebase | Screening | Amplification Type | Src IP session Limits | Dest IP session Limits |
|--|--|---|--|--|--|
| 331609 IPs | 72684 Unieke IPs | 240 Unieke IP's | 317831 UDP packets | 0 Hits Src IP session Limits | 47 Hits Dest IP session Limits |
| 4 % IP's from NL | 8 % IP's from NL | 0 % IP's from NL | UDP/DNS (79%) #1 Attack UDP | - #1 IP | 101.178.237.246 #1 IP |
| 96 % IP's from other Country's | 92 % IP's from other Country's | 0 % IP's from other Country's | TCP/53169 (2%) #1 Attack NON UDP | | |
| Russia(25%) #1 Non NL Country | United States(25%) #1 Non NL Country | Russia #1 Non NL Country | Russia #1 Non NL Country | - #1 Non NL Country | Australia #1 Non NL Country |



Outside to Inside – DDoS exercises

Twice a year

- Volume-based DDoS test
- Applicative DDoS test



Anti-DDoS Coalition
No More DDoS

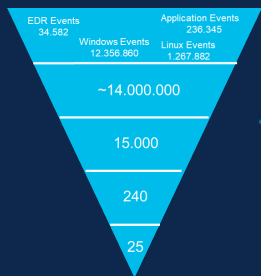


Share experience. Build resilience.

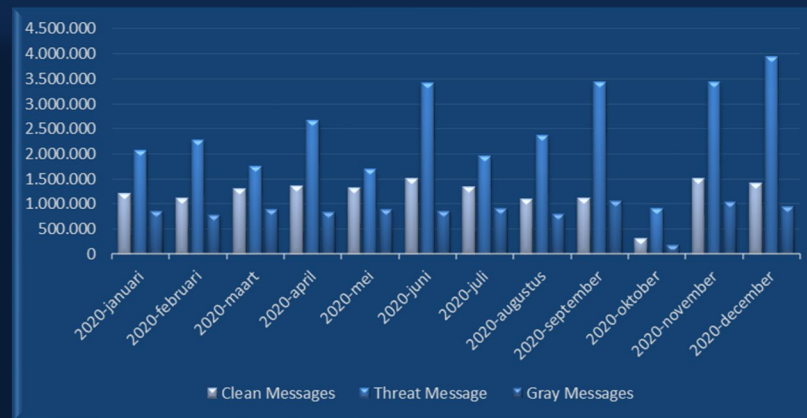


Outside to Inside – External Mail

Totals 2020



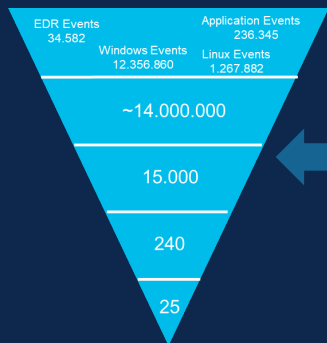
| | | |
|-----------------|------------|---------|
| Threat Messages | 29.974.532 | 54,75% |
| Gray Messages | 10.105.605 | 18,46% |
| Clean Messages | 14.663.156 | 26,79% |
| Total | 54.743.293 | 100.00% |



Share experience. Build resilience.

