The TIP of the Stinger: Efficiently Using Threat Intelligence With TheHive

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whoami



What am I talking about today?

What is Threat Intelligence?

"Threat intelligence is evidence-based knowledge, including context, mechanisms, indicators, implications and actionable advice, about an existing or emerging menace or hazard to assets that can be used to inform decisions regarding the subject's response to that menace or hazard." --Gartner *

^{*} https://www.gartner.com/doc/2487216/definition-threat-intelligence

Definition: Threat Intelligence











ARCHIVED Published: 16 May 2013 ID: G00249251

Analyst(s): Rob McMillan

Summary

Threat intelligence is evidence-based knowledge, including context, mechanisms, indicators, implications and actionable advice, about an existing or emerging menace or hazard to assets that can be used to inform decisions regarding the subject's response to that menace or hazard.

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What Threat Intelligence Is Not

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Recommended Reading

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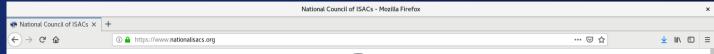
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information to asset owners and operators.

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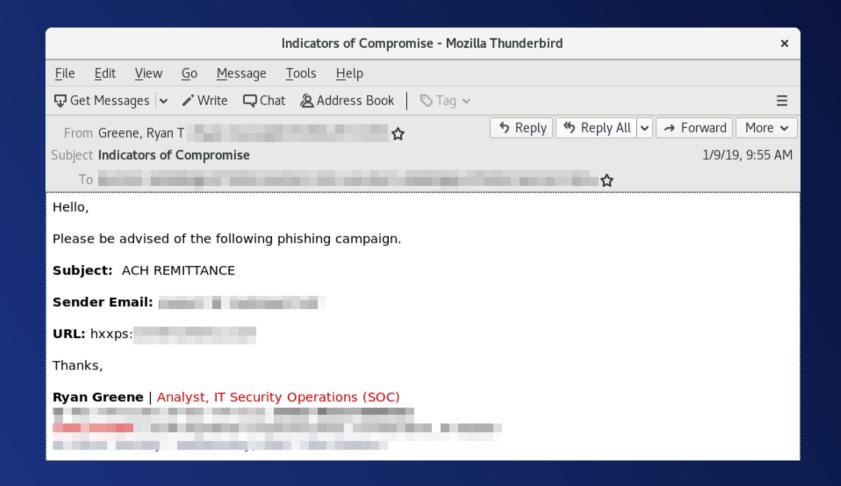
Not-So-Bold Predictions: ISACs Continue Close Collaboration in 2019...

Scott Algeier interviews NCI Chair Denise Anderson for Episode 1 of IT-ISAC's new podcast.

READ MORE

Sector-based Information Sharing and Analysis Centers collaborate with each other via the National Council of ISACs. Formed in 2003, the NCI today comprises 24 organizations. It is a coordinating body designed to maximize information flow across the private sector critical infrastructures and with government. Critical infrastructures sectors and subsectors that do not have ISACs are invited to contact the NCI to learn how they can participate in NCI activities.

Information Sharing and Analysis Centers help critical infrastructure owners and operators protect their facilities, personnel and customers from cyber and physical security threats and other hazards. ISACs collect, analyze and disseminate actionable threat information to their members and provide members with tools to mitigate risks and enhance resiliency. ISACs reach deep into their sectors, communicating critical information far and wide and maintaining sector-wide situational awareness.







