Scirius Documentation

Release 3.5.0

Stamus Networks

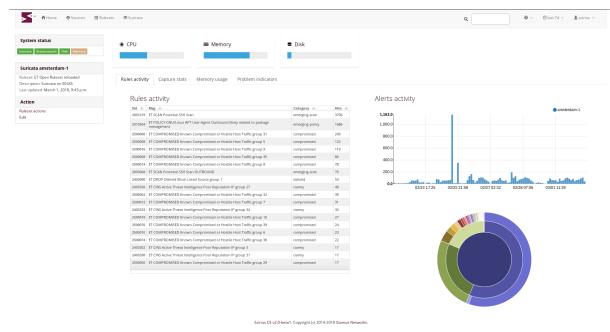
Mar 15, 2021

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Introduction

Scirius Community Edition is a web interface dedicated to Suricata ruleset management. It handles the rules file and update associated files.



Scirius CE is developed by Stamus Networks and is available under the GNU GPLv3 license.

Installation and setup

2.1 Installing Scirius CE

Scirius CE is an application written in Django. It requires at least Django 1.11 and has not yet support for Django 2.0.

Scirius CE also uses webpack to build CSS and JS bundles.

2.1.1 Dependencies

The easy way to install the dependencies is to use pip:

On Debian, you can run

aptitude install python-pip python-dev

You can then install django and the dependencies

pip install -r requirements.txt

To use the suri_reloader script which is handling suricata restart, you will also need pyinotify

pip install pyinotify

It has been reported that on some Debian system forcing a recent GitPython is required

pip install gitpython==0.3.1-beta2

You will also potentially needs the gitdb module

pip install gitdb

For npm and webpack, you need a stable version of npm and webpack version 3.11. On Debian you can do

```
sudo apt-get install npm
sudo npm install -g npm@latest webpack@3.11
npm install
cd hunt
```

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npm install npm run build

2.1.2 Running Scirius CE

From inside the source directory, you can initiate Django database

python manage.py migrate

Authentication is by default in scirius so you will need to create a superuser account

python manage.py createsuperuser

Before starting the application you need to construct the bundles by running webpack and collect static files:

```
webpack
python manage.py collectstatic
```

This step as to be done after each code update.

One of the easiest way to try Scirius CE is to run the Django test server

python manage.py runserver

You can then connect to localhost:8000.

If you need the application to listen to a reachable address, you can run something like

python manage.py runserver 192.168.1.1:8000

2.2 Suricata setup

Scirius CE is generating one single rules files with all activated rules. When editing the Suricata object, you have to setup the directory where you want this file to be generated and the associated files of the ruleset to be copied.

Scirius CE won't touch your Suricata configuration file aka suricata.yaml. So you have to update it to point to the directory where data are setup by Scirius CE. If you are only using rules generated by Scirius CE, you should have something looking like in your suricata.yaml file

```
default-rule-path: /path/to/rules
rule-files:
    - scirius.rules
```

To use the Use IP reputation instead of group feature you also need to have

```
reputation-categories-file: /path/to/rules/scirius-categories.txt
default-reputation-path: /path/to/rules
reputation-files:
    - scirius-iprep.list
```

To interact with Scirius CE, you need to detect when /path/to/rules/scirius.reload file are created, initiate a reload or restart of Suricata when it is the case and delete the reload file once this is done.

One possible way to do that is to use suri_reloader available in suricata/scripts directory. The syntax of suri_reloader can be something similar to

suri_reloader -p /path/to/rules -l /var/log/suri-reload.log -D

Use -h option to get the complete list of options. Please note that suri_reloaded uses the service command to restart or reload Suricata. This means you need a init script to get it working.

