

ЧОМУ БУТИ
"БЕЗПЕЧНИМ"
ТЯЖКО, ДОВГО ТА
ДОРОГО?

**ІНФОРМАЦІЙНА БЕЗПЕКА
VS
КІБЕРБЕЗПЕКА**

ΧΤΟ ΠΡΑΞΙΟΕ

- BLUE TEAM:
 - CISO
 - INFOSEC DIRECTOR
 - SECOPS SPECIALISTS (ANALYSTS)
- RED TEAM:
 - PENTESTERS

ЧОМУ?





ATTACK ORIGINS		ATTACK TYPES	
#	COUNTRY	#	TYPE
570	China	983	0 route-router
867	South Korea	165	0 dns-dns-server
793	United States	337	0 ssh
539	Turkey	327	0 ms-sql-s
382	Netherlands	38	0 http
337	Russia	343	0 vrb
304	Brazil	68	0 smtp
288	Italy	494	0 microsoft-ds
285	Germany	389	0 random-dgns
139	Iran	33	0 scan-ftp-scanner

ATTACK TARGETS	
#	COUNTRY
5000	United States
3265	United Arab Emirates
885	Australia
398	Singapore
328	Germany
318	Italy
28	Romania
23	France
12	Hong Kong
7	Canada

LIVE ATTACKS						
IPADDRESS	ATTACKER	ATTACKED IP	ATTACKED OS	TARGET OS	ATTACKTYPE	PORT
048-08-880	Ti-Dns	137.44.65.247	Calix, EG	Lynwood, US	microsoft-ds	445
048-08-282	Korea Telecom	123.144.156.153	Seoul, KR	Dublin, IE	telnet	23
048-08-280	Abd-Min-8304errin-Suak-Pool	85.95.94.146	Istanbul, TR	Kirkville, US	ntp-router	53473
048-08-518	Abd-Min-8304errin-Suak-Pool	85.95.94.146	Istanbul, TR	Kirkville, US	ntp-router	53473
048-08-518	Abd-Min-8304errin-Suak-Pool	85.95.94.146	Istanbul, TR	Kirkville, US	ntp-router	53473
048-08-518	Abd-Min-8304errin-Suak-Pool	85.95.94.146	Istanbul, TR	Kirkville, US	ntp-router	53473
048-08-518	Abd-Min-8304errin-Suak-Pool	85.95.94.146	Istanbul, TR	Kirkville, US	ntp-router	53473
048-08-518	Abd-Min-8304errin-Suak-Pool	85.95.94.146	Istanbul, TR	Kirkville, US	ntp-router	53473
048-08-518	Abd-Min-8304errin-Suak-Pool	85.95.94.146	Istanbul, TR	Kirkville, US	ntp-router	53473
048-08-518	Abd-Min-8304errin-Suak-Pool	85.95.94.146	Istanbul, TR	Kirkville, US	ntp-router	53473

None

Exploit

Port Scan



Кібертероризм
(Cyberterrorism)



Шахрайство в
інтернеті
(Internet Fraud)



Кібервійни
(Cyberwarfare)



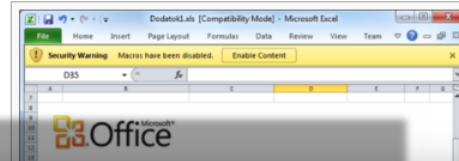
Кібервимагання
(CyberXtortion)

Кібератака на енергетичні компанії України [ред. • ред. код]

Матеріал з Вікіпедії — вільної енциклопедії.

Кібератака на енергетичні компанії України — перша зареєстрована успішна кібератака на енергетичну систему з виведенням її із ладу. Сталась **23 грудня 2015 року**. Російським зловмисникам вдалось успішно атакувати комп'ютерні системи управління трьох енергопостачальних компаній України. Наступна, і набагато менш масштабна за наслідками, кібератака сталась вночі з 17 на 18 грудня 2016 року. Протягом трохи більше однієї години була виведена з ладу підстанція «Північна» енергокомпанії «Укренерго», без струму залишились споживачі північної частини правого берегу Києва та прилеглих районів області^[1].

Кібератака на енергетичні компанії України



США: доказательства вмешательства РФ в выборы неопровержимы



AN UNPRECEDENTED LOOK AT STUXNET, THE WORLD'S FIRST DIGITAL WEAPON



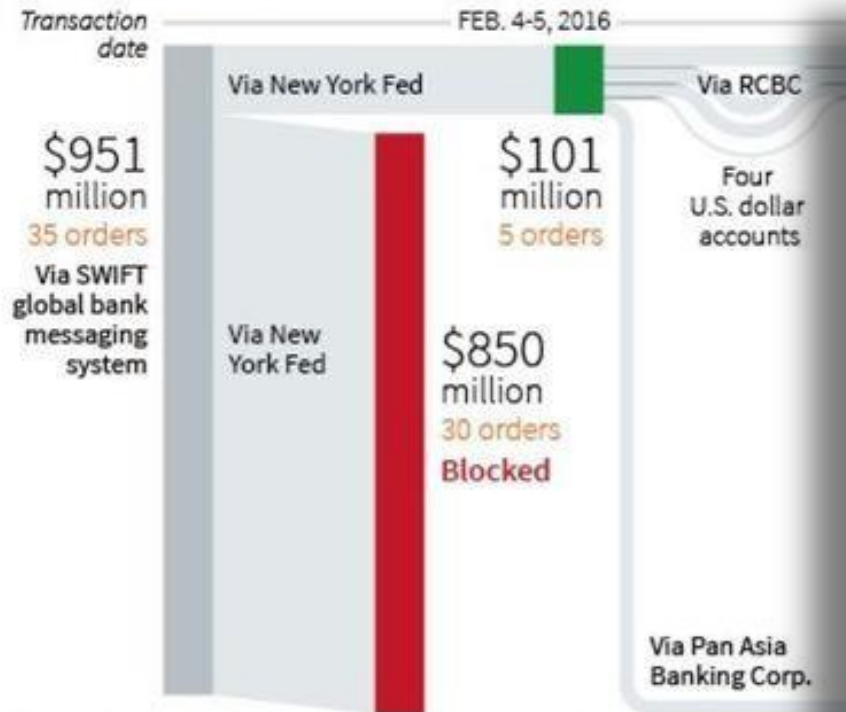
Number of health care providers affected by electronic hacks, 2010 - 2019



Bangladesh Bank heist

In one of the largest cyber heists in history, hackers ordered the Federal Reserve Bank of New York to transfer \$81 million from Bangladesh Bank to accounts in the Philippines.

