

Integrácia s kľúčovými komponentami

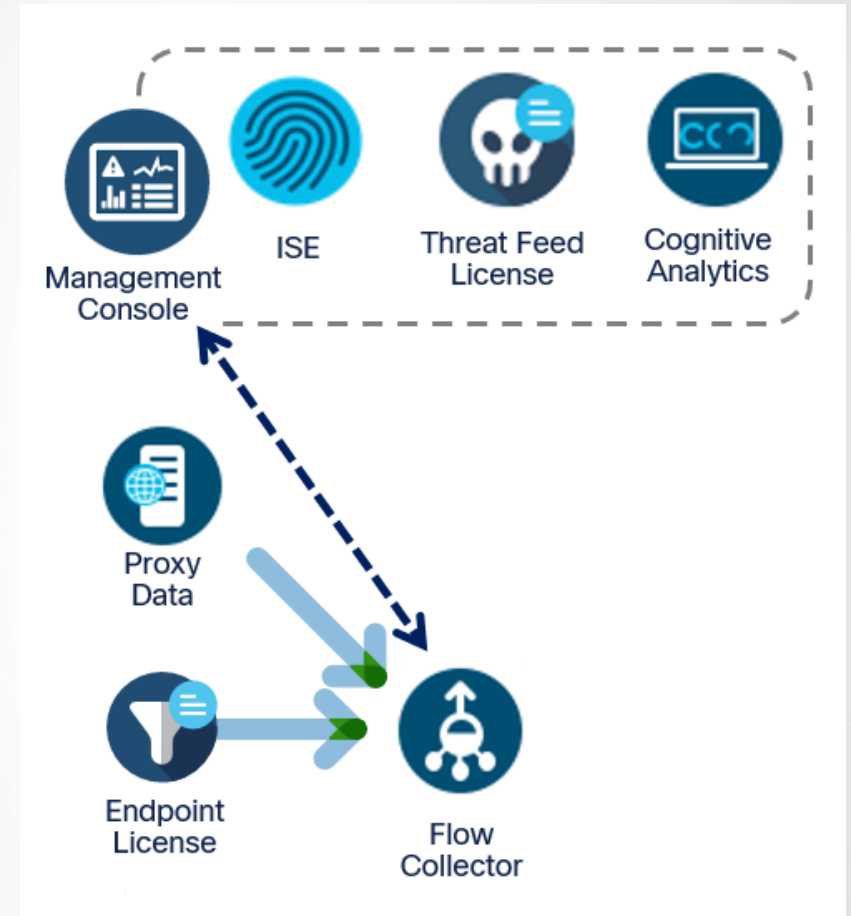
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Contextual Feeds

Doplnenie d'alších prepojení a zdroj pre lepšiu viditeľnosť

- **Cisco ISE (pxGrid)**
 - Authentication (User <-> IP)
 - TrustSec Tags (SGT/DGT)
 - Quarantine Capability
- **Proxy Ingest**
- **Endpoint License**
- **Threat Feed**
- **Cognitive Analytics**
- **Encrypted Traffic Analytics**
- **Cisco ASA (Neflow Security Event Logging)**
 - Flow create/teardown/deny udalosti
 - NAT udalosti



ISE integrácia

Cisco® ISE Configuration



Dashboards Monitor Analyze Jobs Configure Deploy

Cluster Name	Primary pxGrid Node	Secondary pxGrid Node	User Name	Status	Actions
Bratislava ISE cluster	10.6...	10.6...	smc.busec.soitron.as	● ↻	ⓘ

Flow Search Results (2,000)

Save Search Save Results Start New Search

100% Complete Delete Search

Edit Search Last 5 minutes (Time Range) 2,000 (Max Records)

Subject: Either (Orientation)

Connection: All (Flow Direction)