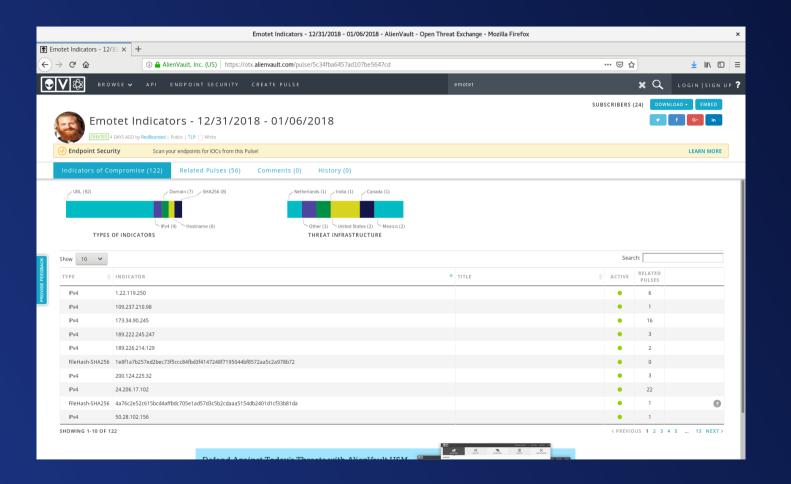


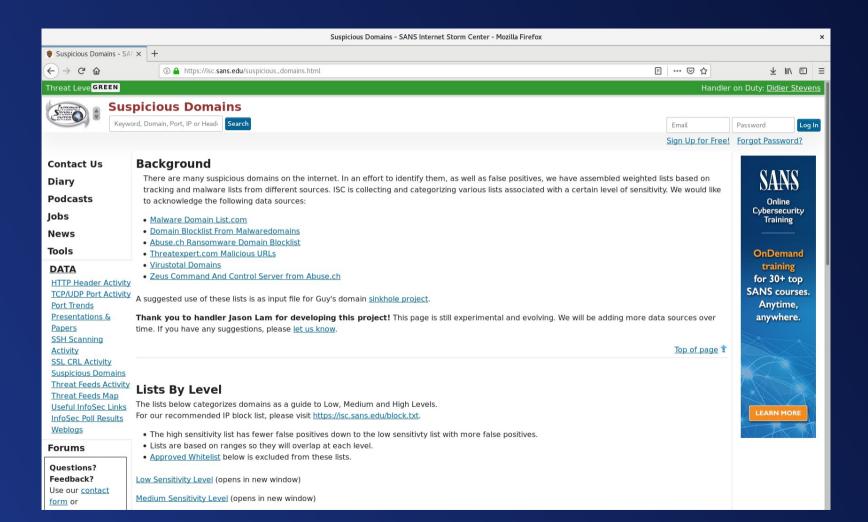
👢 WARNING 🔔

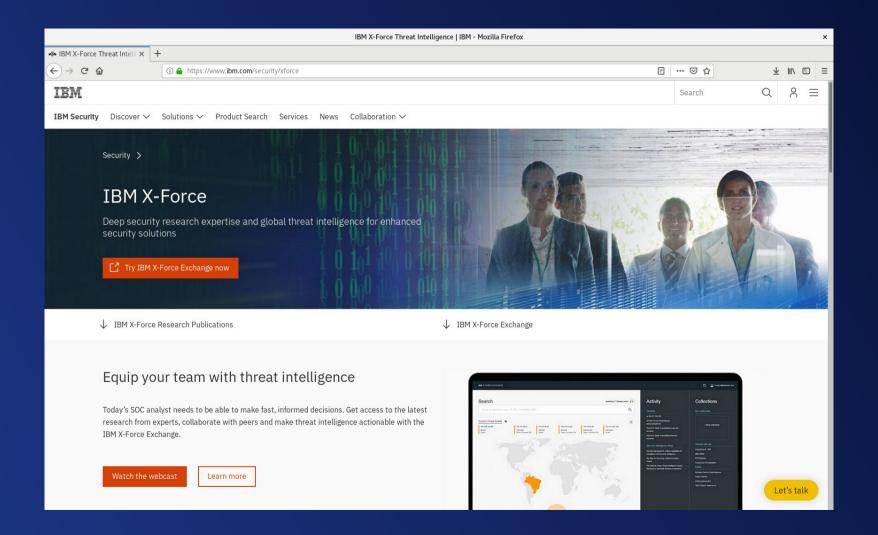
Incoming scans detected from multiple hosts looking for exposed Home Network Administration Protocol (HNAP) endpoints.

Multiple D-Link DIR series routers suffer from insecure implementations of HNAP that allow unauthenticated users to modify the device's settings.

| Source IP | ASN | Autonomous System | Country | Method | URI | Date Last Seen |
|-----------------|----------|---|---------------|--------|---------|--------------------------|
| 185.53.88.44 | AS133229 | Host Palace Internet Services | Netherlands | GET | /HNAP1/ | 2019-01-06T14:24:18-0800 |
| 212.83.169.139 | AS12876 | Online S.a.s. | France | GET | /HNAP1/ | 2019-01-06T13:26:27-0800 |
| 178.34.162.253 | AS12389 | Rostelecom | Russia | GET | /HNAP1/ | 2019-01-06T13:20:55-0800 |
| 62.4.15.51 | AS12876 | Online S.a.s. | France | GET | /HNAP1/ | 2019-01-06T04:59:04-0800 |
| 108.33.213.8 | AS5650 | Frontier Communications of America Inc. | United States | GET | /HNAP1/ | 2019-01-05T06:24:04-0800 |
| 194.242.103.166 | AS31685 | TOV Teleradiocompany TIM | Ukraine | GET | /HNAP1/ | 2019-01-05T02:54:31-0800 |
| 37.150.169.106 | AS9198 | JSC Kazakhtelecom | Kazakhstan | GET | /HNAP1/ | 2019-01-05T00:05:52-0800 |
| 2.95.62.204 | AS3216 | PVimpelCom | Russia | GET | /HNAP1/ | 2019-01-04T20:18:10-0800 |
| 41.77.103.216 | AS37515 | ICONNECT | South Africa | GET | /HNAP1/ | 2019-01-04T06:01:56-0800 |
| 182.18.177.27 | AS18229 | CtrlS Datacenters Ltd. | India | GET | /HNAP1/ | 2019-01-03T20:56:48-0800 |
| 178.150.105.217 | AS13188 | Content Delivery Network Ltd | Ukraine | GET | /HNAP1/ | 2019-01-02T08:00:04-0800 |
| 46.166.151.84 | AS43350 | NForce Entertainment B.V. | Netherlands | GET | /HNAP1/ | 2018-12-31T13:37:56-0800 |







So How Do We Use It?