THE MONEY TRAIL



Sources: Philippines Court of Appeals documents; Reuters

W. Foo, 31/03/2016

HOW HACKERS STOLE \$80



SOLERA DeepSee Capture Statistics Settings Profile Log Out

THE FIREWALL OF THE UNITED STATES

COMPUTER BLOCKED

This computer has been blocked to Americans by the US Government Firewall

ALL ACTIVITY OF THIS COMPUTER HAS BEEN RECORDED

Illegally downloaded material (audio, videos or software) has been located on your computer

Take your cash to one of these retail locations:

If you use webcam, videos and pictures were saved for identification. You can be clearly identified by resolving your IP address

To perform the payment, enter the acquired GreenDot MoneyPak code in the designated payment field and press the „OK” button.

Come back and enter your MoneyPak code to unlock your Computer.

McAfee

Станом на 17 червня 2017 року інфіковано комп'ютери 150 країн, кількість інфікованих комп'ютерів перевищила 500 000. Вимога переказати гроші перекладена 28 мовами світу.



Oops, your important files are encrypted.

If you see this text, then your files are no longer accessible, because they have been encrypted. Perhaps you are busy looking for a way to recover your files, but don't waste your time. Nobody can recover your files without our decryption service.

We guarantee that you can recover all your files safely and easily. All you need to do is submit the payment and purchase the decryption key.

Please follow the instructions:

1. Send \$300 worth of Bitcoin to following address:

1Mz7153HMuxXTuR2R1t78MGSdzaAtNbBWX

2. Send your Bitcoin wallet ID and personal installation key to e-mail wowsmith123456@posteo.net. Your personal installation key:

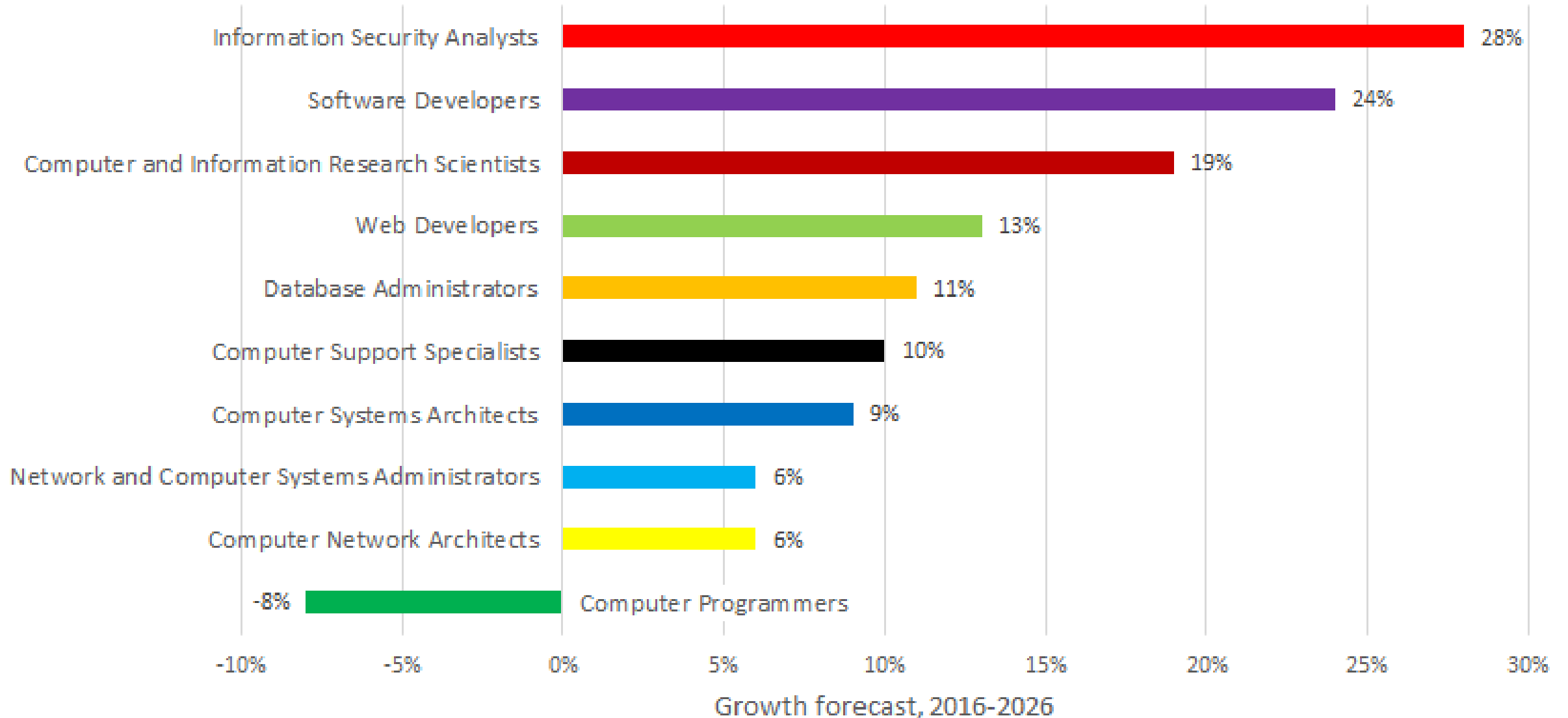
Ap5JUv-qhTAHy-HyeyS2-wqeQEK-YtHQeK-w7NUMZ-11RBUq-fuu4Wa-zp08dS-zeQNGS

If you already purchased your key, please enter it below.