Manage Columns Summary Export ⓘ

START	DURATION	SUBJECT IP A...	SUBJECT POR...	SUBJECT HOS...	SUBJECT USER	SUBJECT BYTES	APPLICATION	TOTAL BYTES	PEER IP ADDR...	PEER PORT/P...	PEER HOST G...	PEER BYTES
📅 Ex. 06/05	Ex. <=50min	Ex. 10.10.10	Ex. 57100/UA	Ex. *catch A	Ex. john	Ex. <=50M	Ex. *Corpora	Ex. <=50M	Ex. 10.255.2	Ex. 2055/UD	Ex. *Catch A	Ex. <=50M
▶ Nov 15, 2018 9:2... (4min 23s ago)	2min 27s	10.65.0.28 ⓘ	52717/TCP	Soitron Users Ca...	SOITRONIsikurav	1.64 M	HTTP	793.94 M	10.64.0.30 ⓘ	8530/TCP	Servers	792.3 M
▶ Nov 10, 2018 7:3... (5d 1hr 53min 3...	5d 1hr 51min 40s	10.64.0.133 ⓘ	3586/TCP	Servers	--	604.42 M	SQL	610.24 M	172.16.12.94 ⓘ	1214/TCP	DMZ IN	5.83 M
▶ Nov 15, 2018 9:2... (6min 16s ago)	2min 58s	10.64.0.30 ⓘ	8530/TCP	Servers	--	546.36 M	business systems	547.02 M	10.65.0.28 ⓘ	52732/TCP	Soitron Users Ca...	676.79 K
▶ Nov 15, 2018 9:2... (7min 25s ago)	5min 29s	10.65.5.59 ⓘ	60735/TCP	WIFI Users Vlan ...	SOITRONIsamue...	189.2 K	HTTPS (unclassif...	319.51 M	52.223.200.41 ⓘ	443/TCP	Netherlands	319.32 M
▶ Nov 15, 2018 9:0... (32min 48s ago)	30min 52s	10.11.0.36 ⓘ	57047/UDP	VoIP Gateways	--	138.9 M	streaming audio/...	279.37 M	10.128.11.10 ⓘ	21695/UDP	Praha	140.48 M
▶ Nov 15, 2018 9:1... (14min 56s ago)	13min	10.64.0.30 ⓘ	8530/TCP	Servers	--	254.48 M	business systems	254.55 M	10.94.50.16 ⓘ	52312/TCP	Bulharsko HP	78.64 K
▶ Nov 15, 2018 9:0... (31min 59s ago)	30min 3s	10.11.0.6 ⓘ	58675/UDP	VoIP Gateways	--	79.03 M	streaming audio/...	160.31 M	10.11.0.14 ⓘ	2339/UDP	VoIP Gateways	81.28 M
▶ Nov 15, 2018 9:3... (2min 2s ago)	6s	10.65.4.252 ⓘ	61846/TCP	WIFI Users Vlan ...	david.dvorak	545.16 K	streaming audio/...	131.8 M	17.253.109.201 ⓘ	80/TCP	United States	131.26 M
▶ Nov 13, 2018 10:... (1d 23hr 21min ...	1d 23hr 18min 27s	10.64.0.105 ⓘ	6346/TCP	Mail Servers	--	58.7 M	Undefined TCP	90.53 M	10.64.0.104 ⓘ	2525/TCP	Mail Servers	31.84 M
▶ Nov 15, 2018 8:4... (49min 22s ago)	46min 36s	10.65.5.15 ⓘ	64538/TCP	WIFI Users Vlan ...	michal.dolnik@s...	375.18 K	HTTPS (unclassif...	85.53 M	93.99.92.8 ⓘ	443/TCP	Czech Republic	85.16 M



ISE integrácia

Flow Search Results (2,000)

[Edit Search](#)
Last 5 minutes (Time Range)
2,000 (Max Records)

Subject: Either (Orientation)

Connection: All (Flow Direction)

Cisco ISE Configuration ⓘ
Add new configuration

Cluster Name	Primary pxGrid Node	Secondary pxGrid Node	User Name	Status	Actions
Bratislava ISE cluster	10. [redacted] ⓘ	10. [redacted] ⓘ	smc.busec.soitron.as	● ↻	ⓘ