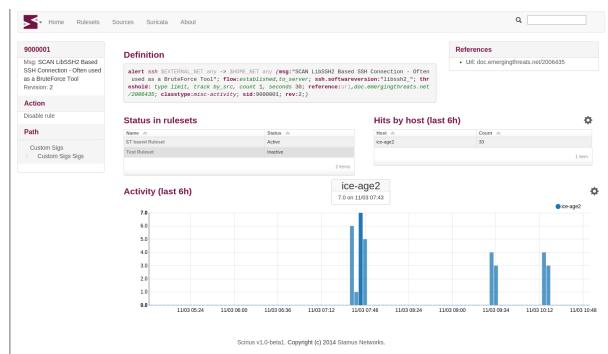
2.3 Link with Elasticsearch

If you are using Suricata with Eve logging and Elasticsearch, you can get information about signatures displayed in the page showing information about Suricata:

Home Ru	Home Rulesets Sources Suricata About					
Suricata ice- age2	F	Rules	activity (last 6h)		¢	
Ruleset: ET based	4	Sid 🛆	Msg 🛆	Category 🛆	Hits 🛆	
Ruleset Description: Test	9	9000001	SCAN LibSSH2 Based SSH Connection - Often used as a BruteForce Tool	Custom Sigs Sigs	33	
Suricata	4	2500004	ET COMPROMISED Known Compromised or Hostile Host Traffic group 3	compromised	5	
Last updated: Oct. 26, 2014, 10:29 a.m.	9	9000000	SCAN LibSSH Based SSH Connection - Often used as a BruteForce Tool	Custom Sigs Sigs	3	
Action	4	2500002	ET COMPROMISED Known Compromised or Hostile Host Traffic group 2	compromised	2	
Update Edit	4	2403302	ET CINS Active Threat Intelligence Poor Reputation IP group 3	ciarmy	2	
Luit	:	2500028	ET COMPROMISED Known Compromised or Hostile Host Traffic group 15	compromised	1	
	4	2500008	ET COMPROMISED Known Compromised or Hostile Host Traffic group 5	compromised	1	
	2	2402000	ET DROP Dshield Block Listed Source group 1	dshield	1	
					8 items	

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You can also get graph and details about a specific rule:



To setup Elasticsearch connection, you can edit settings.py or create a local_settings.py file under scirius directory to setup the feature. Elasticsearch is activated if a variable names USE_ELASTICSEARCH is set to True in settings.py. The address of the Elasticsearch is stored in the ELASTICSEARCH_ADDRESS variable and uses the format IP:port.

For example, if your Elasticsearch is running locally, you can add to local_settings.py

USE_ELASTICSEARCH = **True** ELASTICSEARCH_ADDRESS = "127.0.0.1:9200"

Please note, that the name of the Suricata (set during edition of the object) must be equal to the host key present in Elasticsearch events. It can also be edited here: scirius -> suricata -> edit.

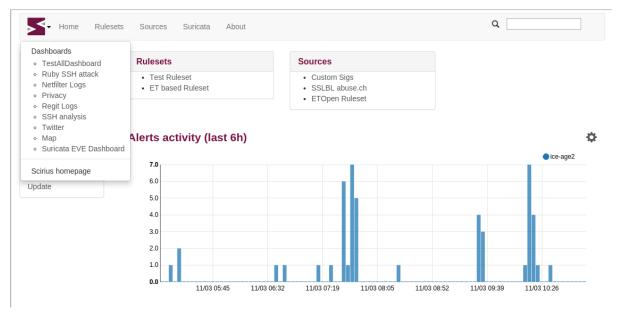
On logstash side, the only necessary thing is to make sure that the @timestamp is equal to the timestamp value provided in Suricata events. To do so and if you Suricata events are of type *SELKS* on can use

```
filter {
    if [type] == "SELKS" {
        date {
            match => [ "timestamp", "ISO8601" ]
        }
    }
}
```

This is necessary to avoid glitch in the graphics generated by Scirius CE.

2.4 Link with Kibana

If you are using Kibana, it is possible to get links to your dashboards by clicking the top left icon:



To activate the feature, you need to edit your *local_settings.py* file:

```
KIBANA_URL = "http://localhost/"
USE_KIBANA = True
```

Manage Accounts

This menu option allows for users management - edit/create and delete different user accounts, change user details and/or password. From this menu you can also view a list of the currently available users and the settings which these accounts possess.

3.1 Add/Create User

In order to Add/Create a New User: in the upper left corner click on Stamus Networks logo drop down icon -> Manage Accounts.

