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Introduction

build | passing
User guide for MISP (Malware Information Sharing Platform) - An Open Source Threat Intelligence Sharing Platform. This user guide is intended for ICT professionals such as security analysts, security incident handlers, or malware reverse engineers who share threat indicators using MISP or integrate MISP into other security monitoring tools. The user guide includes day-to-day usage of the MISP's graphical user interface along with its automated interfaces (API), in order to integrate MISP within a security environment.

Acknowledgement

The MISP user guide is a collaborative effort between all the contributors to MISP including:

- Belgian Ministry of Defence (CERT)
- CIRCL Computer Incident Response Center Luxembourg
- iklody IT Solutions
- NATO NCIRC
- Cthulhu Solutions
- CERT-EU

and many other contributors especially the ones during the MISP hackathons.

Contributing

We welcome contributions to the MISP book. If you want to contribute, fork the misp-book repository and pull a request with your changes. You can also open issues if you find any errors or propose changes.
Format

MISP book is available in HTML, PDF, ePub and Kindle mobi format.

License

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description: Convention Used in MISP-Book

Convention Used in This Book

code block or value

- Used for variable, function or menu names in MISP.

Language

The language in this book is american english. All the screenshots and examples are in english.

CoC

The same code of conduct applies to this book as for the main MISP project. As a book can some times be considered the inadvertent soul of a piece of software, please take good care and consideration of our Code of Conduct. The CoC can be read here.

Example install

The examples and screenshots provided in this book have been created with the MISP Autogenerated VM.

To get a copy of the latest VM click here

MISP Instance

In general when talking about a network of inter-connected MISP servers, each server is a MISP instance. Whilst we have no strong feelings towards anyone naming schemes, as a rule of thumb try to have a scheme that makes everyday use easy when analysts need to talk about remote MISP instances.

The hostname used for the instance in this book is misp.local and we will henceforth refer to it either by name or as local MISP instance.

Example Organisations

As MISP is a platform to support information sharing, example organisations are often used within this book.

A set of users and organisations are used in the different examples.

The following two organisations are regularly used as example:

- Setec Astronomy with UUID 58d38339-7b24-4386-b4b4-4c0f950d210f
- Acme Finance with UUID 58d38326-edab-443a-9fa8-4e12950d210f
Starting from MISP 2.4.71, the example organisations with the above mentioned UUID are black-listed to avoid large distribution of sample events while testing a MISP instance. If you want to test your distribution, the sample organisation black-listing can be removed in Administration / Manage Org Blacklists.

**Example IOCs**

As with the example organisations, we want to make this book as useful as possible by using real life examples.

The following IOC examples have been used:

- Sirefef (aka ZeroAccess) Sample Event ID: #31337
- WannaCry Sample Event ID: #42
- Dridex Sample Event ID: #23
Quick Start

MISP (Open Source Threat Intelligence and Sharing Platform) software facilitates the exchange and sharing of threat intelligence, Indicators of Compromise (IOCs) about targeted malware and attacks, financial fraud or any intelligence within your community of trusted members. MISP sharing is a distributed model containing technical and non-technical information which can be shared within closed, semi-private or open communities. Exchanging such information should result in faster detection of targeted attacks and improve the detection ratio, whilst also reducing the number of false positives.

With the focus on automation and standards, MISP provides you with a powerful ReST API, extensibility (via misp-modules) or additional libraries such as PyMISP, jump ahead to these chapters to get started.

Login into MISP

MISP default credentials:

| Username: | admin@admin.test |
| Password: | admin |

Tasks to do after first Start

1. Change site admin password
2. Activate Feeds
3. Setup your User 3.1 Designate a Site Admin and an Org Admin 3.2 Add some contributing users and assign the corresponding Roles
4. MISP Administration 4.1 Edit your first organisations' name

Password Policy

- [12]: Ensure that the password is at least 12 characters long
- [A-Z]: contains at least one upper-case
- [0-9]: includes a digit or a special character
- [a-z]: at least one lower-case character.

If you need a password generator use:

- Ubuntu / Debian: pwgen
- Website: LastPass PW Generator
- Built-in generator in Keepass* and other password manager
- Built-in generator in various web browsers

All Generator tools are only possibilities without any guarantee!
tl;dr

Create an Event

A. Add Event
1. Add Event
2. Populate Fields

B. Add Attachments
3. Choose File
4. Add Attachment
5. Populate Fields

C. Add Event Attributes
6. Add Attribute
7. Choose File
8. Populate Fields

All IOC data entered is made up of an event object and described by its connected attributes.

The following attribute types should be added for each event:
- ip-src: source IP of attacker
- email-src: email used to send malware
- md5/sha1/sha256: checksum
- Hostname: full hostname of attacker
- Domain: domain name used in malware
Browse Past Events

1. List Events
2. Filter
3. Click any row
4. See events with one or more matching attributes
Export Events for logsearches

1. Download all as XML
2. Download all as CSV

2. Download for log correlation
Create an Event

1. The event created will be restricted to the organisations included in the distribution setting on the local instance only until it is published.

Add Event

Date
2018-05-10

Distribution
This community only

Threat Level
High

Analysis
Initial

Event Info
Quick Event Description or Tracking Info

Extends event
Event UUID or ID. Leave blank if not applicable.

GFI sandbox
Choose file
No file chosen

Add

2. Summarized description:
- Distribution
- Threat Level
- Event Info
- GFI sandbox (optional)
- Does it extend? (optional)

3. Add == Save
You only have to add a few pieces of information to register your Event. Further details will be specified after the Event has been added.

**Describe Event**

Red is totally normal. No worries. (In future releases this will change to a more harmonious color)
Now you can specify the information for your Event (you will need to scroll the window).

**Free-Text Import Tool**

![Image of Free-Text Import Tool]

After Record, the RED ALERT COLOR is fully normal.

All IOC data entered is made up of an event object and described by its connected attributes.

Very useful for putting data from scratch.
If you have a list of indicators from which you would like to quickly generate attributes then the **Free-text import tool** is just what you need. Simply paste your list of indicators (separated by line-breaks) into this tool.

### Freetext Import Results

Below you can see the attributes that are to be created. Make sure that the categories and the types are correct, often several options will be offered based on an inconclusive automatic resolution.

<table>
<thead>
<tr>
<th>Value</th>
<th>Similar Attributes</th>
<th>Category</th>
<th>Type</th>
<th>IDB</th>
<th>Comment</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>0x21296e1f0595</td>
<td></td>
<td>Payload delivery</td>
<td>sha256</td>
<td></td>
<td></td>
<td>Imported via the Freetext Import</td>
</tr>
</tbody>
</table>

Submit

```
sha256 → authentihash
Update all comment fields
```

Change all

Change all
The tool will help you to find similarities between your import and other issues already registered in MISP.
For example, you can see the ID of all related Events and view their information.