MISP

- MISP is an open source Threat Intel Platform
- Collects, sanitizes, and distributes IOCs
- Supports tagging, TLP, galaxies, taxonomies, and much more
- Robust import and export capabilities
- This is an excellent "system of record"

Getting Data Into MISP

- Manual entry in web console
- Import local MISP JSON or CSV files
- Share data with other MISP instances
- Import .IOC files, Threatconnect, PDF, etc.
- Many third party extensions and add-ons

How Does MISP Structure Data?

- Events
- Attributes
- Tags
- Threat and Analysis Level
- Distribution



Security Onion

- Project by Doug Burks (@dougburks)
- Prebuilt Dockerized stack of open source NSM tools
- Available as an appliance ISO
- Can be installed on top of vanilla Ubuntu and RHEL/CentOS
- Commercial support and training available
- Can be used live or for pcap processing
- Requires a network tap or SPAN port for live usage



Suricata

- Security Onion comes with either Snort or Suricata
- These compare network traffic to defined signatures and raise alerts when a match is found
- By default, free Emerging Threats rules available
- Easily leveraged with threat intelligence



Zeek / Bro

- This generates network connection metadata from the observed traffic
- Think of it as Netflow++ all the connection information of Netflow with some actual layer 7 data as well
- The Bro_Intel framework can be used to check metadata for IOCs



Elastic Stack

- Security Onion uses the Elastic Stack for its main reporting interface
- Data is stored in an Elasticsearch backend
- Queries and visualization is done in Kibana
- Elastalert is also integrated



TheHive

- TheHive is an open source SOAR platform
- Allows real-time IR collaboration
- Dashboards and reporting
- Integrates with MISP for threat intel functions
- Alerts, Cases, and Case Templates
- New observables can export back to MISP