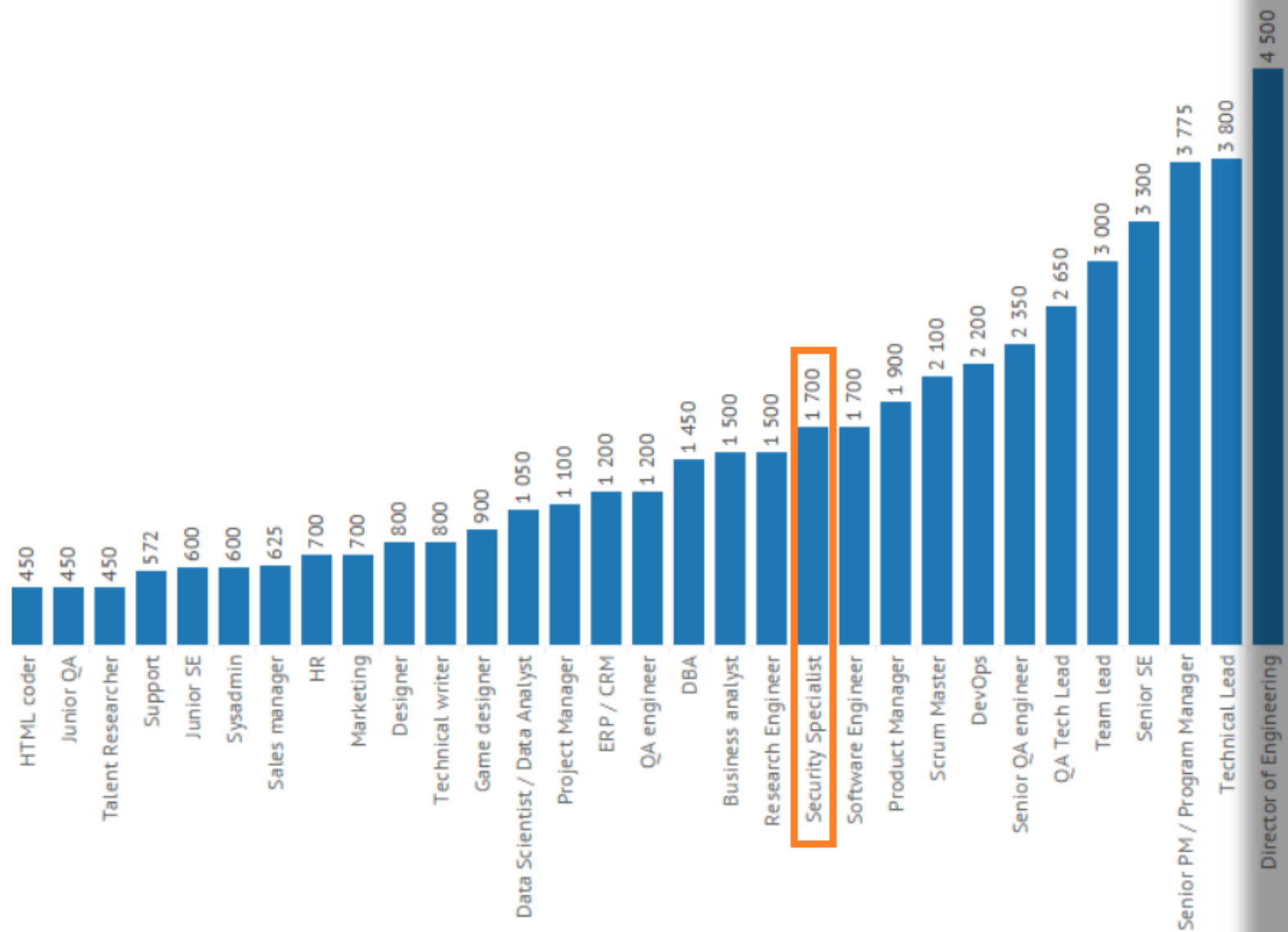
Key: _



Computer and IT jobs outlook, 2016-26



Средние зарплаты по всем должностям



#		Average GROSS Salary
1.	Computer Architect	US\$ 144,718
2.	IT Researching	US\$ 126,833
3.	Consulting, Speaker	US\$ 123,561
4.	SAP Consulting	US\$ 121,500
5.	SAP Developer	US\$ 108,999
6.	Software Engineer	US\$ 104,229
7.	Hardware Engineer	US\$ 103,607
8.	Network Manager	US\$ 100,584
9.	Security Specialist	US\$ 97,077
10.	SAP Administrator	US\$ 96,000
11.	Computer Engineer	US\$ 92,747

ТЯЖКО
ТА
ДОВГО?



CLOUD



ENTERPRISE SECURITY



IDENTITY & ACCESS MANAGEMENT



THREAT INTELLIGENCE



NETWORKING



VIRTUALIZATION



SD-WAN



SECURITY ANALYTICS



ПОТРІБНО:

- НАПИСАТИ ПОЛІТИКИ\СТАНДАРТИ
- РОЗІБРАТИСЯ З ІНФРАСТРУКТУРОЮ
- РОЗІБРАТИСЯ З ЛОГАМИ
- ВИВИВЧИТИ МЕРЕЖЕВИЙ СТЕК
- РОЗІБРАТИСЯ З FIREWALL-АМИ
- РОЗІБРАТИСЯ З IDS
- РОЗІБРАТИСЯ З SIEM-ОМ
- ВСТАНОВИТИ ТА ПІДТРИМУВАТИ АНТИВІРУСНІ РІШЕННЯ
- ОРГАНІЗУВАТИ ДОСТАВКУ ЛОГІВ З РІЗНИХ ДЖЕРЕЛ ДО SIEM-У
- І БАГАТО-БАГАТО-БАГАТО ІНШОГО

ДОРОГО?