**Tags and Taglist**

**Using existing Data**

Another easy way to add information is to use Tags. You can see the result of adding existing Tags (circl:incident-classification=XSS ans circl:incident-classification="information-leak").

| Tags | circl:incident-classification="XSS" | circl:incident-classification="information-leak" | + |
By clicking the button, you can add more tags from an existing Taglist.

### Select Tag Source

<table>
<thead>
<tr>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Custom Tags</td>
</tr>
<tr>
<td>Taxonomy Library: circl</td>
</tr>
</tbody>
</table>

Select
In particular the "Taxonomy Library: circl" Taglist is very complete, as you can see:

<table>
<thead>
<tr>
<th>Select Tag</th>
</tr>
</thead>
<tbody>
<tr>
<td>circl:incident-classification=&quot;spam&quot;</td>
</tr>
<tr>
<td>circl:incident-classification=&quot;system-compromise&quot;</td>
</tr>
<tr>
<td>circl:incident-classification=&quot;scan&quot;</td>
</tr>
<tr>
<td>circl:incident-classification=&quot; denial-of-service&quot;</td>
</tr>
<tr>
<td>circl:incident-classification=&quot; copyright-issue&quot;</td>
</tr>
<tr>
<td>circl:incident-classification=&quot; phishing&quot;</td>
</tr>
<tr>
<td>circl:incident-classification=&quot; malware&quot;</td>
</tr>
<tr>
<td>circl:incident-classification=&quot; XSS&quot;</td>
</tr>
<tr>
<td>circl:incident-classification=&quot; vulnerability&quot;</td>
</tr>
<tr>
<td>circl:incident-classification=&quot; fastflux&quot;</td>
</tr>
</tbody>
</table>
Make your own Taglist

If you want make your own Taglist, select Add Tag.
You will see the following window:

<table>
<thead>
<tr>
<th>Add Tag</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
</tr>
<tr>
<td>Popom</td>
</tr>
</tbody>
</table>

- Exportable

Add
Then, when you add the new tag it will appear in the Custom Taglist.

**Suggestions**

The following attribute types should be added for each Event:

- ip-src: source IP of attacker
- email-src: email used to send malware
- md5/sha1/sha256: checksum
- Hostname: full host/dnsname of attacker
- Domain: domain name used in malware

**Browsing Events**

To see your Event, select List Events from the menu Events Action. You can click any row and select a filter.
If you click on your Event's number, you can see all the information related to your Event.

### PouPouPidou

<table>
<thead>
<tr>
<th>Event ID</th>
<th>145</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uuid</td>
<td>57a304e7-ce08-4e2d-a80c-0662ca38a332</td>
</tr>
<tr>
<td>Org</td>
<td>MSP</td>
</tr>
<tr>
<td>Owner org</td>
<td>MSP</td>
</tr>
<tr>
<td>Contributors</td>
<td></td>
</tr>
<tr>
<td>Email</td>
<td><a href="mailto:admin@misp.training">admin@misp.training</a></td>
</tr>
<tr>
<td>Tags</td>
<td>circlincident-classifications=&quot;XSS&quot;</td>
</tr>
<tr>
<td>Date</td>
<td>2016-08-04</td>
</tr>
<tr>
<td>Threat Level</td>
<td>High</td>
</tr>
<tr>
<td>Analysis</td>
<td>Initial</td>
</tr>
<tr>
<td>Distribution</td>
<td>All communities</td>
</tr>
<tr>
<td>Info</td>
<td>PouPouPidou</td>
</tr>
<tr>
<td>Published</td>
<td>No</td>
</tr>
</tbody>
</table>

#### Related Events

- **2016-08-09 (85)**

See events with one or more matching attributes
Export Events for Log Search

Export functionality is designed to automatically generate signatures for intrusion detection systems. To enable signature generation for a given attribute, the Signature field of this attribute must be set to Yes. Note that not all attribute types are applicable for signature generation, currently we only support NIDS signature generation for IP, domains, host names, user agents etc., and hash list generation for MD5/SHA1 values of file artifacts. Support for more attribute types is planned.

---

**Quick Start**

25
Simply click on any of the following buttons to download the appropriate data for log correlation.

Export

Export functionality is designed to automatically generate signatures for intrusion detection systems. To enable signature generation for a given attribute, Signature field of this attribute must be set to ‘Yes’. Note that not all attribute types are applicable for signature generation, currently we only support MD5/SHA1 values of file artifacts. Support for more attribute types is planned.

Simply click on any of the following buttons to download the appropriate data.

<table>
<thead>
<tr>
<th>Type</th>
<th>Last Update</th>
<th>Description</th>
<th>Outstaled</th>
<th>Progress</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>XML</td>
<td>NA</td>
<td>Click this to download all events and attributes that you have access to except any attachments in a custom XML format.</td>
<td>Yes</td>
<td>NA</td>
<td>Download, Generate</td>
</tr>
<tr>
<td>CSV, Sig</td>
<td>NA</td>
<td>Click this to download all attributes that are indicators and that you have access to except any attachments in CSV format.</td>
<td>Yes</td>
<td>NA</td>
<td>Download, Generate</td>
</tr>
<tr>
<td>CSV, all</td>
<td>NA</td>
<td>Click this to download all attributes that you have access to except any attachments in CSV format.</td>
<td>Yes</td>
<td>NA</td>
<td>Download, Generate</td>
</tr>
</tbody>
</table>
MISP Instance requirements

- Intro
  - The biggie
    - Tool assisted sizing

Intro

There are various ways you can run a MISP instance.

- Virtualized with docker/ansible/packer etc
- VMware/Virtualbox/Xen etc
- Dedicated hardware
- Road warrior setups
- Air-gapped setups

Whilst there is never an ultimate answer to what specifications a system needs, we try to give an approximate answer depending on your use case.

The biggie

Having millions of events with millions of attributes (indicators) will eventually result in sub-par performance. Ideally you have millions of attributes and thousands of events. But this also depends on how you ingest the data. With millions of attributes a bottleneck could be the correlation engine. Especially if you have many duplicates in your events. (Use the feed matrix to see if feeds are massively overlapping)

Tool assisted sizing

During a hackathon misp-sizer was conceived. (code) This can give you a very rough estimate and needs some more improvements.
Get your own MISP instance

The intention of this chapter is to support you in getting your own MISP instance up and running.

MISP Virtual Machine

CIRCL maintains the image of a recent MISP virtual machine online. This VM is generated after every commit to the main MISP repository on Github.

This is a very easy out of the box solution, optimized for product evaluation and to support trainings held by CIRCL staff.

MISP VM Download

The best place to get the latest version of the MISP virtual machine, as well as all the available training materials is the MISP training materials page on the CIRCL website.