Hunting IOCs

New Threat Intel Imported Into MISP

Rules Generated For IDS IDS Alert Fires Alert Raised In TheHive

Alert Imported As Case

Incident Response Process

New Threat Intel

MISP

MISP API

Suricata

Bro/Zeek

Elastic Stack

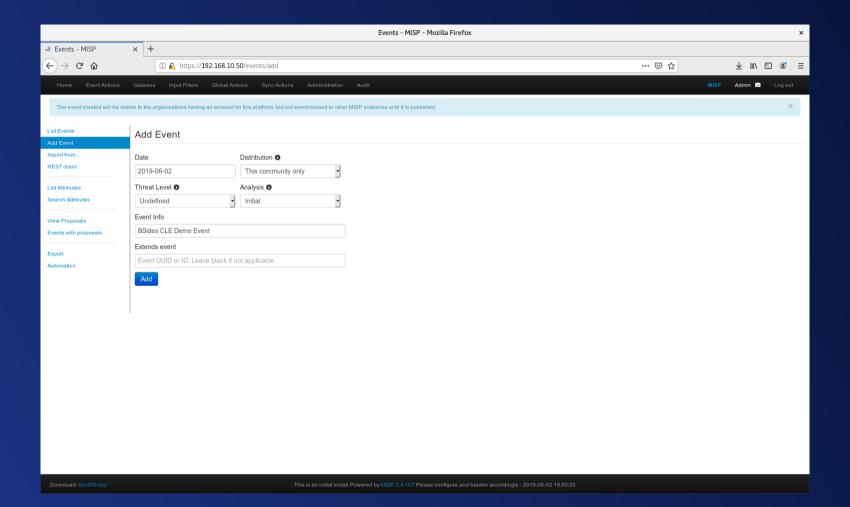
Elastalert

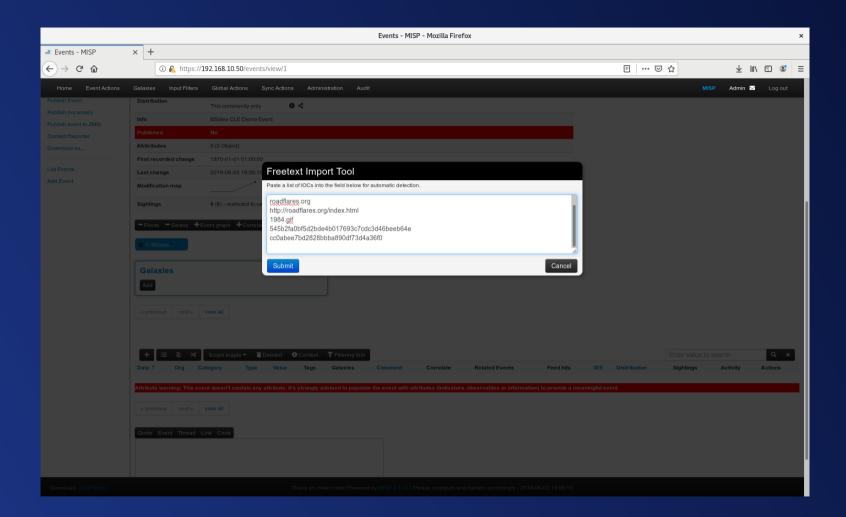
TheHive

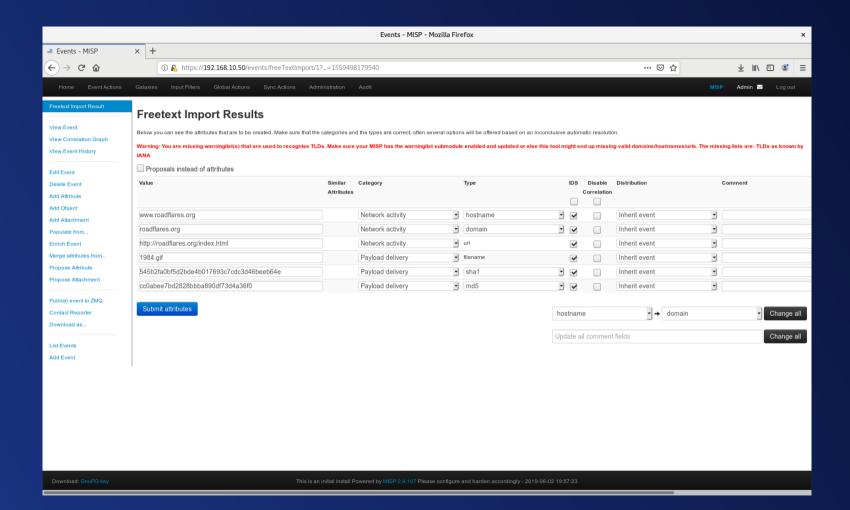
Demonstration

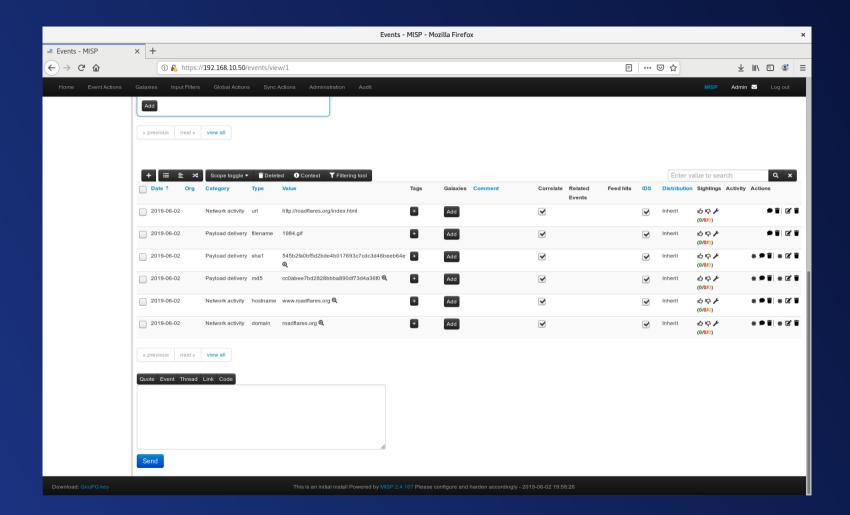
| | А | В |
|---|----------------|--|
| 1 | indicator type | indicator |
| 2 | domain | www.roadflares.org |
| 3 | domain | roadflares.org |
| 4 | URL | http://roadflares.org/index.html |
| 5 | filename | 1984.gif |
| 6 | filehash | 545b2fa0bf5d2bde4b017693c7cdc3d46beeb64e |
| 7 | filehash | cc0abee7bd2828bbba890df73d4a36f0 |

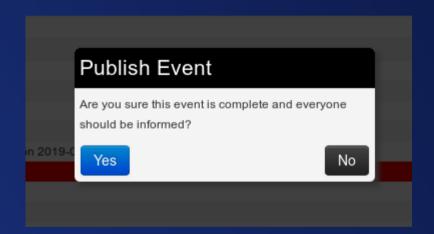
^{*} Please note, this is just an example using my personal domain, not anything actually malicious.