Picture source: <https://www.linkedin.com/pulse/security-operations-center-soc-built-shared-branden-rowe/>

ПРАКТИКА

A vertical yellow line is positioned to the right of the word 'ПРАКТИКА', extending from the top of the word down to the bottom of the word.

Live Results Scan

Mon, 17 Sep 2018 17:57:16 EDT

TABLE OF CONTENTS

Hosts Executive Summary

- localhost

Hosts Executive Summary

[Collapse All](#) | [Expand All](#)

localhost



Severity	CVSS	Plugin	Name
CRITICAL	10.0	56584	[Offline] Mozilla Foundation Unsupported Application Detection (macOS)
HIGH	9.3	108375	[Offline] Mozilla Firefox < 59 Multiple Vulnerabilities (macOS)
HIGH	9.3	108585	[Offline] Mozilla Firefox < 59.0.1 Multiple Code Execution Vulnerabilities (macOS)
HIGH	9.3	109867	[Offline] Mozilla Firefox < 60 Multiple Critical Vulnerabilities (macOS)
HIGH	9.3	110806	[Offline] Mozilla Firefox < 61 Multiple Critical Vulnerabilities (macOS)
HIGH	9.3	117291	[Offline] Mozilla Firefox < 62 Multiple Critical Vulnerabilities (macOS)

СКАНЕРИ
ВРАЗЛИВОСТЕЙ
АБО МЕНЕДЖМЕНТ
ВРАЗЛИВОСТЕЙ



**IDS/IPS
СИСТЕМИ
ВИЯВЛЕННЯ
МЕРЕЖЕВОГО
ВТОРГНЕННЯ**

TIE Server



ATD



All components which subscribe to the topic, listen for information

IPS



Web Gateway



3rd Party Solutions



SIEM



Data

ENDPOINT DETECTION AND RESPONSE (EDR)



ePO



Active response



MOVE



Endpoint protection



TIE Endpoint Module



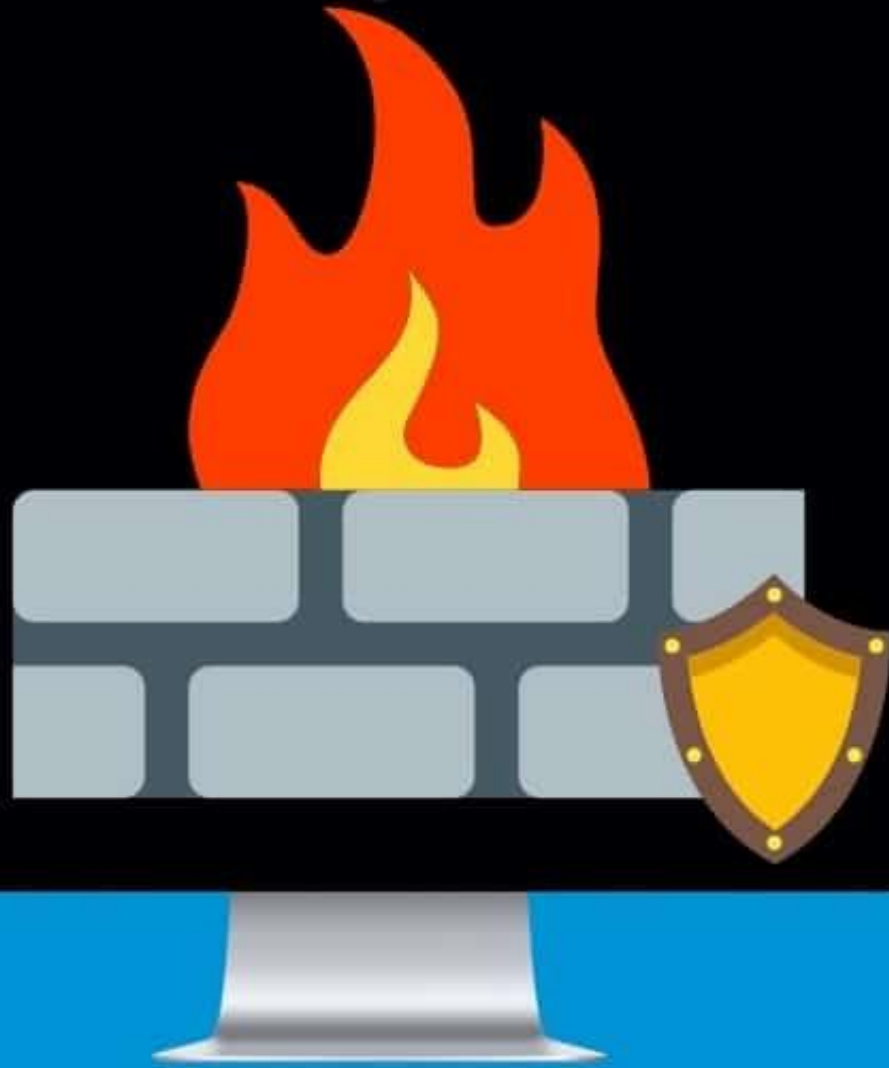
DLP



Application Control

NGFW

**NEXT
GENERATION
FIREWALL**





ЩО TAKE SIEM?