START	DURATION	SUBJECT IP A...	SUBJECT POR...	SUBJECT HOS...	SUBJECT USER	SUBJECT BYTES	APPLICATION	TOTAL BYTES	PEER IP ADDR...	PEER PORT/P...	PEER HOST G...	PEER BYTES
📅 Ex. 06/05	Ex. <=50min	Ex. 10.10.10	Ex. 57100/UD	Ex. "catch A	Ex. john	Ex. <=50M	Ex. "Corpora	Ex. <=50M	Ex. 10.255.2	Ex. 2055/UD	Ex. "Catch A	Ex. <=50M
▶ Nov 15, 2018 9:2... (4min 23s ago)	2min 27s	10.65.0.28 ⓘ	52717/TCP	Soitron Users Ca...	SOITRON\sikurav	1.64 M	HTTP	793.94 M	10.64.0.30 ⓘ	8530/TCP	Servers	792.3 M
▶ Nov 10, 2018 7:3... (5d 1hr 53min 3...	5d 1hr 51m											
▶ Nov 15, 2018 9:2... (6min 16s ago)	2min 58s		60735/TCP	WIFI Users Vlan ...	SOITRON\samue...	189.2 K	HTTPS					
▶ Nov 15, 2018 9:2... (7min 25s ago)	5min 29s											
▶ Nov 15, 2018 9:0... (32min 48s ago)	30min 52s											
▶ Nov 15, 2018 9:1... (14min 56s ago)	13min	10.64.0.30 ⓘ	8530/TCP	Servers	--	254.48 M	business systems	254.55 M	10.94.50.16 ⓘ	52312/TCP	Bulharsko HP	78.64 K
▶ Nov 15, 2018 9:0... (31min 59s ago)	30min 3s	10.11.0.6 ⓘ	58675/UDP	VoIP Gateways	--	79.03 M	streaming audio/...	160.31 M	10.11.0.14 ⓘ	2339/UDP	VoIP Gateways	81.28 M
▶ Nov 15, 2018 9:3... (2min 2s ago)	6s	10.65.4.252 ⓘ	61846/TCP	WIFI Users Vlan ...	david.dvorak	545.16 K	streaming audio/...	131.8 M	17.253.109.201 ⓘ	80/TCP	United States	131.26 M
▶ Nov 13, 2018 10:... (1d 23hr 21min ...	1d 23hr 18min 27s	10.64.0.105 ⓘ	6346/TCP	Mail Servers	--	58.7 M	Undefined TCP	90.53 M	10.64.0.104 ⓘ	2525/TCP	Mail Servers	31.84 M
▶ Nov 15, 2018 8:4... (48min 32s ago)	46min 36s	10.65.5.15 ⓘ	64538/TCP	WIFI Users Vlan ...	michal.dolnik@...	375.18 K	HTTPS (unclassif...	85.53 M	93.99.92.8 ⓘ	443/TCP	Czech Republic	85.16 M

Proxy viditeľnosť

- Proxy posiela do kolektora logy prostredníctvom **syslog** protokolu
- Kolektor asocjuje logy s flow dátami
- Podporované: Cisco WSA, Bluacoat, Squid, McAfee Web Gateway, ...
- Získané dáta
 - User Name, URL, URL Host, Byte Summary, Session Duration, Source IP/Port, Destination IP/Port

The image shows a screenshot of network logs with several fields highlighted in blue boxes. Arrows point from these boxes to labels below the log entries. The labels are: Source IP/Port, Destination IP/Port, URL, and Username.

Start: 03/03 - 11:28:34 End: 03/03 - 11:28:35 Duration: 3ms	10.192.85.61 35080	1.60839843	64.233.166.189 443	google.com	<input type="checkbox"/> tunnel://33.docs.google.com:443/		
Start: 03/03 - 11:28:31 End: 03/03 - 11:28:32 Duration: 128ms	10.192.85.61 35080	195.24.3.234 80	826 Bytes <input type="checkbox"/> 39 Bytes	64.233.166.189 443	33.docs.google.com	<input type="checkbox"/> tunnel://33.docs.google.com:443/	kho
	Source IP/Port		Destination IP/Port		URL		Username

```
Syslog 234 USER.INFO: Feb 22 15:08:59 StealthWatch: Info: 1456133937.679 252 192.168.2.100 40526 335 64.102.255.40 80 3722 - www.gstatic.com http://www.gstatic.com/external_hosted/picturefi...
Syslog 233 USER.INFO: Feb 22 15:08:59 StealthWatch: Info: 1456133938.372 754 192.168.2.100 40536 334 64.102.255.40 80 6673 - www.gstatic.com http://www.gstatic.com/external_hosted/hammerjs/...
Syslog 192 USER.INFO: Feb 22 15:09:10 StealthWatch: Info: 1456133939.306 1444 192.168.2.100 40556 447 64.102.255.40 80 6413 - www.google.com http://www.google.com/jsapi
Syslog 187 USER.INFO: Feb 22 15:09:20 StealthWatch: Info: 1456133952.480 250 192.168.2.100 40588 365 64.102.255.40 80 373 - www.android.com http://www.android.com/
```

DEVICE ACCOUNTS

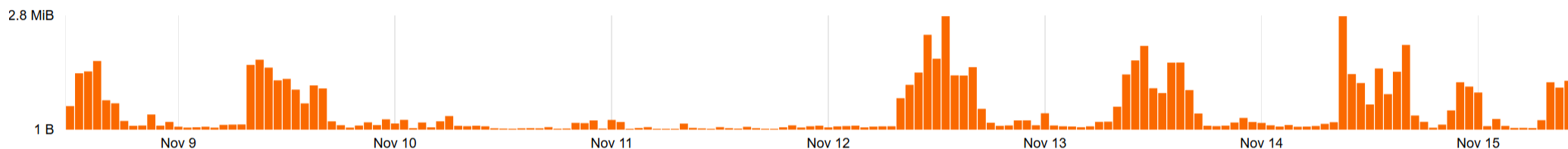
Though possible to share an account between multiple devices or upload processes, **we recommend you use a separate account for each device** to minimize the possibility of file name conflicts and to make troubleshooting upload problems easier.