If you do not remember the direct link to the MISP training materials here are the very easy to remember steps you have to follow to reach the right place:

1. Access the CIRCL homepage
2. Navigate to the Training area
3. Click MISP Malware Information Sharing Platform - Threat Sharing
4. Follow the link to the Training materials freely available

Download the image of the virtual machine and validate the SHA512 fingerprint.

Import Appliance

In VirtualBox use the "Import Appliance..." functionality to import the virtual machine.
Appliance to import

VirtualBox currently supports importing appliances saved in the Open Virtualization Format (OVF). To continue, select the file to import below.

MISP_v2.4.70.ova
The instructions in this manual covers VirtualBox only. If you prefer another virtualization solution like VMWare you can find some quick instruction on the MISP training materials page.

ESXi Servers have been tested too. Should work without problem but some manual changing of the ATA-Bus is needed.

**MISP VM Credentials**

The MISP image is pre-configured to be reachable on the private IP address `localhost` by SSH on port 2222. The GUI is reachable by `http://localhost:8080/`.

You should have two interfaces on your VirtualBox configuration (NAT and host-only). You can also configure access to the MISP instance by doing port forwarding on the NAT interface.

MISP credentials:

- **GUI Admin**: admin@admin.test:admin (it's the site admin account with full rights, feel free to create other users)
- **Shell/SSH**: misp : Password1234
- **MySQL**: The credentials are generated during the VM generator. The details are located in `~misp/mysql.txt`

**Networking on the VM**

Virtualbox has a neat feature to forward ports from your Host machine to the Guest VM. We forward the following ports:

- **ssh** Forward from 2222 on Host -> 22 on guest
- **http** Main WebUI - 8080 on Host -> 80 on guest
- **https** Not in use - 8443 on Host -> 443 on guest
- **8001** MISP Dashboard - 8001 on Host -> 8001 on guest
- **8888** Viper Web UI - 8888 on Host -> 8888 on guest
- **1666** misp-modules used to poll the misp-modules API - 1666 on Host -> 6666 on guest

If the port is already used on your host, virtualbox will still boot and all the other ports will work.

To change the port forwarding select the running VM in the UI and click on **Settings** -> **Network** -> **Advanced** -> **Port forwarding**.
Overview of default port forwards

<table>
<thead>
<tr>
<th>Name</th>
<th>Protocol</th>
<th>Host IP</th>
<th>Host Port</th>
<th>Guest IP</th>
<th>Guest Port</th>
</tr>
</thead>
<tbody>
<tr>
<td>dashboard</td>
<td>TCP</td>
<td>8001</td>
<td>8001</td>
<td>0.0.0.0</td>
<td>8001</td>
</tr>
<tr>
<td>http</td>
<td>TCP</td>
<td>8080</td>
<td>80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>https</td>
<td>TCP</td>
<td>8443</td>
<td>443</td>
<td></td>
<td></td>
</tr>
<tr>
<td>misp-modules</td>
<td>TCP</td>
<td>1666</td>
<td>6666</td>
<td>0.0.0.0</td>
<td>6666</td>
</tr>
<tr>
<td>ssh</td>
<td>TCP</td>
<td>2222</td>
<td>22</td>
<td>0.0.0.0</td>
<td>22</td>
</tr>
<tr>
<td>viper</td>
<td>TCP</td>
<td>8888</td>
<td>8888</td>
<td>0.0.0.0</td>
<td>8888</td>
</tr>
</tbody>
</table>
The reason that some entries have 0.0.0.0 and other are left blank is due to a virtualbox bug where traffic would not be sent to the Guest VM.
VMWare users will need to connect to whatever IP the VM has on your host. There is NO port forwarding done for VMWare.

**Potential issues**

You might have a very old VM installed and the ports are not be forwarded. Either configure the port forwards manually or download a new VM.
General Layout

The top bar

Simple User
This menu contains all of the main functions of the site as a series of dropdown menus. These contain all (from the current simple user's perspective) accessible functions sorted into several groups.

- **Home button**: This button will return you to the start screen of the application, which is the event index page (more about this later).
- **Event Actions**: All the malware data entered into MISP is made up of an event object that is described by its connected attributes. The Event actions menu gives access to all the functionality that has to do with the creation, modification, deletion, publishing, searching and listing of events and attributes.
- **Galaxies**: Shortcut to the list of MISP Galaxies on the MISP instance.
- **Input Filters**: Input filters alter what and how data can be entered into this instance. Apart from the basic validation of attribute entry by type, it is possible for the site administrators to define regular expression replacements and blacklists for certain values in addition to blocking certain values from being exportable. Users can view these replacement and blacklist rules here whilst administrator can alter them.
- **Global Actions**: This menu gives you access to information about MISP and this instance. You can view and edit your own profile, view the manual, read the news or the terms of use again, see a list of the active organizations on this instance and a histogram of their contributions by attribute type.
- **MISP**: Simple link to your BASEURL
- **Steve**: Name (Auto generated from Mail address) of current logged in user
- **Envelope**: Link to User Dashboard where you can consult some of your notifications and changes since last visit. Like some of the proposals receieved for your organisation.
- **Log out**: The Log out button to end your session immediatly.

**Admin Menu Bar**
- **Home button**: idem as user.
- **Event Actions**: ibidem
- **Galaxies**: You can additionally update the Galaxies.
- **Input Filters**: ibidem
- **Global Actions**: ibidem
- **Sync Actions**: With administrator access rights, shows a list of the connected instances and allows the initiation of a push and a pull (more about the synchronization mechanisms later).
- **Administration**: Administrators can add, edit or remove user accounts and user roles. Roles define the access rights to certain features such as publishing of events, usage of the REST interface or synchronization of any user belonging to the given role. Site administrators can also access a contact form, through which it is possible to reset the passwords of users, or to just get in touch with them via encrypted e-mails.
- **Audit**: If you have audit permissions, you can view the logs for your organization (or for site admins for the entire system) here or even search the logs if you are interested in something specific.
- **MISP**: ibidem
- **Admin**: ibidem
- **Envelope**: Link to User Dashboard where you can consult some of your notifications and changes since last visit. Like some of the proposals received for your organisation.
- **Log out**: The Log out button to end your session immediately.

**A list of the contents of each of the above drop-down menus**

**Event actions**
- **List Events**: Lists all the events in the system that are not private or belong to your organisation. You can add, modify, delete, publish or view individual events from this view.

- **Add Event**: Allows you to fill out an event creation form and create the event object, which you can start adding attributes.

- **List Attributes**: Lists all the attributes in the system that are not private or belong to your organisation. You can modify, delete or view each individual attribute from this view.

- **Search Attributes**: You can set search terms for a filtered attribute index view here.