Security information and event management

incident

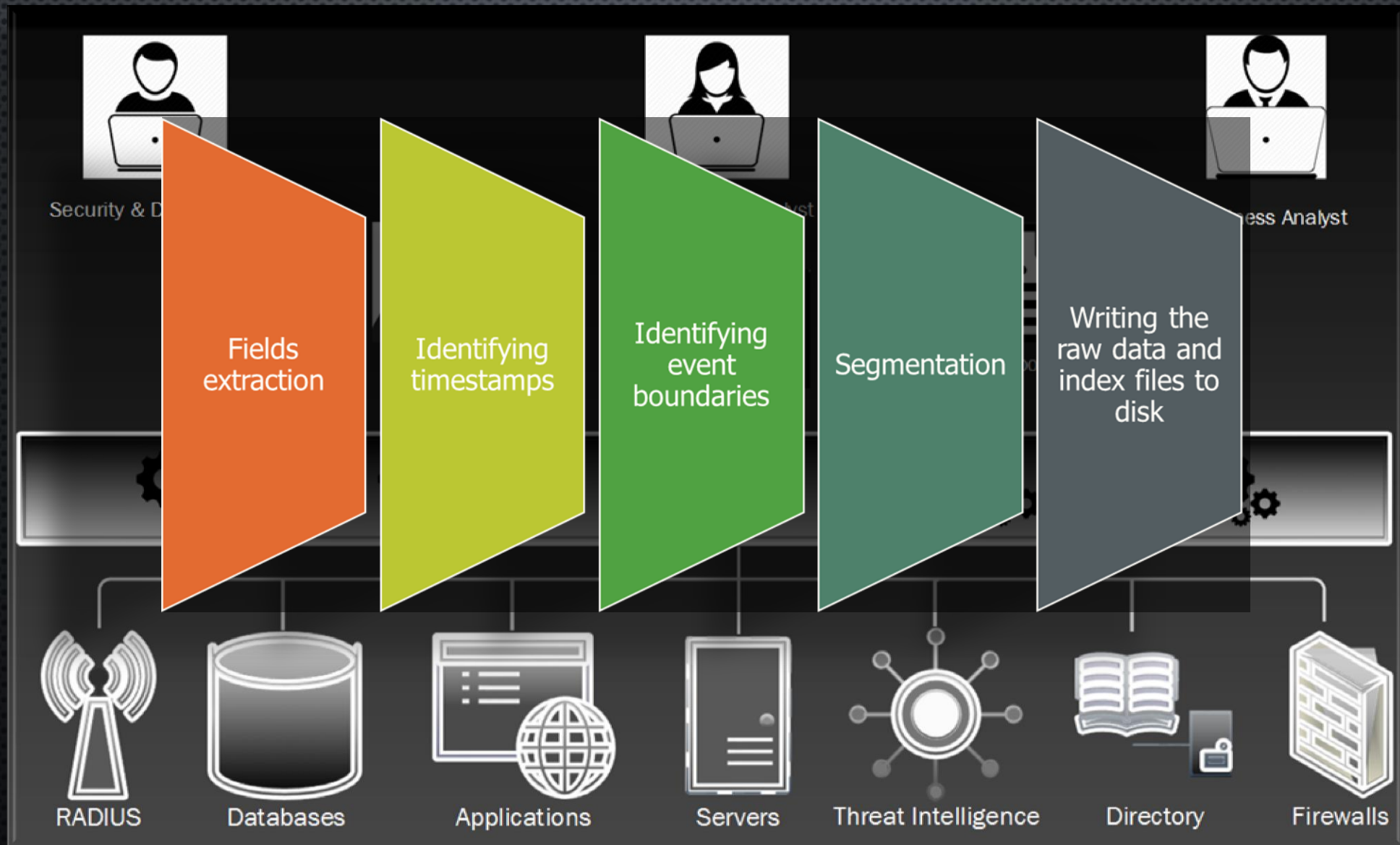
investigation



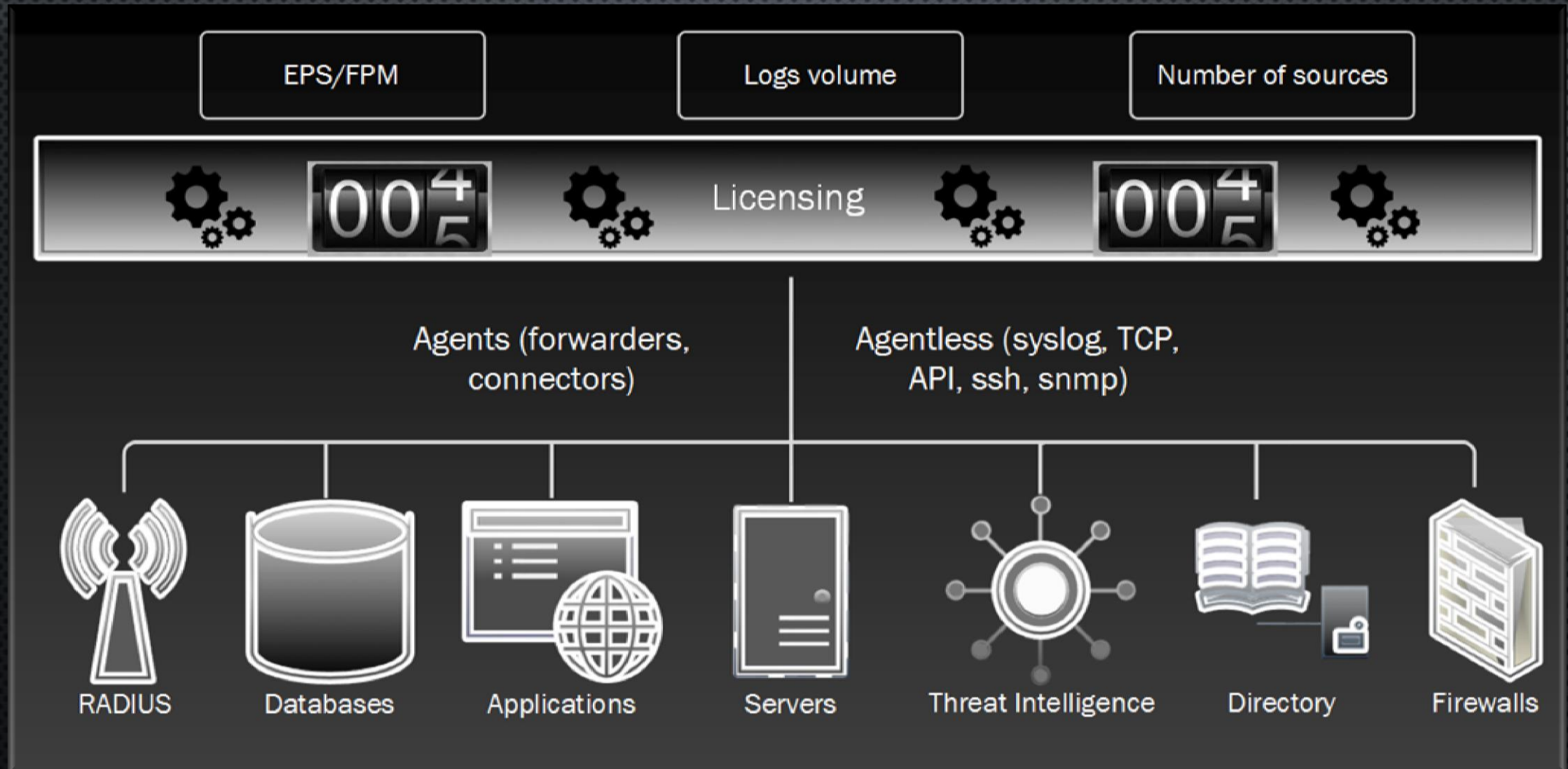
МОЖЛИВОСТІ



МОЖЛИВОСТІ



ЛІЦЕНЗУВАННЯ



MAGIC QUADRANT FOR SIEM



https://en.wikipedia.org/wiki/Magic_Quadrant

Cloud/Hosting Security

Data/Information Security

Mobile Security

Identity/Fraud Security

Industrial Security

Security Intelligence/Analytics

Threat Detection/Mitigation

Application Security

Email Security

Brand Protection

Computer Forensics

Security Hardware

Security Technology

Venture Scanner

Purchase landscape report with all 413 companies
info@venturescanner.com

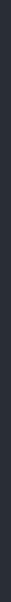
Risk Assessment/Compliance

Endpoint Security/Firewalls



THE PEOPLE

ДЕКІЛЬКА ПРИКЛАДІВ



[**] [116:59:1] (snort_decoder): Tcp Window Scale Option found with length
[Priority: 3]

09/29-17:52:43.726408 192.168.198.133:36130 -> 192.168.198.132:1

TCP TTL:40 TOS:0x0 ID:23250 IpLen:20 DgmLen:60

U*PF Seq: 0xF842185F Ack: 0xA5E94B67 Win: 0xFFFF TcpLen: 40 UrgPtr

TCP Options (5) => WS: 15 NOP MSS: 265 TS: 4294967295 0 SackOK

[**] [1:1228:7] SCAN nmap XMAS [**]

[Classification: Attempted Information Leak] [Priority: 2]

09/29-17:52:43.726408 192.168.198.133:36130 -> 192.168.198.132:1

TCP TTL:40 TOS:0x0 ID:23250 IpLen:20 DgmLen:60

U*PF Seq: 0xF842185F Ack: 0xA5E94B67 Win: 0xFFFF TcpLen: 40 UrgPtr

TCP Options (5) => WS: 15 NOP MSS: 265 TS: 4294967295 0 SackOK

[Xref => <http://www.whitehats.com/info/IDS30>]

[**] [1:2466:7] NETBIOS SMB-DS IPC\$ unicode share access [**]

[Classification: Generic Protocol Command Decode] [Priority: 3]

09/29-17:53:35.987658 192.168.198.1:61290 -> 192.168.198.133:445

TCP TTL:64 TOS:0x0 ID:42494 IpLen:20 DgmLen:130 DF

AP Seq: 0x354E3DEE Ack: 0xB621EF9B Win: 0xFFFF TcpLen: 32

TCP Options (3) => NOP NOP TS: 1184479449 276837