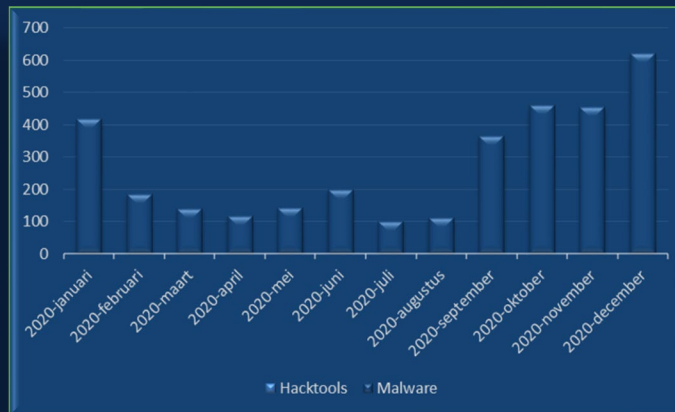


Inside to outside/inside – Malware workstations



Totals 2020

- Malware 5799
- Hacktools 29





Outside to outside – Phishing, Smishing

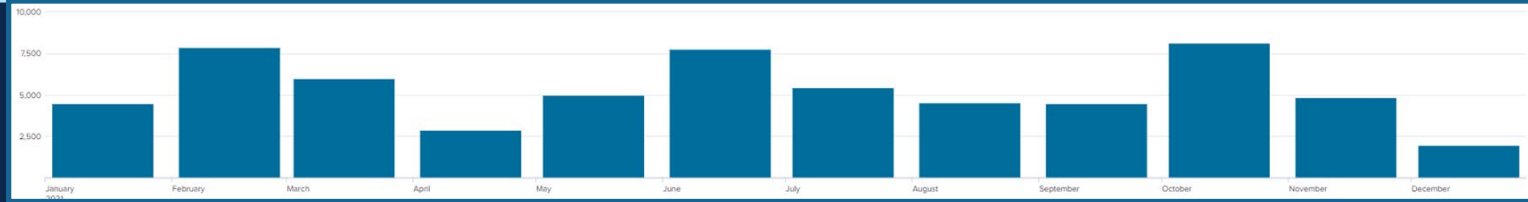
e-mail received

2017 2020 2021

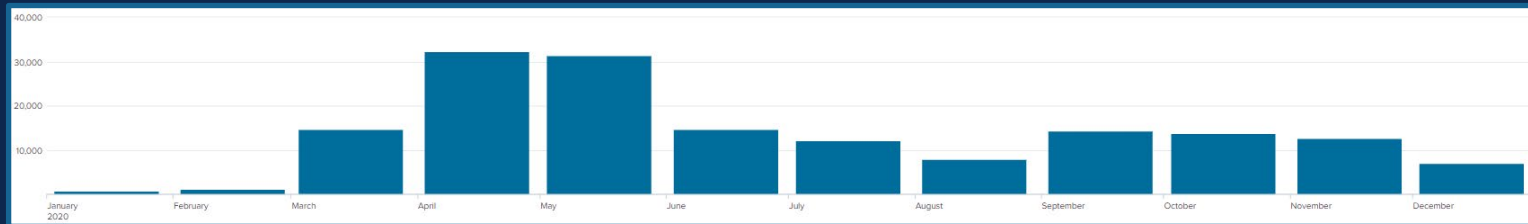
Valse-email@belastingdienst.nl

7.791 162.62
4

2021



2020





Outside to outside – Phishing, Smishing



Link naar betaalverzoek



Link shortener



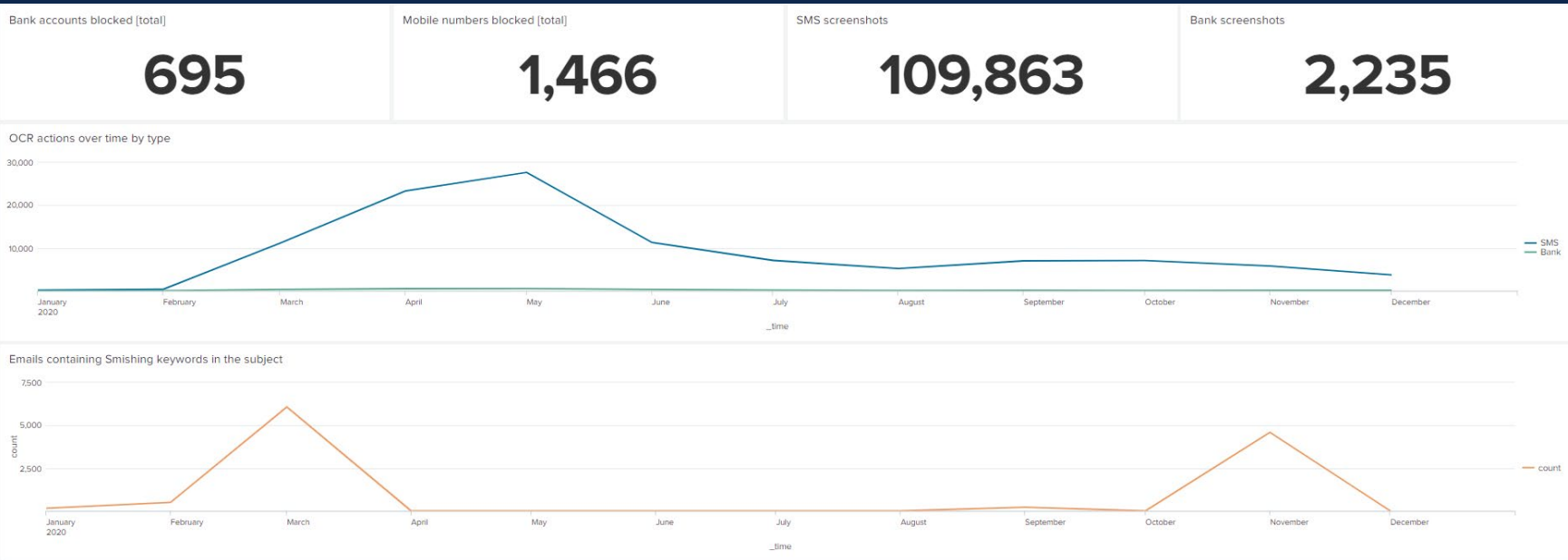
E-mail phishing



Fake websites



Outside to outside – Phishing, Smishing





Outside to outside – Phishing, Smishing

Ik heb helaas dit bedrag overgemaakt!

Mvg M. [redacted]
Tel:06-20001000

Verstuurd vanaf mijn iPhone

Begin doorgestuurd bericht:

Van: "Belastingdienst" <belastingaangifte@belastingdienst.nl>
Datum: 23 augustus 2015 11:05:10 CEST
Aan: belastingaangifte@belastingdienst.nl
Onderwerp: Belastingaangifte 2014
Antwoord aan: belastingaangifte@belastingdienst.nl



Onderwerp: Fwd: Belastingaangifte 2014
Van: [redacted]@rt.nl>
Datum: 4-8-2015 21:40
Aan: [redacted]administration@belastingdienst.nl>

graag meteen betalen

----- Doorgestuurd bericht -----
Onderwerp:Belastingaangifte 2014
Datum:Tue, 4 Aug 2015 21:39:52 +0200
Van:Belastingdienst <belastingaangifte@belastingdienst.nl>
Antwoord-naar:belastingaangifte@belastingdienst.nl
Aan:belastingaangifte@belastingdienst.nl

GEBOEKT

Moet dit worden
ingeboekt?

BETAALD PER BANK 05 AUG 2015

BETAALD PER BANK 05 AUG 2015

Geachte heer/mevrouw,

Bij controle van onze administratie hebben wij geconstateerd dat er een betaling achterstond



Outside to outside – Phishing, Smishing

DigiD Je eigen inlogcode voor de hele overheid

Belastingbetaling (1/3)

1 Persoonsgegevens

Verplichte velden zijn gemarkeerd

Burgerservicenummer *

Geboortedatum * onbekend