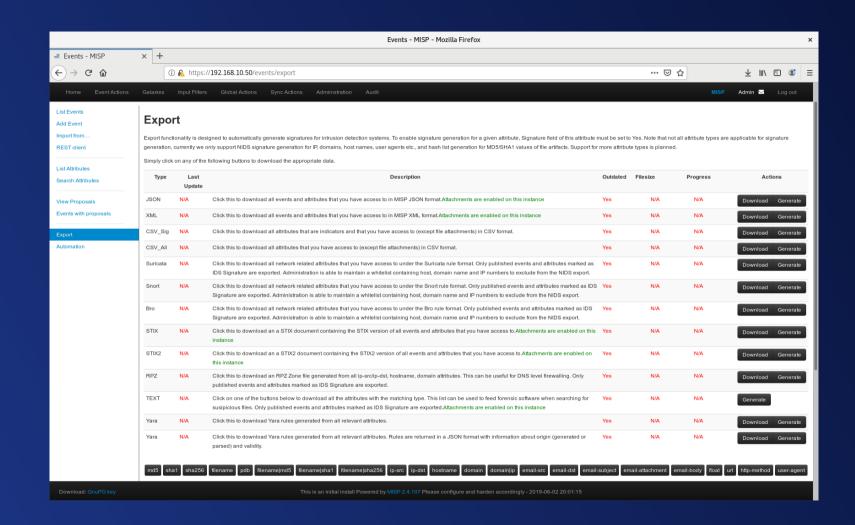








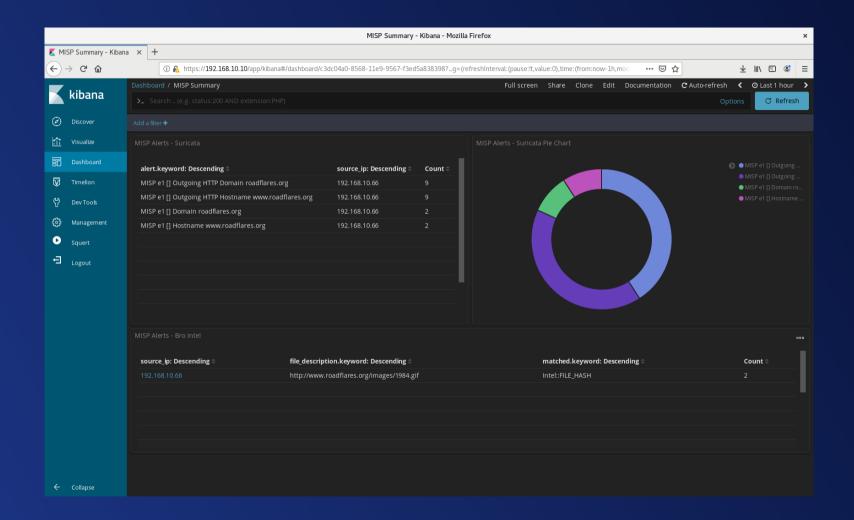


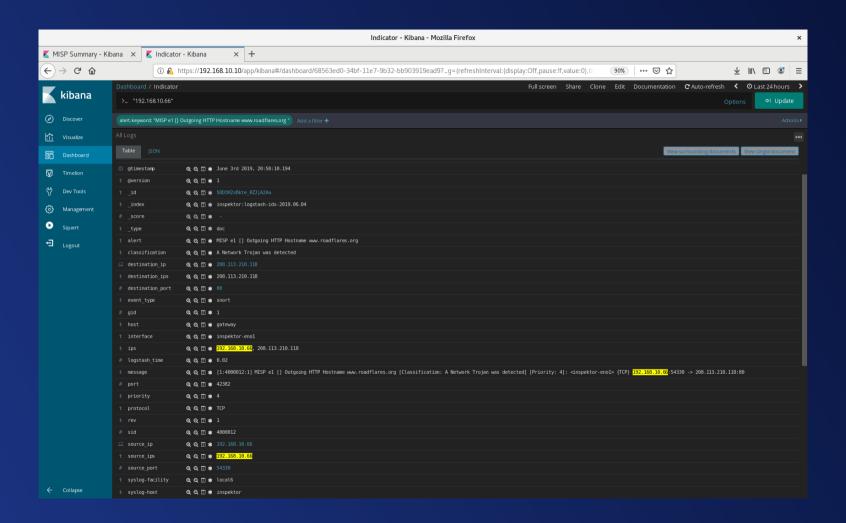


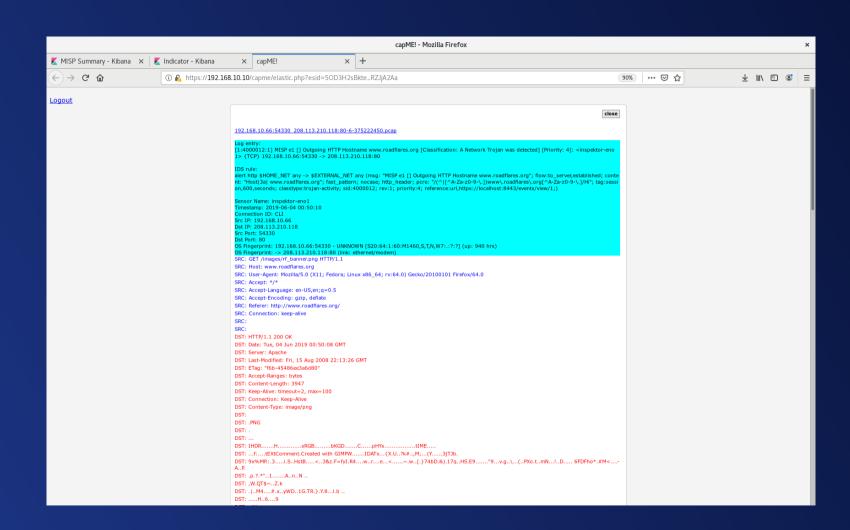
misp.suricata.ADMIN.rules Open -Save × ~/Downloads # MISP export of IDS rules - optimized for # These NIDS rules contain some variables that need to exist in vour configuration. # Make sure vou have set: # \$HOME NET - Your internal network range # \$EXTERNAL NET - The network considered as outside # \$SMTP SERVERS - All your internal SMTP servers # \$HTTP PORTS - The ports used to contain HTTP traffic (not required with suricata export) alert dns any any -> any any (msg: "MISP el [] Hostname www.roadflares.org"; dns query; content:"www.roadflares.org"; nocase; pcre: "/(^|[^A-Za-z0-9-\.])www\.roadflares\.org\$/i"; classtype:trojan-activity: sid:4000011: rev:1: priority:4: reference:url.https://localhost:8443/ events/view/1:) alert http \$HOME NET any -> \$EXTERNAL NET any (msg: "MISP e1 [] Outgoing HTTP Hostname www.roadflares.org": flow:to server.established: content: "Host|3a| www.roadflares.org": fast pattern; nocase; http header; pcre: "/(^|[^A-Za-z0-9-\.])www\.roadflares\.org[^A-Za-z0-9-\.]