On the User Management page, in the Action panel -> click on Add.

3.2 Edit User

In order to edit an existing user: in the upper left corner click on Stamus Networks logo drop down icon -> Manage Accounts.

On the User Management Page, in the Users list -> click on the Username of the user you wish to edit.

In the Actions panel -> click on Edit user.

3.3 Change User Password

In order to change user password: in the upper left corner click on Stamus Networks logo drop down icon -> Manage Accounts.

On the User Management Page, in the Users list -> click on the Username of the user whose password you wish to change.

In the Actions panel -> click on Change user password.

3.4 Delete User

In order to delete a user: in the upper left corner click on Stamus Networks logo drop down icon -> Manage Accounts.

On the User Management Page, in the Users list -> click on the Username of the user you wish to delete.

In the Actions panel -> click on Delete user.

3.5 User Permissions:

There are three levels of permissions:

- Active User is allowed to connect to Scirius but has only read permission
- Staff User can act in Scirius (appliances edition, ruleset push, ...)
- Superuser has Full Unrestricted Access including editing user authentication settings and user creation in the local database.

In order to handle permission levels: in the upper left corner click on Stamus Networks logo drop down icon -> Manage Accounts.

On the User Management Page, in the Users list -> click on the Username of the user whose permission levels you wish to change.

In the Actions panel -> click on Edit user and set permission levels by enabling/disabling the Active, Staff User and Superuser checkboxes.

Rulesets

4.1 Philosophy of Ruleset handling

Scirius allows you to define a Ruleset which is a set of rules defining the behaviour of Stamus Networks Suricata probes regarding detection and inspection. You can have as many Rulesets as you would like and you can attach a particular Ruleset to many Appliances.

A Ruleset is made of components selected in different Sources. Transformation such as removing some rules, altering content can be applied to the signatures in the ruleset before it is pushed to the network probe(s).

A Source is a set of files providing information to Suricata. For example, this can be EmergingThreats ruleset downloaded from the official ET URL (or any other URL) or uploaded locally.

When a Source containing Signatures is splitted in multiple files, the set of Signatures in each individual file is called a Category.

4.2 User actions logging

All actions done in ruleset management are logged. It is possible to access their history by using Actions history in the Stamus icon menu.

Optional comment are available for each action to allow users to interact with each other.

4.3 Ruleset management

The ruleset management encompasses both the Rulesets and Sources major menu options.

To create a ruleset, you thus must create a set of Sources and then link them to the ruleset. Once this is done, you can select which elements of the source you want to use. For example, in the case of a signature ruleset, you can select which categories you want to use and which individual signature you want do disable.

Once a Ruleset is defined, you can attach it to a Probe. To do that simply edit the Probe object and choose the Ruleset in the list.

4.4 Creating Source

There is two methods to create a Source. First one is to use predefined public sources and the second one via manual addition.

4.4.1 Public sources

Go to Sources -> Add public source (Add being in the Actions menu in the sidebar).

Choose a source and click on the Add button. In the popup you can select to which ruleset you want to add the source. In some cases there will be some fields like the secret key provided by the rules editors to be entered.

4.4.2 Manual addition

To create a Source go to Sources \rightarrow Add custom source (Add being in the Actions menu in the sidebar). Then set the different fields and click Submit.

A source of datatype Signatures files in tar archive has to follow some rules:

- It must be a tar archive
- All files must be under a rules directory

For example, if you want to fetch ETOpen Ruleset for Suricata 4.0, you can use:

- Name: ETOpen Ruleset
- URI: https://rules.emergingthreats.net/open/suricata-4.0/emerging.rules.tar.gz

A source of datatype Individual signature files has to be a single file containing signatures.

For example, if you want to use SSL blacklist from abuse.ch, you can use:

- Name: SSLBL abuse.ch
- URI: https://sslbl.abuse.ch/blacklist/sslblacklist.rules

A source of datatype Other content has to be a single file. It will be copied to Suricata rules directory using its name as filename.