- **REST client**: MISP Online REST client where you can make calls directly to the API via a Web UI.

- **View Proposals**: Shows a list of all proposals that you are eligible to see.

- **Events with proposals**: Shows all of the events created by your organisation that has pending proposals.

- **List Tags**: List all the tags that have been created by users with tag creation rights on this instance.

- **Add Tag**: Create a new tag.

- **List Taxonomies**: List all of the taxonomies installed on the MISP instance. This is also the place to activate the taxonomies as a Org Admin/Site Admin.

- **List Templates**: List all of the templates created by users with template creation rights on this instance.

- **Add Template**: Create a new template.

- **Export**: Export the data accessible to you in various formats.

- **Automation**: If you have authentication key access, you can view how to use your key to use the REST interface for automation here.

**Input filters**

- Import Regexp
- Signature Whitelist
- List Warninglists
- List Noticelists
- **Import Regex**: You can view the Regular Expression rules, which modify the data that can be entered into the system. This can and should be used to help filter out personal information from automatic imports (such as removing the username from Windows file paths), having unified representation for certain common values for easier correlation or simply standardizing certain input. It is also possible to block certain values from being inserted. As a site administrator or a user with regex permission, you can also edit these rules.

- **Signature Whitelist**: You can view the whitelist rules, which contains the values that are blocked from being used for exports and automation on this instance. Site administrators have access to editing this list.

- **List Warninglists**: MISP warninglists are lists of well-known indicators that can be associated to potential false positives, errors or mistakes. The warning lists are integrated in MISP to display an info/warning box at the event and attribute level.

- **List Noticelists**: MISP noticelists are lists of #Todo: Double check description from repo!!!

**Global Actions**

- News
- My Profile
- Dashboard
- Organisations
- Role Permissions

- List Object Templates
- List Sharing Groups
- Add Sharing Group

- User Guide
- Categories & Types
- Terms & Conditions
- Statistics

- List Discussions
- Start Discussion
• **News**: Read about the latest news regarding the MISP system.

• **My Profile**: Manage your user account.

• **Dashboard**: allow you to see your Notifications of Proposals, Events with proposals and Delegation request. Your can see the last changes since your last visit, as Events updates and Events publications.

• **Organizations**: View the organizations having a presence on this instance, with some useful informations as contact's name.

• **Role Permissions**: You can view the role permissions here.

• **List Sharing Groups**: You can view the list of existing Sharing Groups who you or your organization have access.

• **Add Sharing Group**: You can create a sharing group.

• **User Guide**: A link to this user guide.

• **Categories & Types**: Quick overview of Attribute Categories and Type. e.g: md5 -> Payload delivery, Artifacts dropped, Payload installation, External analysis

• **Terms & Conditions**: General terms and conditions which can be configured in Administration -> Server Settings -> MISP Settings: MISP.terms_file . From the UI: "The filename of the terms and conditions file. Make sure that the file is located in your MISP/app/files/terms directory"

• **Statistics**: View a series of statistics about the users and the data on this instance.

• **List Discussions**: List threads of discussions created on the MISP instance by the organisations connected to this local community.

• **Start Discussion**: Create a new discussion thread.

### Sync Actions

- List Servers
- List Feeds
- **List Servers**: Connect your MISP instance to other instances, or view and modify the currently established connections.

- **List Feeds**: Follow the RSS feeds of other organization or CERTs worldwide.

**Administration**

- List Users
- Add User
- Contact Users

- List Organisations
- Add Organisation

- List Roles
- Add Role

- Server Settings & Maintenance

- Jobs

- Scheduled Tasks

- Blacklist Event
- Manage Event Blacklists

- Blacklist Organisation
- Manage Org Blacklists
- **List Users:** View, modify or delete the currently registered users.
- **Add User:** Create an account for a new user for your organisation. Site administrators can create users for any organisation.
- **Contact Users:** You can use this view to send messages to your current or future users or send them a temporary password.

When adding a new user to the system, or when you want to manually reset the password for a user, just use the "Send temporary password" setting.

After selecting the action, choose who the target of the e-mails should be (all users, a single user or a user not yet in the system).

You can then specify (if eligible) what the e-mail address of the target is (for existing users you can choose from a dropdown menu).

In the case of a new user, you can specify the future user's GnuPG key, to send his/her new key in an encrypted e-mail.

The system will automatically generate a message for you, but it is also possible to write a custom message if you tick the check-box, but don't worry about assigning a temporary password manually, the system will do that for you, right after your custom message.

- **List Organisations:** View the organizations having a presence on this instance, with some useful informations.
- **Add Organisation:**
  - **List Roles:** List, modify or delete currently existing roles.
  - **Add Role:** Create a new role group for the users of this instance, controlling their privileges to create, modify, delete and to publish events and to access certain features such as the logs or automation.
  - **Server Settings & Maintenance:** Various tools, upgrade scripts that can help a site-admin run the instance & set up and diagnose your MISP installation.
  - **Jobs:** View the background jobs and their progress
  - **Scheduled Tasks:** Schedule the pre-defined tasks for your instance (this currently includes export caching, server pull and server push).
  - **Blacklist Event:** Link to form where you can quickly add an event to a blacklist with it's UUID.
  - **Manage Event Blacklists:** List of blacklisted events on MISP instance.
  - **Blacklists Organisation:** Link to for where you can quickly add an organisation to a blacklist with it's UUID.
  - **Manage Org Blacklists:** List of blacklisted Organisations on this instance.

**Audit**

- **List Logs**
- **Search Logs**
● **List Logs**: View the logs of the instance.
● **Search Logs**: Search the logs by various attributes.

**The left bar**

This bar changes based on each page-group. The blue selection shows you what page you are on.
General Concepts

Admins and Site Admins

There are two types of admins in MISP: Admins (also referred to as org admins) and Site Admins. Whilst the former can only do some limited administration of users of his/her own organisation, site admins have access to all of the features and data of the system. They are in charge of making sure that the system runs correctly and the maintenance of MISP.

Background Jobs

A lot of the heavier tasks are a burden to users, in that their actions can cause long delays (and in some cases timeouts) while the application logic is executing. To alleviate this, long processes have been (if enabled) moved to background jobs, meaning that their execution happens asynchronously in the background, allowing the user to freely interact with the platform whilst the request is being processed.

MISP Instance

A MISP instance is an installation of the MISP software and the connected database. All the data visible to the users is stored locally in the database and data that is shareable (based on the distribution settings) can be synchronised with other instances via the Sync actions. The instance that you are reading this manual on will be referred to as "this instance" or "your instance". The instances that your instance synchronises with will be referred to as "remote instances".

Organisation administrators and Site administrators

We have two types of administrators, site and organisation admins. The former has access to every administrator feature for all the data located on the system including global features such as the creation and modification of user roles and instance links, whilst organisation admins can administer users, events and logs of their own respective organisations.