[+ Add device account](#)

[EXPAND ALL](#)

DEVICE	LAST UPLOAD ?	DURATION ?	UPLOADED ?	RATE ?	LAST 7 DAYS ?	STATUS
▼ sbtswsa01	16 mins, 40 s ago	1.654 s	1.3 MiB	779.92 KB/s	78.3 MiB	READY ■

UPLOAD VOLUME LAST 7 DAYS



PROTOCOL SCP USERNAME d42101452550238258408271797

[REMOVE DEVICE](#) [ACTIVITY LOG](#) [SHOW INFO](#)

▼ sbtswsa02	10 mins, 10 s ago	1.38 s	1.6 MiB	1.14 MB/s	120.0 MiB	READY ■
-------------	-------------------	--------	---------	-----------	-----------	--

UPLOAD VOLUME LAST 7 DAYS



PROTOCOL SCP USERNAME d04153689074431607442885593

[REMOVE DEVICE](#) [ACTIVITY LOG](#) [SHOW INFO](#)

Threat Intelligence License

- Voliteľná licencia pre kolektory (odhaľovanie komunikácie na „nevhodné“ ciele)



Endpoint Visibility

- Integração do Cisco Anyconnect – Network Visibility Module; Endpoint Concentrator

Flow Detailed Summary: 10.100.104.2

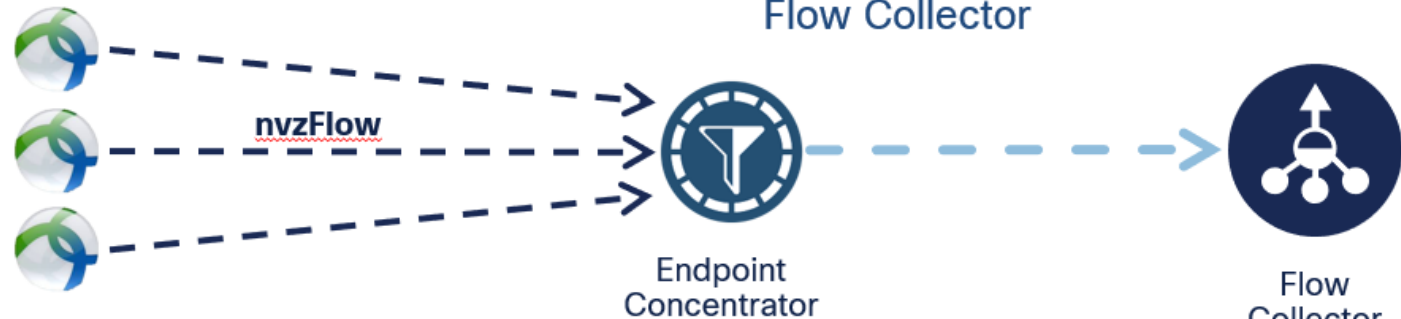
Search Subject Details	Totals	Peer Details
Packets: 1.25K Packet Rate: 416pps Bytes: 1.74MB Byte Rate: 607.51Kbps Percent Transfer: 100% Host Groups: Catch All TrustSec Name: Group 1 TrustSec SGT: 27	Packets: 1.25K Packet Rate: 416pps Bytes: 1.74MB Byte Rate: 607.51Kbps Search Subject/Peer Ratio: all search subject RTT: 0s SRT: 0s	Packets: 0 Packet Rate: 0pps Bytes: 0B Byte Rate: 0bps Percent Transfer: 0% Host Groups: Catch All TrustSec Name: Group 2 TrustSec SGT: 52

Process name: malware.exe
File SHA Hash: 6ca13d52ca70c883e0f0bb101e425a89e8624de51db2d2392593af6a84118090

Attributing a flow to:

- Process name
- Process hash
- Process account
- Parent process name
- Parent process hash
- Parent process account

AnyConnect with
Network Visibility Module



- Global destination for nvzFlow records
- Forward flow records to the Flow Collector

- Appears as a single exporter in the Flow Collector
- Required in order to collect endpoint flow records
- Endpoint fields are stitched into flow records

Endpoint Visibility

- Detail toku

Flow Detailed Summary: 10.100.104.2

Search Subject Details

Packets: 1.25K
Packet Rate: 416pps
Bytes: 1.74MB
Byte Rate: 607.51Kbps
Percent Transfer: 100%
Host Groups: Catch All
TrustSec Name: Group 1
TrustSec SGT: 27

Totals

Packets: 1.25K
Packet Rate: 416pps
Bytes: 1.74MB
Byte Rate: 607.51Kbps
Search Subject/Peer Ratio: all search subject
RTT: 0s
SRT: 0s