If method is HTTP URL, you will see an Optional authorization key field. This field is optional and can be used to authenticate Scirius against the remote server. It adds an authorization header to HTTP request allowing authentication on a large number of third party services. This can be used in particular to import signatures from a MISP instance. See MISP documentation for more information.

The usage of private Github repositories to host signatures is also supported through the usage of Optional authorization key, as explained in the Github documentation. Optional authorization key should be filled with token TOKEN, with the second TOKEN being the personal access token created under the user Github profile, Developer Settings page.

4.5 Updating Source

To update a Source, you first need to select it. To do that, go to Sources then select the wanted Source in the array.

You can then click on Update in the menu in the sidebar. This step can take long as it can require some download and heavy parsing.

Once updated, you can browse the result by following links in the array.

4.6 Creating Ruleset

To create a Ruleset go to Ruleset -> Add (Add being in the Actions menu in the sidebar). Then set the name of the Ruleset and choose which Sources to use and click Submit.

You can select the Sources to use and the transformations to apply. For more informations about them, see *Rule transformations*.

4.7 Updating Ruleset

To update a Ruleset, you first need to select it. To do that, go to Ruleset then select the wanted Ruleset in the array.

You can then click on Update in the Action menu in the sidebar. This step can take long as it can require download of different Sources and heavy parsing.

4.8 Editing Ruleset

To edit a Ruleset, you first need to select it. To do that, go to Ruleset then select the wanted Ruleset in the array.

You can then click on Edit in the Action menu in the sidebar.

There is now different operations available in the Action menu

- Edit sources: select which sources of signatures to use in the Ruleset
- Edit categories: select which categories of signatures to use in the Ruleset
- Add rule to suppressed list: if a rule is in this list then it will not be part of the generated Ruleset
- Remove rule from suppressed list: this remove a rule from the previously mentioned list thus re-enabling it in the Ruleset

4.8.1 Edit Sources

To select which Sources to use, just select them via the checkbox and click on Update sources. Please note that selecting categories to enable is the next step in the process when you add a new source.

4.8.2 Edit Categories

To select which Categories to use, just select them via the checkbox and click on Update categories.

4.8.3 Add rule to suppressed list

Use the search field to find the rule(s) you want to remove, you can use the SID or any other element in the signature. Scirius will search the entered text in the definition of signature and return you the list of rules. You will then be able to remove them by clicking on the check boxes and clicking on Add selected rules to suppressed list.

4.8.4 Remove rule from suppressed list

To remove rules from suppressed list, simply check them in the array and click on Remove select rules from suppressed list.

4.9 Suppression and thresholding

Alert numbers for a particular signature can be controlled through suppression or thresholding.

Thresholding is usually used when number of alerts needs to be minimized - as for example maximum 1 alert per minute from that source or destination IP for that signature.

Suppression is used when the alerts need to be suppressed - aka do not generate alerts for that particular signature from that source or destination IP.

4.9.1 Suppress alerts

From any table displaying a list of alerts, click on the particular sid for the alerts that would need to be suppressed. This will display the rule page. There you can click on Edit rule under Action on the menu on the left hand side, then select Suppress rule in the same menu. From the rule page you can also reach the suppression creation page by being on the Ip and Time stats or Advanced Data tabs and clicking on the x next to the IP address.

On the new page you will be informed if there already is some threshold or suppression in effect for that particular signature. The available fields are:

- Ruleset for which ruleset this configuration applies
- Track by (mandatory field) to track by source or destination IP
- Net for which IP and/or particular network is that valid.

Choose the ruleset, source or destination (for that particular IP) and click +Add.

You can also choose to enforce the suppression for a whole network and/or use a list of IPs. You can add in the Net field like so:

10.10.10.0/24,1.1.1.1,2.2.2.2

You can verify the suppression by clicking on the Rules info tab. You will have an informational display about the status of the different (if any) threshold and suppression configurations. Alternatively you can also view that by clicking Rulesets and selecting the ruleset for which you have applied the particular suppression or threshold.

In order for the suppression to become active you need to Push the updated ruleset to the probes. See updating appliances-ruleset on SSP and *Updating ruleset* on Scirius CE for complete instruction.