Test

CURRENT RESULTS: MAY 11 AT 10:34 PM

Configure

Audit Trail

Launch ▾

Export ▾

🔍 Filter Vulnerabilities ▾

Hosts > 192.168.56.102 > Vulnerabilities **41** Compliance 217

<input type="checkbox"/>	Severity ▲	Plugin Name	Plugin Family	Count
<input type="checkbox"/>	CRITICAL	CentOS 6 / 7 : openssl (CE...	CentOS Local Security Checks	1
<input type="checkbox"/>	CRITICAL	CentOS 7 : glibc (CESA-201...	CentOS Local Security Checks	1
<input type="checkbox"/>	HIGH	CentOS 7 : graphite2 (CESA...	CentOS Local Security Checks	1
<input type="checkbox"/>	HIGH	CentOS 7 : kernel (CESA-20...	CentOS Local Security Checks	1
<input type="checkbox"/>	HIGH	CentOS 7 : mariadb (CESA-...	CentOS Local Security Checks	1
<input type="checkbox"/>	MEDIUM	CentOS 5 / 6 / 7 : bind (CES...	CentOS Local Security Checks	1
<input type="checkbox"/>	MEDIUM	CentOS 6 / 7 : ipa / libldb / li...	CentOS Local Security Checks	1
<input type="checkbox"/>	MEDIUM	CentOS 6 / 7 : libssh2 (CES...	CentOS Local Security Checks	1
<input type="checkbox"/>	MEDIUM	CentOS 6 / 7 : nss-util (CES...	CentOS Local Security Checks	1
<input type="checkbox"/>	MEDIUM	CentOS 6 / 7 : samba (CES...	CentOS Local Security Checks	1
<input type="checkbox"/>	MEDIUM	CentOS 6 / 7 : ...	CentOS Local Security Checks	1

Host Details

IP: 192.168.56.102
 DNS: st91.i
 MAC: 08:00:27:db:3e:a2
 OS: Linux Kernel
 3.10.0-327.4.5.el7.x86_64 on
 CentOS Linux release 7.2.1511
 (Core)
 Start: May 11 at 10:34 PM
 End: May 11 at 10:39 PM
 Elapsed: 6 minutes
 KB: [Download](#)

Vulnerabilities



Vulnerability (Corporate Assets)

Navigation: Home | Dashboard | Reports | Alerts | Audit | Settings | Help

Filters: View: List | Map | Pie | Funnel | Bar | Line | Table | Filter: All | Add Filter | Reset Filters

Global Status: Overall: 245 Critical, 970 High, 4,740 Medium, 1,939 Low. Trend: 10% increase over 30 days.