Peer Details

Packets: 0
Packet Rate: 0pps
Bytes: 0B
Byte Rate: 0bps
Percent Transfer: 0%
Host Groups: Catch All
TrustSec Name: Group 2
TrustSec SGT: 52

Process name: malware.exe

File SHA Hash: 6ca13d52ca70c883e0f0bb101e425a89e8624de51db2d2392593af6a84118090

Endpoint Visibility

- Detail toku #2

Nov 15, 2018 10:...
(46min 41s ago)

40min 47s

10.67.58.41 

50398/TCP

DD032

27.36 K

firefox.exe

explorer.exe

HTTP

77.04 K

19

General

[View URL Data](#)

Subject

Packets: 111
Packet Rate: 1.04 pps
Bytes: 27.36 KB
Byte Rate: 261.87 bps
Percent Transfer: 35.52%
Host Groups: DD032
Payload: GET http://www.shmu.sk/img/website/banner6/sk/img4.jpg

Totals

Packets: 218
Packet Rate: 2.04 pps
Bytes: 77.04 KB
Byte Rate: 737.28 bps
Subject Byte Ratio: 35.52%
RTT: 0seconds
SRT: 0seconds

Peer

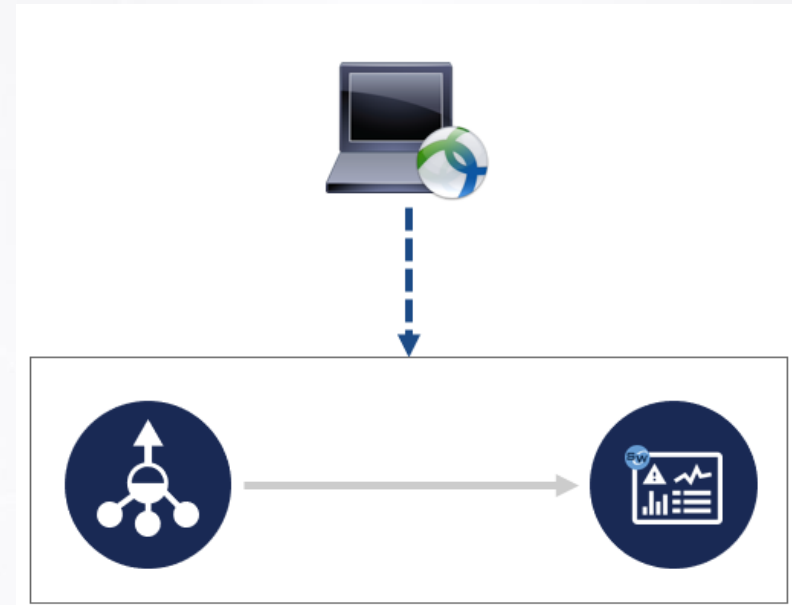
Packets: 107
Packet Rate: 1 pps
Bytes: 49.68 KB
Byte Rate: 475.41 bps
Percent Transfer: 64.48%
Host Groups: Slovakia
Payload: 304 304 Not Modified