4.9.2 Threshold alerts

From any table displaying a list of alerts, click on the particular sid for the alerts that would need to be suppressed. This will display the rule page. There you can click on Edit rule under Action on the menu on the left hand side, then select Threshold rule in the same menu. From the rule page you can also reach the threshold creation page by being on the Ip and Time stats or Advanced Data tabs and clicking on the arrow down (next to the x) next to the IP address.

On the new page you will be informed if there already is some threshold or suppression in effect for that particular signature. The available fields are:

• Type type of the threshold. It can be:

limit - limits the alerts to at most "X" times.

threshold - minimum threshold for a rule before it generates an alert.

both - both limiting and thresholding are applied.

- Ruleset for which ruleset this configuration applies
- Track by (mandatory field) to track by source or destination IP

- Count number of times the alert is generated.
- Seconds within that timespan

You can verify the thresholding by clicking on the Rules info tab. You will have an informational display about the status of the different (if any) threshold and suppression configurations. Alternatively you can also view that by clicking Rulesets and selecting the ruleset for which you have applied the particular suppression or threshold.

In order for the threshold to become active you need to Push the updated ruleset to the probes. See updating appliances-ruleset on SSP and *Updating ruleset* on Scirius CE for complete instruction.

4.10 Rule transformations

There is three types of rules transformations. The first one *Action* allows the action of a particular rule to be changed - to drop, reject or filestore. Please note these actions requires advanced knowledge about rules and the rule keywords language. Second one is *Lateral* that modify the rules to detect lateral movement and third one is *Target* that update signatures by adding the target keyword.

Transformation are relative to a ruleset. But they can be set globally on a ruleset or set on a category or on a specific rule. So it is easy to handle exceptions.

4.10.1 Action transformation

Once you have a particular rule that you would like to transform - in the rule's details page on the left hand side panel under Actions click Transform rule. You will be presented with a few choices:

• Type of transformation to choose form:

drop - (IPS mode) will convert the rule from alert to drop - aka IPS mode needs to be explicitly set up and configured before hand.

reject - (IDPS/hybrid) will convert the rule from alert to reject meaning that when triggered a RST/or dst unreachable packets will be send to both the src and dst IP.

filestore - will convert those rules only that have protocols allowing for file extraction - for example alert http... or alert smtp

• Choose a ruleset you wish the newly transformed rule to be added/registered in.

NOTE: A particular rule can be transformed only once.

NOTE: For using the drop functionality you need to have a valid IPS setup.

After you make the desired selection you can add in a comment for the purpose of accountability and click on Valid. You will have the details about the transformed rule in the Information tab. You can review and confirm the transformation and the ruleset it is add in alongside any comments.

Only rules that are active can be transformed. If a rule is not active in a particular ruleset it will not have the transformation or suppress/threshold options available on the left hand side panel. To make it active you can toggle the availability of that rule by clicking on the Toggle availability option on the left hand side panel menu.

The history tab of the rule details page will have any comments and changes to the transformed rule for traceability.

4.10.2 Lateral movement

Signatures are often written with the EXTERNAL_NET and HOME_NET variables and this means they won't match if both sides of a flow are in the HOME_NET. Thus, lateral movements are not detected. This transformation change EXTERNAL_NET to any to be able to detect lateral movements.

The option can have three values:

- No: the replacement is not done
- Yes: EXTERNAL_NET is replaced by any
- Auto: Substitution is done if signature verify some properties

4.10.3 Target keyword

Available since Suricata 4.0, the target keyword can be used to tell which side of a flow triggering a signature is the target. If this key is present then related events are enhanced to contain the source and target of the attack.

The option can have four values:

- Auto: an algorithm is used to determine the target if there is one
- Destination: target is the destination IP
- Source: target is the source IP
- None: no transformation is done

Hunt

5.1 Introduction

Hunt is an interface dedicated to signatures and events visualization and tuning. It is available from the top menu of Scirius Security Platform via the Hunt link.

Hunt uses a drill down approach to select events. Filters on protocol metadata contained in the alerts events can be simply added by clicking on the magnifier icons next to the field value.