/ Hi"; tag:session,600,seconds; classtype:trojan-activity; sid:4000012; rev:1; priority:4; reference:url.https://localhost:8443/events/view/1:) alert dns any any -> any any (msq: "MISP el [] Domain roadflares.org"; dns query; content:"roadflares.org"; nocase; pcre: "/(^|[^A-Za-z0-9-])roadflares\.org\$/i"; classtype:trojanactivity; sid:4000021; rev:1; priority:4; reference:url,https://localhost:8443/events/view/1;) alert http \$HOME NET any -> \$EXTERNAL NET any (msg: "MISP e1 [] Outgoing HTTP Domain roadflares.org": flow:to server.established: content: "Host|3a|": nocase: http header: content:"roadflares.org"; fast pattern; nocase; http header; pcre: "/(^|[^A-Zaz0-9-l)roadflares\.org[^A-Za-z0-9-\.l/Hi": tag:session.600.seconds: classtype:trojan-activity: sid: 4000022; rev:1; priority:4; reference:url,https://localhost:8443/events/view/1;) alert http \$HOME NET any -> \$EXTERNAL NET \$HTTP PORTS (msg: "MISP e1 [] Outgoing URL http|3a|// roadflares.org/index.html"; flow:to server.established; content:"roadflares.org"; fast pattern; nocase; http header; content:"/index.html"; nocase; http uri; tag:session,600,seconds; classtype:trojan-activity: sid:4000031: rev:1: priority:4: reference:url.https://localhost:8443/ events/view/1;)