Endpoint Visibility

- Odlišnosti nvzFlow

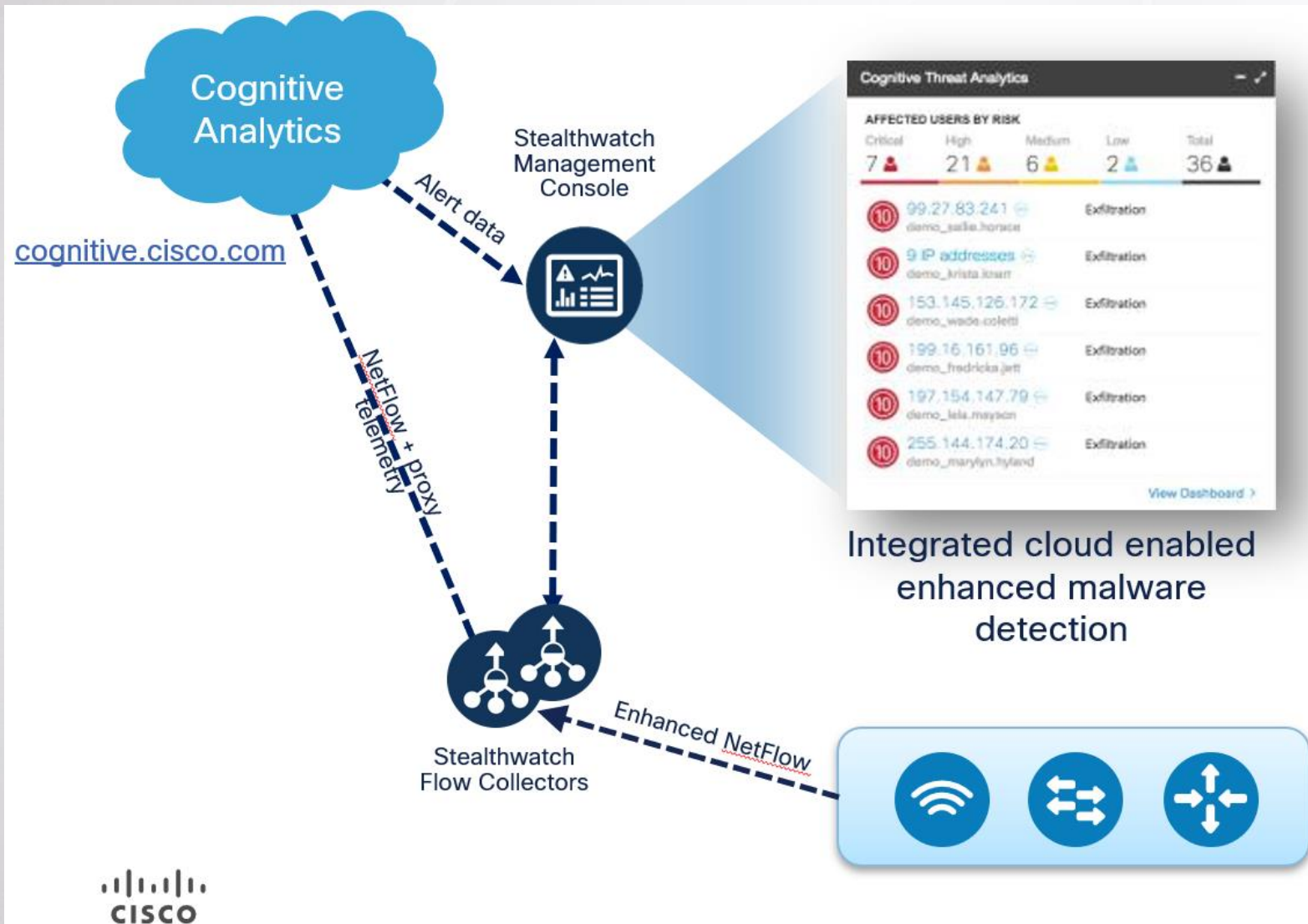
nvzFlow differs from traditional IPFIX:

- Records are bi-directional
- Records produced only at end of flow
- Records created when client only
- No packet counts
- Byte counts are Layer 4 counts
- IP Address represents local network



Cognitive Analytics

- Výhoda - cloud inteligencia nad našimi dátami



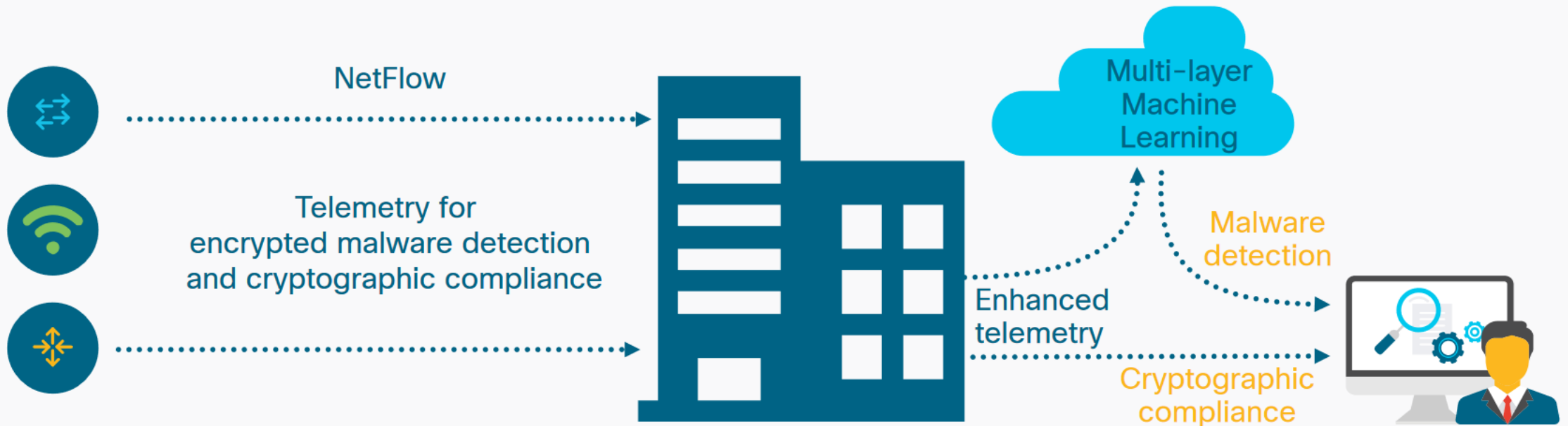
- Global <=> local correlation
Higher precision of threat findings
- Machine learning analytics
Reduces threat investigation time
- Encrypted Traffic Analytics
Enhanced NetFlow from Cisco's newest switches and routers