Once a composite filter is defined the user can take an action based upon it. The action will be applied to all future events matching the composite filter.

In the Community Edition, only the fields that can be used in suricata to create suppression and threshold can be used. This is currently limited to src_ip and dest_ip.

In Enterprise Edition, Stamus probes can have actions applied for filters that use arbitrary protocol metadatas.

5.2 Pages

Pages can be accessed via a click in the left menu. Jumping from one page to another page will keep the filters untouched allowing the analyst to alternate between the different views available.

5.2.1 Dashboard

This page displays a dashboard with statistics about the most interesting data and protocol metadata that can be seen in alerts.

5.2.2 Signatures

This page displays a list of signatures or signature page if a filter on a signature ID has been created.

5.2.3 Alerts

This page displays the individual alert events as a list. It is possible to expand an event to see all details including metadata about it.

5.2.4 Policies

This page displays the list of actions. The list is ordered and the filter are applied in ascending order.

The actions can be reordered to adjust respective precedence of the filters. To do so simply click on the three dots on the right side of the action and fill in the form

5.2.5 History

This page displays the history of modifications done by the users on the Scirius instance.

5.2.6 Home

Link to the Scirius homepage.

5.3 Policy Action

5.3.1 Suppress

A suppression action will delete matching events before they reach the storage.

In Scirius CE, a filter with a signature ID and a source or destination IP is needed to be able to create the action.

For Stamus probes, any fields can be used.

5.3.2 Threshold

A threshold action will only keep the alert when the defined threshold is reached.

In Scirius CE, a filter with a signature ID is needed to be able to create the action.

In Scirius EE and for Stamus probes, any fields can be used.

5.3.3 Tag

A Tag can be set based on a filter. It will be set on all matching events and will permit an easy categorization.

Currently 2 values are available:

- Informational: information is just good enough to not be suppressed and is kept just in case
- Relevant: event is relevant and an investigation is needed

All events that are not tagged can be found under the *Untagged* label. If defined actions are correctly set up it should be new signatures or unreferenced behavior. So investigation and classification should be done.

Tag action is only available for Scirius EE and Stamus probes.

5.3.4 Tag and Keep

A *Tag and keep* action is similar to the *Tag* action but a matching event will not be suppressed or thesholded by any of the actions found later in the processing of actions.

Tag and keep action is only available for Scirius EE and Stamus probes.

5.4 Keyboard shortcuts

5.4.1 Tag filtering

Here is the complete list:

- A: display all events
- *R*: display only Relevant events
- *I*: display only Informational events
- U: display only Untagged events

Suricata management

6.1 Setup

The Suricata edit page allows you to setup the parameters of the Suricata.

The parameters are the following:

- Name: hostname of the probe, be sure it is matching value of host field in JSON events
- Descr: description of the suricata
- Rules directory: scirius.rules file will be created in this directory. Suricata must only use this file
- · Suricata configuration file: used to detect some configuration settings
- Ruleset: choose the ruleset to use

6.2 Updating ruleset

To update Suricata ruleset, you can go to Suricata -> Update (Update being in the Actions menu). Then you have to select which action you want to do:

- Update: download latest version of the Sources used by the Ruleset
- Build: build a Suricata ruleset based on current version of the Sources
- · Push: trigger a Suricata reload to have it running with latest build ruleset

You can also update the ruleset and trigger a Suricata reload by running

python manage.py updatesuricata

Backup

To start a backup, run

python manage.py scbackup

To restore a backup and erase all your data, you can run

python manage.py screstore
python manage.py migrate

This will restore the latest backup. To choose another backup, indicate a backup filename as first argument. To get list of available backup, use

python manage.py listbackups

You can not restore a backup to a scirius which is older than the one where the backup has been done.

With default configuration file, the backup is done on disk in */var/backups* but other methods are available. As Scirius CE is using django-dbbackup application for backup and restore procedures, it benefits from all available methods in this application. This includes at least:

- FTP
- Amazon AWS
- Dropbox

Please see django-dbbackup configuration for more information on available methods and on their configuration.

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