Service	Critical	High	Medium	Low
Active Directory	10	20	30	40
SQL Server	5	15	25	35
IIS	3	12	20	30
Exchange	2	10	18	28
Windows Firewall	1	8	15	25
Windows Defender	1	7	14	24
Windows Update	1	6	13	23
Windows Security	1	5	12	22
Windows Firewall with Advanced Security	1	4	11	21
Windows Defender Security Center	1	3	10	20

Severity	Count	Category	Description
Critical	245	Microsoft Exchange Server	MSExchange-AuthProxyAuthAs: Local Administrator Privilege Escalation
Critical	245	Microsoft Exchange Server	MSExchange-AuthProxyAuthAs: Local Administrator Privilege Escalation
High	970	Microsoft Exchange Server	MSExchange-AuthProxyAuthAs: Local Administrator Privilege Escalation
High	970	Microsoft Exchange Server	MSExchange-AuthProxyAuthAs: Local Administrator Privilege Escalation
Medium	4,740	Microsoft Exchange Server	MSExchange-AuthProxyAuthAs: Local Administrator Privilege Escalation
Medium	4,740	Microsoft Exchange Server	MSExchange-AuthProxyAuthAs: Local Administrator Privilege Escalation
Low	1,939	Microsoft Exchange Server	MSExchange-AuthProxyAuthAs: Local Administrator Privilege Escalation
Low	1,939	Microsoft Exchange Server	MSExchange-AuthProxyAuthAs: Local Administrator Privilege Escalation

2. Feature Engineering and Selection

Edit Export ...

Feature Engineering

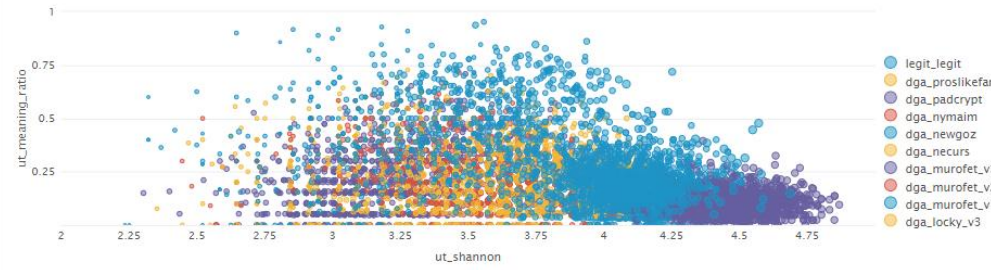
Detecting DGAs may require additional features that are not present in the raw table of domain names. Additional features can be any meaningful additional information that help to characterize the dataset with regards to the analytics goal, ideally in a very distinct manner. In this case we derive features from the pure domain name strings that allow to shape indicators of a generated domain name. As part of data preprocessing we save the computed results after using some SPL and methods from the URL Toolbox App.



Domain dataset enriched with features

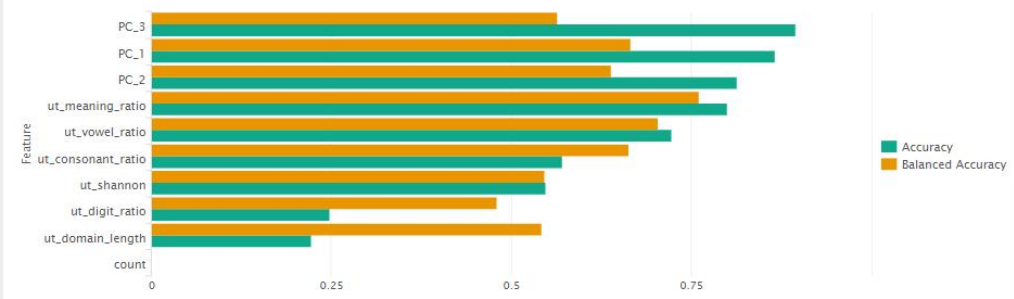
domain	class	subclass	ut_consonant_ratio	ut_digit_ratio	ut_domain_length	ut_meaning_ratio	ut_shannon	ut_vowel_ratio	PC_1	PC_2	PC_3
pmmwqxwugjnlbusofytg.ru	dga	murofet_v1	0.800	0.000	26.000	0.269	3.979	0.231	0.057	0.114	0.111
eiopinmw.ru	dga	locky_v2	0.600	0.000	12.000	0.417	3.418	0.417	0.047	0.115	0.115
kyrsqsgji.org	dga	nymaim	0.900	0.000	14.000	0.143	3.379	0.071	0.155	0.728	-0.347
kporwllkmotyds.com	dga	murofet_v2	0.700	0.000	19.000	0.158	3.682	0.263	-0.326	-0.019	-0.150
xqemvapturim.sh	dga	nekurs	0.700	0.000	15.000	0.267	3.774	0.267	0.024	0.041	0.044
pzvaxtg.com	dga	nymaim	0.900	0.000	12.000	0.000	3.585	0.083	-0.428	-0.167	-0.093
xgsajfmoypxbfiety.net	dga	fobber	0.900	0.000	21.000	0.286	3.916	0.143	0.569	-0.324	-0.095
wtblfvpjomjxgmgfusgoin.com	dga	murofet_v1	0.800	0.000	28.000	0.179	4.138	0.179	-0.425	-0.162	-0.085
sptdsbhhrvfmsm.in	dga	nekurs	0.900	0.000	18.000	0.222	3.503	0.056	0.032	0.080	0.089
bnxrijmsuhlyvoctzi.net	dga	fobber	0.800	0.000	21.000	0.381	4.071	0.238	0.538	-0.289	-0.078