Encrypted Traffic Analytics

- Vyhodnocovanie správania SSL „obálky“ + crypto compliance (TLS verzie, šifry)

New Cisco Routers and Switches

Cisco Stealthwatch Enterprise



Leveraged network

Enhanced telemetry from Cisco's newest switches and routers

Faster investigation

Advanced analytics and machine learning

Higher precision

Global-to-local knowledge correlation

Stronger protection

Continuous Enterprise-wide compliance

Encrypted Traffic Analytics

Stealthwatch Cisco | Dashboards | Monitor | Analyze | Jobs | Configure | Deploy | Desktop Client

Flow Search Results (8,196) | Save Search | Save Results | Start New Search | 100% Complete | Delete Search

Time Range: Last 2 Days | Orientation: Either

START	DURATION	CONNECTION APPLICATION	CONNECTION BYTES	ENCRYPTION TLS/SSL VERSION	ENCRYPTION KEY EXCHANGE	ENCRYPTION ALGORITHM AND KEY LENGTH	ENCRYPTION AUTHENTICATION ALGORITHM	ENCRYPTION MAC	PEER IP ADDRESS	PEER PORT/PROTOCOL	PEER HOST GROUPS	PEER BYTES
Apr 20, 2017 12:05:48 PM	2m 11s	HTTPS (unclassified)	132.61K	TLS 1.2	RSA	RSA_128	RSA	AES_128_CBC	10.0.40.10	443/TCP	Catch All	92.54K
Apr 20, 2017 11:58:48 AM	6m 11s	HTTPS (unclassified)	309.67K	TLS 1.2	RSA	RSA_128	RSA	AES_128_CBC	10.0.40.10	443/TCP	Catch All	216.14K
Apr 20, 2017 11:48:48 AM	9m 11s	HTTPS (unclassified)	444.16K	TLS 1.2	RSA	RSA_128	RSA	AES_128_CBC	10.0.40.10	443/TCP	Catch All	309.55K

TIME SINCE START

- 3m 34.44s - 9h 38m 51.64s (16)
- 9h 38m 51.64s - 19h 14m 8.84s (43)
- 19h 14m 8.84s - 1d 4h 49m 26.04s (73)
- 1d 4h 49m 26.04s - 1d 14h 24m 43.24s (11)
- 1d 14h 24m 43.24s - 2d 0.44s (14)

ACTIVE DURATION

- 0s - 2h 23m 53.2s (153)
- 2h 23m 53.2s - 4h 47m 46.4s (0)
- 4h 47m 46.4s - 7h 11m 39.6s (0)
- 7h 11m 39.6s - 9h 35m 32.8s (0)
- 9h 35m 32.8s - 11h 59m 26s (4)

APPLICATIONS

- NTP (unclassified) (48)
- SSH/SCP (unclassified) (34)
- DNS (unclassified) (28)
- HTTPS (unclassified) (27)
- Undefined TCP (19)
- HTTP (unclassified) (1)

TLS 1.2 RSA RSA_128 RSA AES_128_CBC

Apr 20, 2017 10:46:48 AM	27m 11s	HTTPS (unclassified)	1.21M	TLS 1.2	RSA	RSA_128	RSA	AES_128_CBC	10.0.40.10	443/TCP	Catch All	861.54K
Apr 20, 2017 10:06:48 AM	39m 11s	HTTPS (unclassified)	1.73M	TLS 1.2	RSA	RSA_128	RSA	AES_128_CBC	10.0.40.10	443/TCP	Catch All	1.21M
Apr 20, 2017 9:10:48 AM	55m 11s	HTTPS (unclassified)	2.39M	TLS 1.2	RSA	RSA_128	RSA	AES_128_CBC	10.0.40.10	443/TCP	Catch All	1.67M
Apr 20, 2017 7:51:48 AM	1h 18m 11s	HTTPS (unclassified)	2.85M	TLS 1.2	RSA	RSA_128	RSA	AES_128_CBC	10.0.40.10	443/TCP	Catch All	1.98M
Apr 20, 2017 7:40:12 AM	10m 47s	HTTPS (unclassified)	503.88K	TLS 1.2	RSA	RSA_128	RSA	AES_128_CBC	10.0.40.10	443/TCP	Catch All	351.75K

ENCRYPTION TYPE

- NONE (143)
- TLS 1.1 (2)
- TLS 1.2 (12)