Pivot path
The (branching) path taken by a user from event to event while following correlation links. This is represented by the branching graph in the event view.

**Pivoting**

The act of navigating from event to event through correlation links.

**Proposals**

Each event can only be directly edited by users of the original creator organisation (and site admins). However, if another organisation would like to amend an event with extra information on an event, or if they'd like to correct a mistake in an attribute, they can create a Proposal. These proposals could then be accepted by the original creator organisation. These proposals can be pulled to another server, allowing users on connected instances to propose changes which then could be accepted by the original creators on another instance (and subsequently pushed back).

**Publishing**

When an event is first created by a user, it is visible to everyone on the instance based on the access rights ("Your organisation only" events will not be visible to users of other organisations), but they will not be synchronised and they won’t be exportable. For this, a user with publishing permission of the organisation that created the event has to publish the event. The system will then inform all the users of the instance that are subscribing to e-mail notifications and who have access to view the published event via an e-mail.

**Pull**

Pulling is the process of using the configured sync user on a remote instance to REST GET all of the accessible data (based on the distribution rights) to your instance and store it.

**Push**

Pushing is the process of using a configured instance link to send an event or all accessible events (limited by the distribution rights) through the REST interface to a remote instance.

**Scheduled Tasks**

Certain common tasks can be scheduled for a later execution or for regular recurring executions. These tasks currently include caching all of the export formats, pulling from all eligible instances and pushing to all eligible instances.

**Sync User**

A user of a role that grants sync permissions, these users (and their authentication keys) are used to serve as the points of connection between instances. Events pushed to an instance are pushed to a sync user, who then creates the events on the remote instance. Events pulled are added by the sync user that is used to connect the remote instance to your instance. As an administrator, keep in mind that a sync user needs auth key and publish permissions, has to have undergone the mandatory password change and has to have accepted the Terms of Use in order for the sync to work. Please make sure that all of these steps are taken before attempting to push or pull.

**Synchronisation**

What we call synchronisation is an exchange of data between two (or more) MISP instances through our pull and push mechanisms.
Tagging

Users with tagging rights can assign various dynamically created tags to events, allowing an arbitrary link between events to be created. It is possible to filter events based on these tags and they can also be used to filter events for the automation.

Templating

Users with templating rights can create easy-to-fill forms that help with the event creation process.
User Management and Global Actions

First run of the system

When first logging into MISP with the username and password provided by your administrator, there are a number of things that need to be done, before you can start using the system.

- **Accepting the Terms of use:** The terms of use are shown immediately after logging in for the first time, make sure to read through this page before clicking "Accept Terms" at the bottom of the page.
- **Changing the password:** After accepting the ToU, you'll be prompted to change your password, but keep in mind that it has to be pass to the MISP password policy. Enter the same password into the confirm password field, before clicking submit to finalise the change.
- **Setting up the GnuPG Key**: In order for the system to be able to encrypt the messages that you send through it, it needs to know your GnuPG key. Navigate to the Edit profile view (My Profile on the left -> Edit profile in the top right corner). Paste the key into the GnuPG Key field and click submit.

- **Subscribing to Auto-alerts**: Turning auto-alerts on will allow the system to send you e-mail notifications about any new public events entered into the system by other users and private events added by members of your organisation. To turn this on, navigate to the Edit profile view (My profile on the left navigation menu -> Edit profile in the top right corner). Tick the auto-alert checkbox and click submit to enable this feature.
• **Subscribing to e-mails sent via the "Contact Reporter" functionality:** This feature is turned on right below the autoalerts and will allow you to receive e-mails addressed to your organisation whenever a user tries to ask about an event that was posted by a user of your organisation. Keep in mind that you can still be addressed by such a request even when this setting is turned off, if someone tries to contact you as the event creator directly or your organisation for an event that you personally have created then you will be notified.

• **Reviewing the Terms & Conditions:** To review the Terms & Conditions or to read the User Guide, use the appropriate button on the left navigation menu.

• **Making sure that compatibility mode is turned off (IE9&IE10):** Compatibility mode can cause some elements to appear differently than intended or not appear at all. Make sure you have this option turned off.
Using the system

Creating an event

The process of entering an event can be split into 3 phases, the creation of the event itself, populating it with attributes and attachments and finally publishing it.

During this first step, you will be create a basic event without any actual attributes, but storing general information such as a description, time and risk level of the incident. To start creating the event, click on the New Event button on the left and fill out the form you are presented with. The following fields need to be filled out:
## Add Event

<table>
<thead>
<tr>
<th>Date</th>
<th>Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All communities</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Threat Level</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>initial</td>
</tr>
</tbody>
</table>

*Quick Event Description or Tracking Info*

**GFI sandbox**

**Choose File**: No file chosen

[Add]
- **Date**: The date when the incident has happened. Just click this field and a date-picker will pop up where you can select the desired date.

- **Distribution**: This setting controls, who will be able to see this event once it becomes published and eventually when it becomes pulled. Apart from being able to set which users on this server are allowed to see the event, this also controls whether the event will be synchronised to other servers or not. The distribution is inherited by attributes: the most restrictive setting wins. The following options are available:
  - **Your organization only**: This setting will only allow members of your organisation to see this. It can be pulled to another instance by one of your organisation members where only your organisation will be able to see it. Events with this setting will not be synchronised. Upon push: do not push. Upon pull: pull.
  - **This Community-only**: Users that are part of your MISP community will be able to see the event. This includes your own organisation, organisations on this MISP server and organisations running MISP servers that synchronise with this server. Any other organisations connected to such linked servers will be restricted from seeing the event. Upon push: do not push. Upon pull: pull and downgrade to Your organization only.
  - **Connected communities**: Users that are part of your MISP community will be able to see the event. This includes all organisations on this MISP server, all organisations on MISP servers synchronising with this server and the hosting organisations of servers that connect to those afore mentioned servers (so basically any server that is 2 hops away from this one). Any other organisations connected to linked servers that are 2 hops away from this own will be restricted from seeing the event. Upon push: do not push. Upon pull: pull and downgrade to This Community only and push. Upon pull: pull and downgrade to This Community only.
  - **All communities**: This will share the event with all MISP communities, allowing the event to be freely propagated from one server to the next. Upon push: push. Upon pull: pull.
  - **Sharing group**: This will share the event to the defined sharing group. This includes only the organisations defined in the sharing group. The distribution can be local and cross-instance depending of the sharing group definition. For more information on sharing groups, refer to the sharing group section.

- **Threat Level**: This field indicates the risk level of the event. Incidents can be categorised into three different threat categories (low, medium, high). This field can alternatively be left as undefined. The 3 options are:
  - **Low**: General mass malware.
  - **Medium**: Advanced Persistent Threats (APT)
  - **High**: Sophisticated APTs and 0day attacks.