Postcode *

Uw e-mailadres *

Volgende

Geen antwoord op uw vraag?
↳ [Bekijk de overige veelgestelde vragen](#) [opent in een nieuw venster] of
↳ [Bekijk de overige veelgestelde vragen](#) [opent in een nieuw venster] met de DigiD helpdesk.

DigiD Je eigen inlogcode voor de hele overheid

Belastingbetaling (2/3)

2 Betaling

Verplichte velden zijn gemarkeerd

Bedrag **46,00 Euro**

Kies uw bank * **Kies uw bank**

Volgende

Geen antwoord op uw vraag?
↳ [Bekijk de overige veelgestelde vragen](#) [opent in een nieuw venster] of
↳ [Bekijk de overige veelgestelde vragen](#) [opent in een nieuw venster] met de DigiD helpdesk.

Rabobank **Betalen met iDEAL**

Ondertekenen **Betalen** **Bevestigen** **Terug naar webwinkel**

Begunstigde **Stichting Mollie Payments inzake Bitonic**

Omschrijving **BTC 0,09519700 aan 19Hg...**

Bedrag **€46,00**

Bankpas Rekeningnummer **IBAN**

Pasnummer



Ga verder **Annuleren** **Help**

Ga alleen verder als de adresregel begint met [https://betalen.rabobank.nl/...](https://betalen.rabobank.nl/)
↳ [Hoe controleert u de veiligheid van uw verbinding?](#)
↳ [Lees meer over veiligheid](#)



Outside to outside – Phishing, Smishing

[Success] BTC Address: <bitcoin wallet>

idc: <ssn>
dbd: 01
dbm: 9
dby: <geboortejaar>
zip: <zipcode>
eml: <email adres>
bid: ideal_RABONL2U

IP : 84.26.XX.XX9
USERAGENT : Mozilla/5.0 (Windows NT 6.1; WOW64)
(KHTML, like Gecko) Chrome/35.0.1916.153 Safari/537.36
=====

[Success] BTC Address: <bitcoin wallet>

idc: <ssn>
dbd: 21
dbm: 11
dby: <geboortejaar>
zip: <zipcode>
eml: <email adres>
bid: ideal_RABONL2U

IP : 77.169.XXX.XX8
USERAGENT : Mozilla/5.0 (compatible; MSIE 10.0;
=====





Outside to outside – Phishing, Smishing

Phishing Panels

Forwarded from HelpDeskFraude (Gefixt)
PANEL VERHUUR/VERKOOP

Kwaliteit op 1.