Cancel

Flow Search Results (295)

Save Search Save Results Start New Search

Edit Search Last 5 minutes (Time Range) 2,000 (Max Records)

100% Complete Delete Search

Subject: 10.67.58.140 Either (Orientation)

Connection: All (Flow Direction)

START	DURATION	SUBJECT IP A...	SUBJECT POR...	SUBJECT HOS...	SUBJECT BYTES	APPLICATION	TOTAL BYTES	ENCRYPTION ...	ENCRYPTION ...	ENCRYPTION ...	ENCRYPTION ...	ENCRYPTION ...
<i>Ex. 06/05</i>	<i>Ex. <=50min</i>	<i>Ex. 10.10.10</i>	<i>Ex. 57100/U</i>	<i>Ex. "catch A</i>	<i>Ex. <=50M</i>	<i>Ex. "Corpora</i>	<i>Ex. <=50M</i>	<i>Ex. 1.0</i>	<i>Ex. ECDH</i>	<i>Ex. ECDSA</i>	<i>Ex. AES_256</i>	<i>Ex. SHA384</i>
▶ Nov 15, 2018 12:00:00 (5min 46s ago)	4min 28s	10.67.58.140	49954/TCP	Catch All	46.8 K	HTTPS	13.29 M	TLS 1.2	ECDHE	RSA	AES_256_GCM/...	SHA384
▼ Nov 15, 2018 12:00:00 (6min 12s ago)	4min	10.67.58.140	49914/TCP	Catch All	234.52 K	business systems	1.43 M	TLS 1.2	ECDHE	RSA	AES_128_GCM/...	SHA256

General

[View URL Data](#)

Subject

Packets: 1.33 K
 Packet Rate: 7.71 pps
 Bytes: 234.52 KB
 Byte Rate: 1.4 Kbps
 Percent Transfer: 15.99%
 Host Groups: Catch All
 Payload:[V...+...#.b.

Totals

Packets: 2.73 K
 Packet Rate: 15.89 pps
 Bytes: 1.43 MB
 Byte Rate: 8.73 Kbps
 Subject Byte Ratio: 15.99%
 RTT: 4seconds
 SRT: 0seconds

Peer

Packets: 1.41 K
 Packet Rate: 8.18 pps
 Bytes: 1.2 MB
 Byte Rate: 7.33 Kbps
 Percent Transfer: 84.01%
 Host Groups: United States
 Payload: SSL_CN: www.bing.com

▶ Nov 15, 2018 12:00:00 (5min 5s ago)	3min 39s	10.67.58.140	50041/TCP	Catch All	6.47 K	news	763.21 K	TLS 1.2	ECDHE	RSA	AES_128_GCM/...	SHA256
▶ Nov 15, 2018 12:00:00	20s	10.67.58.140	50422/TCP	Catch All	824	business systems	574.10 K	TLS 1.2	ECDHE	RSA	AES_256_GCM/...	SHA384

Encrypted Traffic Analytics

- Type „E“

5

MALWARE MONEY SCAM ENCRYPTED

88% confidence

★ NEW / TRIAGE

AFFECTING

unknown username

192.168.15.171

OCCURRENCE

8 days

Apr 25 - May 3

Add notes...

ACTIVITIES AND FLOWS

SEVERITY FILTER: 9 8 7 6 5 4 3 2 1 Hide related

Activities (2 out of 35)

7 money scam

7 malicious host

Domains

gotquestions.org

starfieldtech.com

IPs

216.157.70.146

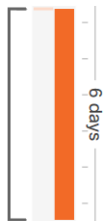
72.167.239.239

Autonomous systems

Peer 1 Network (USA) Inc.

GoDaddy.com, LLC

Time



UPLOAD 13.5 KiB DOWNLOAD 527.5 KiB REQUESTS 2 DURATION 6 days 12 minutes 13 seconds USER AGENTS 0 NO REFERRER 100% HTTP 0

Client IP, Server IP, URL, SHA	Filter																	
TYPE	TIMESTAMP	CLIENT IP	CLIENT FIR	CLIENT LAI	SERVER IP	SERV	NETW	URL	DURATI	PASSIVE DNS HOSTNAME	CLIENT	CLIENT TO	SERVE	SERVE	ANOI			
E	Apr 26, 2018 13:31:46 GMT+02:00	192.168.15.171	65282	65412	216.157.70.146	443	TCP	https://www.gotquestions.org	13 s	gotquestions.org (Probability 95%	6750	88	268601	180				
E	May 2, 2018 13:43:37 GMT+02:00	192.168.15.171	62328	62373	216.157.70.146	443	TCP	https://www.gotquestions.org	22 s	gotquestions.org (Probability 98%	7095	96	271527	175				



PLÁN
B