- **Analysis**: Indicates the current stage of the analysis for the event, with the following possible options:
  - **Initial**: The analysis is just beginning
  - **Ongoing**: The analysis is in progress
  - **Completed**: The analysis is complete

- **Event Description**: The info field, where the malware/incident can get a brief description starting with the internal reference. This field should be as brief and concise as possible, the more detailed description happens through attributes in the next stage of the event's creation. Keep in mind that the system will automatically replace detected text strings that match a regular expression entry set up by your server's administrator(s).

- **GFI Sandbox**: It is possible to upload the exported .zip file from GFI sandbox with the help of this tool. These will be dissected by the MISP and a list of attributes and attachments will automatically be generated from the .zip file. Whilst this does most of the work needed to be done in the second step of the event's creation, it is important to manually look over all the data that is being entered.

### Add attributes to the event

The second step of creating an event is to populate it with attributes and attachments. This can be done by adding them manually or importing the attributes from an external format (OpenIOC, ThreatConnect). To import from an external format or to upload an attachment use the options in the menu on the left.
Using the System

<table>
<thead>
<tr>
<th>Date</th>
<th>Category</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011-10-15</td>
<td>Network activity</td>
<td>iniset</td>
<td>F.E.F.E2</td>
</tr>
</tbody>
</table>
Using the above shown buttons, you can populate an event using various tools that will be explained in the following section. Let's start with the Add Attribute button.

**Add Attribute**

Keep in mind that the system searches for regular expressions in the value field of all attributes when entered, replacing detected strings within it as set up by the server's administrator (for example to enforce standardised capitalisation in paths for event correlation or to bring exact paths to a standardised format). The following fields need to be filled out:

**Add Attribute**

<table>
<thead>
<tr>
<th>Category</th>
<th>Type</th>
<th>Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network activity</td>
<td>url</td>
<td>All communities</td>
</tr>
</tbody>
</table>

**Value**

http://www.teamliquid.net

**Contextual Comment**

Submit

- for Intrusion Detection System
- Batch Import
- **Category:** This drop-down menu explains the category of the attribute, meaning what aspect of the malware this attribute is describing. This could mean the persistence mechanisms of the malware or network activity, etc. For a list of valid categories, click here

- **Type:** Whilst categories determine what aspect of an event they are describing, the Type explains by what means that aspect is being described. As an example, the source IP address of an attack, a source e-mail address or a file sent through an attachment can all describe the payload delivery of a malware. These would be the types of attributes with the category of payload deliver. For an explanation of what each of the types looks like together with the valid combinations of categories and types, click here

- **Distribution:** This drop-down list allows you to control who will be able to see this attribute. The distribution is inherited by attributes: the most restrictive setting wins. For more info, read the distribution information in the creating an event section - click here

- **Value:** The actual value of the attribute, enter data about the value based on what is valid for the chosen attribute type. For example, for an attribute of type ip-src (source IP address), 11.11.11.11 would be a valid value. For more information on types and values, click here

- **Contextual Comment:** You can add some comments to the attribute that will not be used for correlation but instead serves as purely an informational field.

- **For Intrusion Detection System:** This option allows the attribute to be used as an IDS signature when exporting the NIDS data, unless it is being overruled by the white-list. For more information about the white-list, head over to the administration section. If the IDS flag is not set, the attribute is considered as contextual information and not to be used for automatic detection.

- **Batch import:** If there are several attributes of the same type to enter (such as a list of IP addresses, it is possible to enter them all into the same value-field, separated by a line break between each line. This will allow the system to create separate lines for the each attribute.

**Add Object**

Please have a look at the MISP-objects chapter

**Create and manage Sharing Groups**

Sharing in MISP are a more granular way to create re-usable distribution lists for events/attributes that allow users to include organisations from their own instance (local organisations) as well as organisations from directly, or indirectly connected instances (external organisations). Sharing can be created by any user that has the sharing group editor permission. Additionally, sharing can be edited by any user that has the aforementioned permission in addition to being a member of the sharing group’s creating organisation, or any organisation that is marked as an “extender” of the sharing group. The main use for the extend feature is delegating the rights to add users to trusted partners. For example, when sharing with a different industry sector, knowing all actors that should receive the information is often not possible, so delegating the rights to extend the event to a trusted representative of said sector would allow for someone with more insight to find and add the proper list of partners for the sharing group.
Using the System

Sharing group settings

<table>
<thead>
<tr>
<th>Instances</th>
<th>Organisations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Misp 1</td>
<td>Org1</td>
</tr>
<tr>
<td>Misp 2</td>
<td>Org2</td>
</tr>
<tr>
<td>Misp 3 (all)</td>
<td>Org4</td>
</tr>
<tr>
<td></td>
<td>Org6</td>
</tr>
</tbody>
</table>
The most general use-cases for sharing groups are creating re-usable topical subgroups in MISP that share events or for ad-hoc sharing scenarios (such as several organisations involved in a specific incident wanting to work together). Generally sharing groups add a level of complexity for the users involved as well as a performance overhead on the data marked with it.

As a best-practice recommendation, using traditional distribution methods is preferred unless they cannot cover the given use-case. Also, whilst sharing groups can be assigned to both events and attributes, it is highly recommended to use the special "inherit" distribution setting on attributes whenever the attribute's sharing group would match the event's.

Sharing groups consist of the following elements, each of which has its own page in the sharing group creator/editor tool (accessed via the Global actions -> List Sharing Groups and Add Sharing Group functionalities):

**New Sharing Group**

<table>
<thead>
<tr>
<th>General</th>
<th>Organisations</th>
<th>MISP Instances</th>
<th>Summary and Save</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Sector</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Releasable to</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Sector organisations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A general sharing group for the financial sector including financial sector actors like banks, insurance companies or payment processing companies.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Make the sharing group selectable (active)

Next page
- **General**: Metadata describing the intent of the sharing group
  - **Name**: The unique name of the sharing group.
  - **Releasable to**: A human-readable description of who data marked with the sharing group is shareable with. This field is NOT used by MISP for anything besides for being an informational field aimed at extender organisations of the sharing group.
  - **Description**: A natural-text representation of the intent of the sharing group.
  - **Make the sharing group selectable (active)**: A sharing group can be made passive by unchecking this setting. All events and attributes will continue to adhere to a passive sharing group's distribution setting, however, the sharing group will not be offered as a selectable option when setting the distribution of events/attributes. The idea behind this is that ad-hoc sharing groups that have outlived their purpose can be retired in order to reduce the clutter in the UI.