Langer termijn werker 👍

🇳🇱 - 2022 Reliable PANEL -
€150 per week.
Bestanden: €350

🇧🇪 - 2022 Reliable PANEL -
€150 per week.
Bestanden: €350

🇩🇪 - 2022 uAdmin PANEL -
Customized: met anti-bot €150 per week.
Bestanden: €350

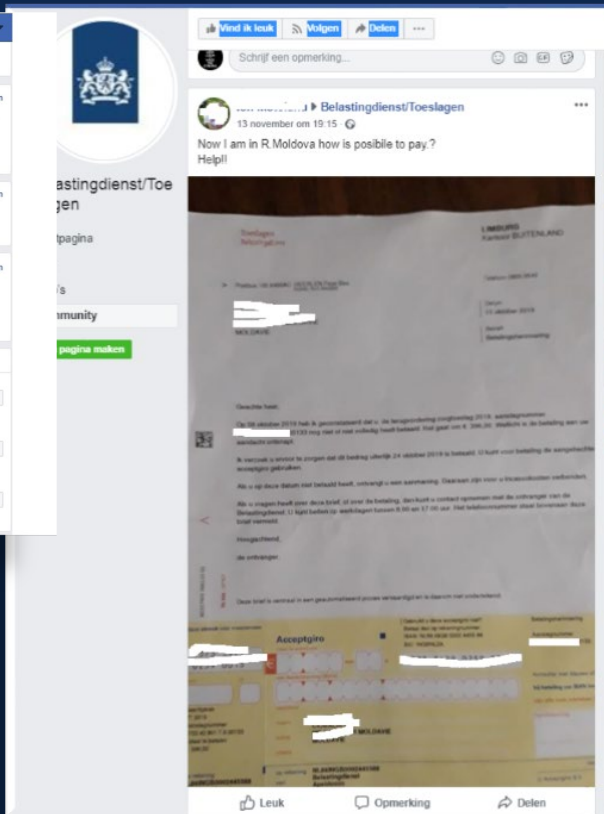
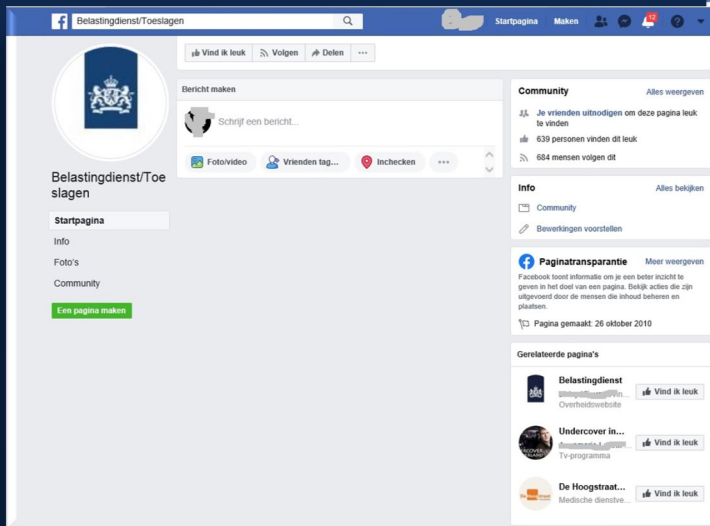
🇺🇸 - 2022 uAdmin PANEL -
Customized up-to-date €150 per week.
Bestanden: €400

Per bank alle tokens en functies.
Elke panel source is clean (vps gaat niet offline)
Bestanden kan in overleg worden gekocht.

💰 BTC / CRYPTO VOUCHER ONLY.