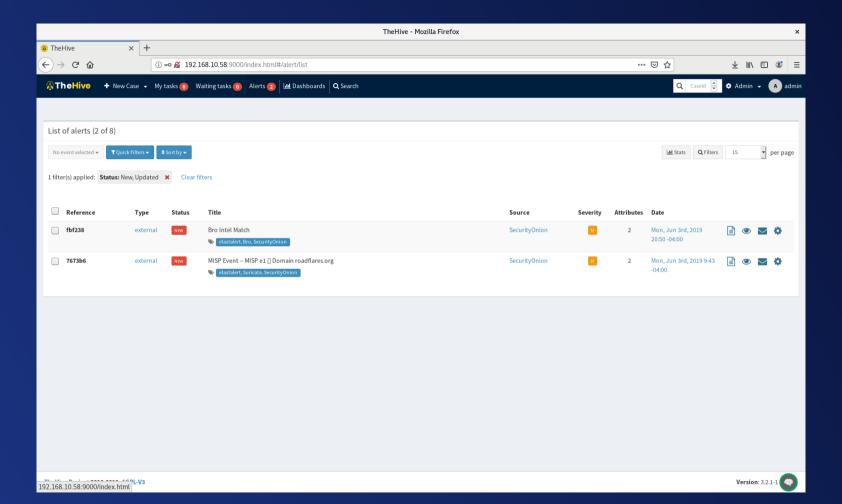
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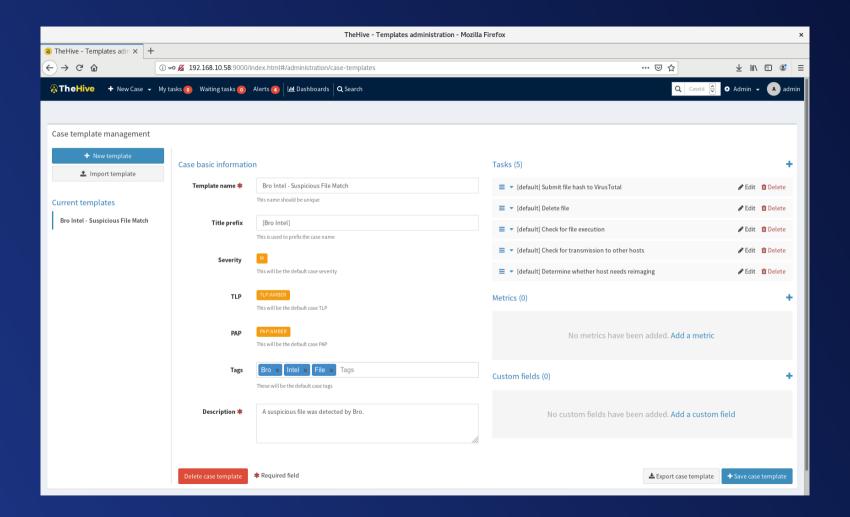
misp.bro.ADMIN.intel \equiv Open 🕶 Save × ~/Downloads #fields indicator indicator type meta.source meta.desc meta.url meta.do notice meta.if in #fields indicator indicator type meta.source meta.desc meta.url meta.do notice meta.if in roadflares.org/index.html Intel::URL ORGNAME MISP (5cf40dc2-2404-45f4-a888-0404c0a80a32) - ORGNAME BSides CLE Demo Event. https://localhost:8443/events/view/1 #fields indicator meta.do notice meta.if in indicator type meta.source meta.desc meta.url roadflares.org Intel::DOMAIN ORGNAME MISP (5cf40dc2-2404-45f4-a888-0404c0a80a32) - ORGNAME BSides CLE Demo Event. https:// localhost:8443/events/view/1 www.roadflares.org Intel::DOMAIN ORGNAME MISP (5cf40dc2-2404-45f4-a888-0404c0a80a32) - ORGNAME BSides CLE Demo Event. https://localhost:8443/events/view/1 #fields indicator indicator type meta.source meta.desc meta.url meta.do notice meta.if in #fields indicator indicator type meta.source meta.desc meta.url meta.do notice meta.if in Intel::FILE NAME 1984.qif ORGNAME MISP (5cf40dc2-2404-45f4-a888-0404c0a80a32) - ORGNAME BSides CLE Demo Event. https://localhost:8443/events/view/1 Т #fields indicator meta.do notice meta.if in indicator type meta.source meta.desc meta.url 545b2fa0bf5d2bde4b017693c7cdc3d46beeb64e Intel::FILE HASH ORGNAME MISP (5cf40dc2-2404-45f4-a888-0404c0a80a32) -ORGNAME BSides CLE Demo Event. https://localhost:8443/events/view/1 cc0abee7bd2828bbba890df73d4a36f0 Intel::FILE HASH ORGNAME MISP (5cf40dc2-2404-45f4-a888-0404c0a80a32) - ORGNAME BSides CLE Demo Event. https://localhost:8443/events/view/l #fields indicator indicator type meta.source meta.do notice meta.if in meta.desc meta.url #fields indicator indicator type meta.source meta.do notice meta.if in meta.desc meta.url