### New Sharing Group

<table>
<thead>
<tr>
<th>Type</th>
<th>Name</th>
<th>UUID</th>
<th>Extend</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>local</td>
<td>Org221</td>
<td></td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>remote</td>
<td>CIRCL</td>
<td></td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>remote</td>
<td>CthulhuSFRL.be</td>
<td></td>
<td>☐</td>
<td></td>
</tr>
</tbody>
</table>

[Previous page] [Next page]
Organisations: The second page of the tool contains the distribution list containing all organisations directly named as a member of the sharing group

Add Local/remote organisations: The organisations are split into two lists (shown as two tabs in the tool) for local and known remote/external organisations. Local organisations are expected to have at least one local user on the instance whilst remote organisations do not. Synchronising with remote instances will create remote organisations whenever a new event is received of a yet unknown organisation. Remote organisations can always be converted to local organisations - this becomes interesting if a user of an external organisation requests access to your MISP instance.

Extend checkmark: Checking the extend checkmark makes the selected organisation an extender of the sharing group, meaning they can edit the sharing group. It is expected of these trusted partners that they adhere to the "releasable to" tag set on the general page. The organisation creating the sharing group is always included as an extender.

New Sharing Group

<table>
<thead>
<tr>
<th>MISP Instances</th>
<th>Summary and Save</th>
</tr>
</thead>
</table>

Enable roaming mode for this sharing group (pass the event to any connected instance where the sync connection is tied to an organisation contained in the SG organisation list).

<table>
<thead>
<tr>
<th>Name</th>
<th>URL</th>
<th>All orgs</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local instance</td>
<td><a href="http://192.168.56.101">http://192.168.56.101</a></td>
<td>✔️</td>
<td></td>
</tr>
<tr>
<td>other</td>
<td><a href="http://192.168.56.105">http://192.168.56.105</a></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
- **Servers**: The third page of the tool describes the MISP instances the data marked with the given sharing group are allowed to be synchronised with. Keep in mind that any user that can view an event on a given instance will have the right to pull the event to their home instance, as they are part of the sharing group, however the organisation distribution list will still apply.
  - **Enable roaming mode**: This setting will disable the server list and rely purely on the organisation list to distribute the data. If a sync connection's host organisation is in the organisation distribution list the instance becomes eligible for synchronising the data marked with the sharing group. Generally this carries a slightly higher risk as it relies on administrators correctly setting up the host organisation settings, but it removes the need to know the specific instance urls where the event/attribute should flow.
  - **Add instance**: Add an instance to the distribution list from the sync instances set up under sync actions -> servers
  - **All orgs**: Checking this checkmark will automatically include all organisations on the given instance in the sharing group. This means that in order to exchange with all users of a linked community, one does not need to know every organisation residing on the instance. This also means that the distribution list will not include the organisation names, which can be interesting for certain privacy sensitive communities.

### New Sharing Group

<table>
<thead>
<tr>
<th>General</th>
<th>Organisations</th>
<th>MISP Instances</th>
<th>Summary and Save</th>
</tr>
</thead>
</table>

**General**: You are about to create the **Financial Sector** sharing group, which is intended to be releasable to **Financial Sector organisations**.

**Local organisations**: It will be visible to **all organisations on this instance**, from which **Org221** can extend the sharing group.

**External organisations**: It will also be visible to **CIRCL, CthulhuSPRL.be**, out of which **nobody** can extend the sharing group.

**Synchronisation**: Furthermore, events are automatically pushed to: **other**

You can edit this information by going back to one of the previous pages, or if you agree with the above mentioned information, click Submit to create the Sharing group.
● **Summary:** Once everything is set up, MISP will summarise the sharing group in a highlighted text page, which is highly advised to be reviewed before submitting the new sharing group/editing the sharing group. Mistakes in the sharing group settings can lead to organisations that should not be involved in the sharing group getting access or organisations receiving unwanted editing rights to the sharing group. Keep in mind that even if you have submitted a sharing group, it is not propagated until an event/attribute receives the sharing group as the selected distribution.

**Populate from Template**

Templates allow users to rapidly populate events of a specific type by filling out a series of pre-defined fields. Users with template creation privileges can create new templates for their organisations or for all organisations on their instance. If you are interested in template creation, please refer to the templating section. For users trying to populate an event, after clicking on the populate from template button, you'll be presented with a list of all currently accessible templates. Pick the one that best describes the event that you are creating.
Once you have chosen a template, you’ll be presented with the actual form contained within. Make sure you fill out as many fields as possible with the mandatory fields - marked by a star in a bracket such as this: (*) - are filled out.

Templates are divided into sections, with each section having a title and a description in addition to a series of fields. Each field can be an attribute or a file attachment field. An attribute field has the following components:

<table>
<thead>
<tr>
<th>Field: Artifacts Dropped (File) (*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description: Insert any data you have on dropped files here.</td>
</tr>
<tr>
<td>Types:</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

This describes the Artifacts Dropped (File) using one or several (separated by a line-break) of the following types: filename
- **Field:** The name of the field along with an indication if the field is mandatory.
- **Description:** A short description of the field.
- **Types:** The value(s) that are valid for the field. In the case of several types being shown here, you can enter value(s) matching any one of the types, or in the case of a batch import field, any mixture of the given types.
- **Text field:** This field can either be a single line textfield or a multi-line text area. For the former, enter a single value of the above indicated type, whilst for the latter you can paste a list of values separated by line-breaks.

**Freetext Import Tool**

![Freetext Import Tool](image)
If you have a list of indicators that you would like to quickly generate attributes out of then the Free-text import tool is just what you need. Simply paste a list of indicators (separated by line-breaks into this tool).

### Freetext Import Results

Below you can see the attributes that are to be created based on the results of the free-text import. Make sure that the categories and the types are correct, often default options will be offered based on an incomplete or automatic resolution.

<table>
<thead>
<tr>
<th>Value</th>
<th>Category</th>
<th>Type</th>
<th>ID</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>192.168.0.1</td>
<td>Network activity</td>
<td>p-dst</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>domain.com</td>
<td>Network activity</td>
<td>hostname</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>chrome.exe</td>
<td>Payloaded delivery</td>
<td>filename</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>
Since there are several category / type combinations that can be valid for a lot of values, MISP will suggest the most common settings. You can alter the category / type / IDS fields manually if you disagree with the results. The options will be restricted to valid category/type combinations for the value that you have entered.

If any correlation is already found, these correlations will be displayed in the result page.

**Attribute Replace Tool**

If you would like to create and maintain an event with a set of indicators that receives removals and additions over time, then the attribute replace tool might make this task easier for you.
Simply select the desired category / type combination, choose whether the attributes should be marked for IDS exports and paste the new list of indicators into the textarea. Attributes of the same category/type that are present in the event but not the new list will be removed, values in the pasted list that do not yet exist as attributes will be created as attributes and values that already have matching attributes will be left untouched.