Outside to outside: Fake social media pages





Partnerships



- National Response Network
 - Goal: The National Response Network (NRN) is a collaborative effort with the goal of strengthening the joint response to cybersecurity incidents.
- J-SOC, operational cooperation between SOCs within the Dutch National Government
- o-IRT-o, public-private partnership between SOC/CERT within the Netherlands
- NCSC liaison consultation, PPS at tactical level
- ISACs, including the RijksISAC.
- Splunk ISAC with Norway, Denmark, Netherlands and the UK
- Dutch antiDDoS Coalition



Ask me anything

Share experience. Build resilience.

No pincode, no SSN, no password (you know it already, it's welcome01)



SECCON-NL 2022

Share experience. Build resilience

Time

09:00 – 10:00

Opening Keynote Sadie Creese (Professor Cybersecurity @ Oxford University)

Main stage (Zliversmederij 300 seats)

Breakout room 1 (Penningzaal 80 seats)

Breakout room 2 (Depot 80 seats)

Breakout room 3 (Stempelkamer 60 seats)

Breakout room 4 (Schatkamer 30 seats)

10:00 – 10:15

Break – switch to main stream

Threat Intel

Threat Intel

Post Quantum Security

Threat Intel

AI

10:15 – 10:45

Threat Intel update from Talos – Martin Lee (Talos Threat intelligence organization)

No More Leaks Project – Felix Nijpels (Dutch Police)

The Impact of Quantum on security – a general outlook – Sam Samuel (Cisco)

Threat management at the Dutch Railway – Dimitri van Zantvliet Rozemeijer (Chief Cyber Dutch Railway)

Get ready for the AI attack bot – Richard de Vries (Tata Steel)

10:45 – 11:00

Break – switch to main stream

Detection and Response

SOAR

Post Quantum Security

Detection and Response

Detection and Response / AI

11:00 – 11:30

Day in life at the Dutch Tax Office SOC – Karl Lovink (Belastingdienst)

Stay Ahead of the Game: Automate your Threat Hunting Workflows – Christopher van der Made (Cisco)

Quantum hurdles: an optimistic view of post-quantum security – Sander Dorigo (Fox Crypto)

What Cyber can learn from Biology? – Koen Hokke (KPN)

Unsupervised Anomaly-Based Network Intrusion Detection Using Auto Encoders for Practical Use – Julik Keijer (Northwave)

11:30 – 11:45

Break – switch to main stream

Detection and Response

Detection and Response

DevSecOps/ Detection and Response

DevSecOps

11:45 – 12:15

Compliancy vs security. Pentesting is dead – Edwin van Anel (ZeroCopter)

Incident Response without compromise. How to prepare for the worst day of your career with dice! – Wouter Hindriks (Avit)

Threat Modelling: it's not just for developers – Timothy Wadhwa-Brown (Cisco)

Changed responsibilities in modern software development environments – Martin Knobloch (Microfocus)

How to break a data center? Fred Streefland (Secior)

12:15 – 13:00

LUNCH

13:00 – 13:45

Panel Discussion with Liesbeth Holterman (host CVNL) Koen Sandbrink (NCSC), Jochem Smit (Northwave), Oscar Koeroo (Min Ezk), Jan Heijdra (Cisco)

13:45 – 14:00

Break – switch to main stream

Threat intel / Detection and Response

Threat Intel

Detection and Response

DevSecOps

14:00 – 14:30

CERT in Ukraine experience sharing by Andrii Bezverkhyi (SOCPrime)

This is why you will fail: Most successful attack scenarios and their defenses – Tijme Gommers (Northwave)

Risk-based Auth & ZTA – Frank Michaud (Cisco)

Creating clarity and unity in security standards and guidelines – OpenCRE.org – Rob van der Veer (Software Improvement Group)

(Placeholder) WICCA Breakout (with Wendy joining)

14:30 – 14:45

Break – switch to main stream

Detection and Response

Detection and Response

Detection and Response

Threat Intel

Detection and Response / AI

14:45 – 15:15

Advanced Attacker Automation: Botnet capabilities and techniques used to evade your defences – David Warburton (F5)

Security Maturity: from XDR to SIEM – Gilles van Heijst (Orange Cyber Defense)

Improving Business Security by implementing Security.txt – Julius Offers (Digital Trust Center)

Tackling the challenge of translating threat intelligence into actual action – Raymond Bierens (Connect2Trust)

Fostering emerging technologies in cybersecurity, to reinforce our strategic autonomy. – Christian van der Woude (Dcypher)

15:15 – 16:00

Closing Keynote – Wendy Nather