Distribution of classes depending on example feature combination

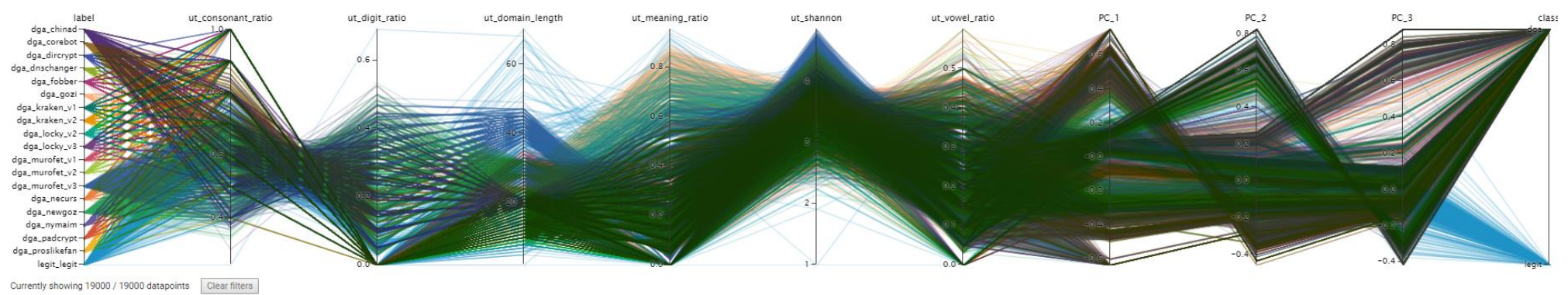


These results may be truncated. This visualization is configured to display a maximum of 10000 results per series, and that limit has been reached. [Learn More](#)

Identify useful features for classification with the analyzefields command



Parallel coordinate chart of classes and top features



Incident Review

Incident Review

Urgency

CRITICAL	3
HIGH	13
MEDIUM	83
LOW	129
INFO	871

Status
Select...

Owner
Select...

Security Domain
Select...

Tag
Type...

Correlation Search | Sequenced Event

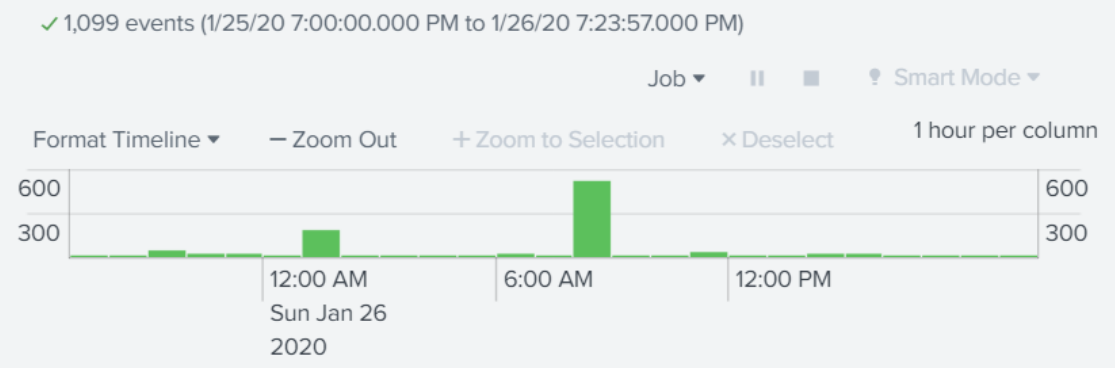
Select...

Search

Time | Associations

Last 24 hours

Submit



[Edit Selected](#) | [Edit All 1099 Matching Events](#) | [Add Selected to Investigation](#)

i	<input type="checkbox"/>	Time	Security Domain	Title	Urgency	Status	Owner	Source	User	Actions
>	<input type="checkbox"/>	1/24/20 2:13:22.000 PM	Network	[ML] Finds Anomaly of IDS Event per "Likely TDS redirecting to exploit kit" for Last Hour	Medium	In Progress				
>	<input type="checkbox"/>	1/24/20 2:10:16.000 PM	Threat	Threat Activity Detected (51.75.52.127 --> ...). Collection: sans 51.75.52.0-51.75.52.255	Medium	New	unassigned			
>	<input type="checkbox"/>	1/24/20 2:09:41.000 PM	Access	[ML] Anomaly Failed Logins with One or More Success on Source - "..." for Last Hour	Medium	New	unassigned			
>	<input type="checkbox"/>	1/24/20 2:09:41.000 PM	Access	[ML] Anomaly Failed Logins with One or More Success on Source - for Last Hour	Medium	New	unassigned			
>	<input type="checkbox"/>	1/24/20 2:09:41.000 PM	Access	[ML] Anomaly Failed Logins with One or More Success on Source - '...' for Last Hour	High	In Progress				
>	<input type="checkbox"/>	1/24/20 1:14:23.000 PM	Network	[ML] Finds Anomaly of IDS Events on Host "..." for Last Hour	Medium	In Progress				
>	<input type="checkbox"/>	1/24/20 1:10:25.000 PM	Threat	Threat Activity Detected (101.248.141.65 --> ...). Collection: emerging_threats_ip_blocklist 101.248.0.0/15	Medium	New	unassigned			
>	<input type="checkbox"/>	1/24/20 1:10:22.000 PM	Threat	Threat Activity Detected (101.249.0.108 --> ...). Collection: emerging_threats_ip_blocklist 101.248.0.0/15	Medium	New	unassigned			
>	<input type="checkbox"/>	1/24/20 1:10:22.000 PM	Threat	Threat Activity Detected (101.249.18.213 --> ...). Collection: emerging_threats_ip_blocklist 101.248.0.0/15	Medium	New	unassigned			
>	<input type="checkbox"/>	1/24/20 1:10:22.000 PM	Threat	Threat Activity Detected (101.249.37.130 --> ...). Collection: emerging_threats_ip_blocklist 101.248.0.0/15	Medium	New	unassigned			
>	<input type="checkbox"/>	1/24/20 1:00:55.000 PM	Access	Account Deleted by ykharchpr	Unknown	New	unassigned			

Дякую за Увагу