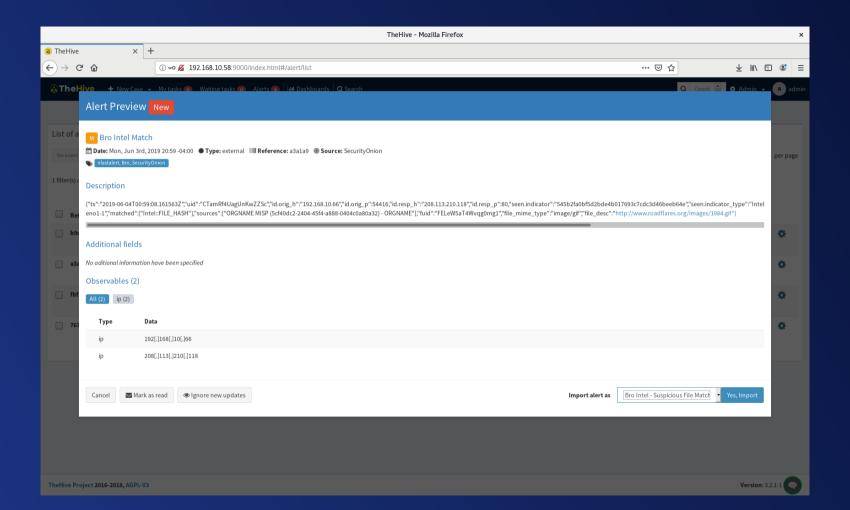


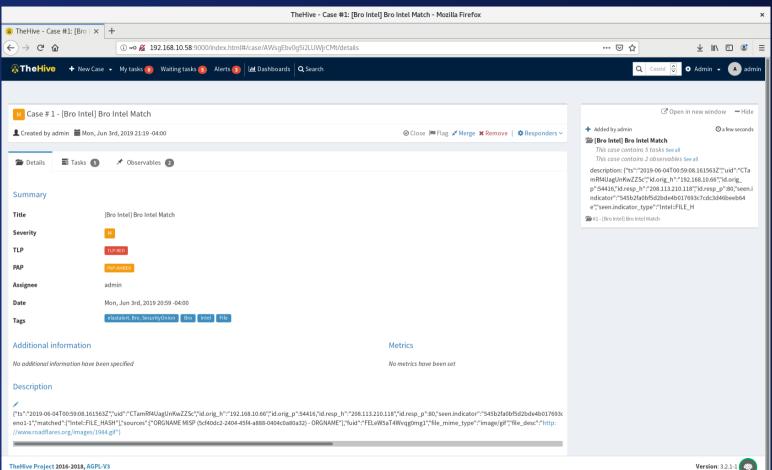


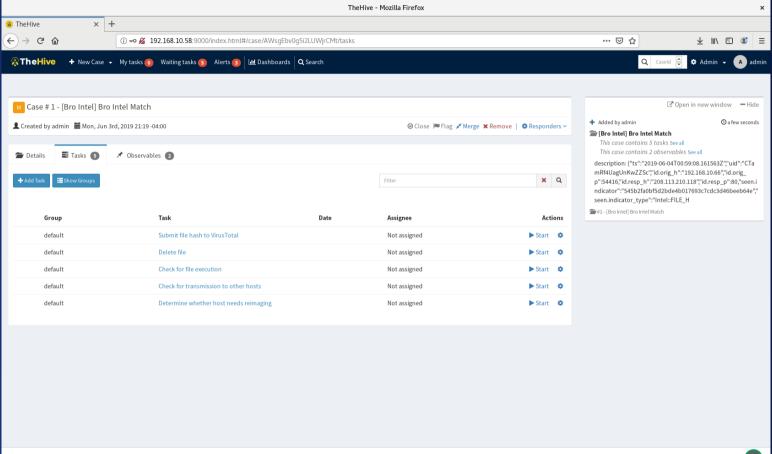




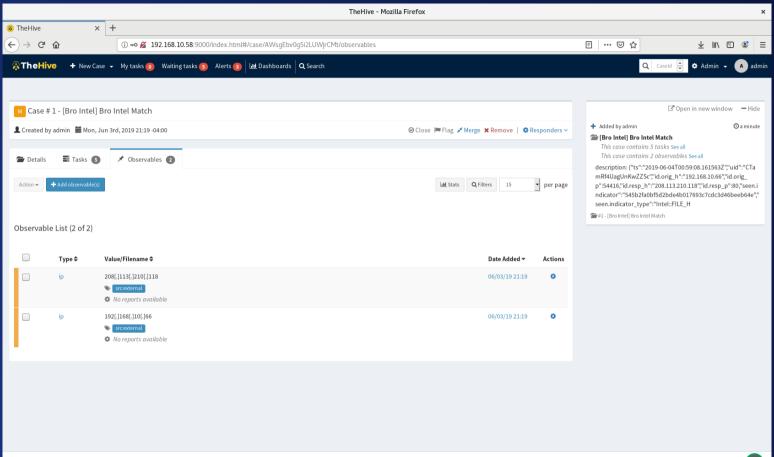








TheHive Project 2016-2018, AGPL-V3



TheHive Project 2016-2018, AGPL-V3

How Can I Play With This?

- TheHive VM: https://github.com/TheHive-Project/TheHiveDocs/blob/master/training-material.md
- MISP VM: https://www.circl.lu/services/misp-training-materials/
- MISP / TheHive / Cortex VM: https://www.circl.lu/misp-training-images/
- Security Onion is freely downloadable: https://securityonion.net/

Questions?

For More Information

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- infosecgoon@roadflares.org

https://github.com/InfosecGoon/stinger/