**Add attachments to the event**

You can also upload attachments, such as the malware itself, report files from external analysis or simply artifacts dropped by the malware. Clicking on the add attachment button brings up a form that allows you to quickly attach a file to the event. The following fields need to be filled out:

### Add Attachment

**Category**

![Antivirus detection](image)

**Distribution**

![All communities](image)

**Contextual Comment**

![Choose File](image) | ![No file chosen](image) | ![Malware](image)

**Upload**
- **Category**: The category is the same as with the attributes, it answers the question of what the uploaded file is meant to describe.
- **Distribution**: This drop-down list allows you to control who will be able to see this attachment. The distribution is inherited by attributes: the most restrictive setting wins. For more info, refer to the distribution information in the event section.
- **Upload field**: By hitting browse, you can browse your file system and point the uploader to the file that you want to attach to the attribute. This will then be uploaded when the upload button is pushed.
- **Malware**: This check-box marks the file as malware and as such it will be zipped and passworded, to protect the users of the system from accidentally downloading and executing the file. Make sure to tick this if you suspect that the file is infected, before uploading it.
- **Contextual Comment**: You can add some comments to the attribute that will not be used for correlation but instead serves as purely an informational field.

**Propose a change to an event that belongs to another organisation**

If you would like to propose a modification to an attribute, or to propose some additional attributes to the creating organisation, you can do this with the buttons that replace the add attribute field on the left and the edit icon on the right end of each listed attribute in the event view. The creating organisation of the event will be able to see any proposals and discard or accept the changes.
If the organisation that has created the event is on another connected server, they will be able to accept the proposal once they initiate a pull and receive your proposal. After this they can republish the event, sending the altered attribute back to your instance.

**Populate from OpenIOC**

It is also possible to attempt to import the data contained in a .ioc file. The import tool will attempt to gather as many IndicatorItems within nested logical operators as possible without breaking their validity. After the procedure is done, you'll be presented with a list of successfully created attributes and a list of failed IndicatorItems as well as a graph of the .ioc file.

13 attributes created successfully, 6 indicators could not be mapped and saved.

### Successfully added attributes:

<table>
<thead>
<tr>
<th>Uuid</th>
<th>Category</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>b9ef2599-cc99-4463-81d9-52800545e16e</td>
<td>Other</td>
<td>other</td>
<td>FileItem/PEInfo/Sections/Section/Name: stub</td>
</tr>
<tr>
<td>15b6c4b6-a2a1-4735-bfe8-0c8c17eee38</td>
<td>Payload installation</td>
<td>filename</td>
<td>mdmexport3 PNF</td>
</tr>
<tr>
<td>e57d9a9b-9e9e-41ec-87c0-ee677ed2e20</td>
<td>Payload installation</td>
<td>filename</td>
<td>mxmltest3 PNF</td>
</tr>
<tr>
<td>8347f5e2-c575-4e5c-9d43-5eae57b66f</td>
<td>Payload installation</td>
<td>filename</td>
<td>cxml5c PNF</td>
</tr>
</tbody>
</table>
Visualisation:

__OR
- __FileItem/PEInfo/Sections/Section/Name contains: stub
- __FileItem/PEInfo/Sections/Section/Name contains: main
- __FileItem/PEInfo/Sections/Section/Name contains: mainc32
- __FileItem/PEInfo/Sections/Section/Name contains: mainc320
- __FileItem/PEInfo/Sections/Section/Name contains: mainc3200
- __FileItem/PEInfo/Sections/Section/Name contains: mainc32000
- __FileItem/PEInfo/Sections/Section/Name contains: mainc320000

__AND
- __FileItem/Driver/AttachedToDriverName contains: fl.sys
- __FileItem/Driver/AttachedToDriverName contains: rsm.sys
- __FileItem/Driver/AttachedToDriverName contains: as.sys
- __FileItem/Driver/AttachedToDriverName contains: fast.sys

__AND
- __FileItem/FileName contains: mnc0.sys
- __FileItem/Security/DigitalSignature/Certificates/Subject contains: Realtek Semiconductor Corp

__AND
- __FileItem/FileName contains: mnx.sys
- __FileItem/Security/DigitalSignature/Certificates/Subject contains: Realtek Semiconductor Corp

__AND
- __Registry/Path contains: HKEY_LOCAL_MACHINE\SYSTEM\ControlSet001\Services\RcClrImagePath
- __Registry/Path contains: mnc0.sys

__AND
- __Registry/Path contains: HKEY_LOCAL_MACHINE\SYSTEM\ControlSet001\Services\MncNetImagePath
- __Registry/Path contains: mnx.sys
Populate from ThreatConnect

You can also import the data from a ThreatConnect export csv file. The following columns are used by the import tool (and are thus mandatory fields to select during the export):

- Type
- Value
- Confidence
- Description
- Source

The result will be a list of attributes that get added to the currently selected event, each of which will be marked with a comment that indicates that its origin being from a ThreatConnect import.

Adding IOCs from a PDF report

You can use a generic script called IOC parser or use a script published by Palo Alto to convert IOC parser output to a MISP event: [report_to_misp](https://github.com/PaloAltoNetworks-BD/report_to_misp/).

Publish an event
Once all the attributes and attachments that you want to include with the event are uploaded / set, it is time to finalise its creation by publishing the event (click on publish event in the event view). This will alert the eligible users of it (based on the private-controls of the event and its attributes/attachments and whether they have auto-alert turned on), push the event to instances that your instance connects to and propagate it further based on the distribution rules. It also readies the network related attributes for NIDS signature creation (through the NIDS signature export feature, for more information, go to the export section.). There is an alternate way of publishing an event without alerting any other users, by using the "publish (no email)" button. This should only be used for minor edits (such as correcting a typo).

If your instance has background jobs enabled then the event might not get published immediately.

**Browsing past events**

The MISP interface allows the user to have an overview over or to search for events and attributes of events that are already stored in the system in various ways.

**To list all events**

On the left menu bar, the option "List events" will generate a list of the last 60 events. While the attributes themselves aren't shown in this view, the following pieces of information can be seen:
● **Published:** Already published events are marked by a checkmark. Unpublished events are marked by a cross.
● **Org:** The organisation that created the event.
● **Owner Org:** The organisation that owns the event on this instance. This field is only visible to administrators.
● **ID:** The event’s ID number, assigned by the system when the event was first entered (or in the case of an event that was synchronized, when it was first copied over - more on synchronisation in chapter xy)
● **Tags:** Tags that are assigned to this event.
● **#Attr.:** The number of attributes that the event has.
● **Email:** The e-mail address of the event’s reporter. This is not visible to regular users. Organisation administrators can see the e-mail addresses of their own organisation’s users.
● **Date:** The date of the attack.
● **Threat Level:** The risk level of the attack, the following levels are possible:
  * Low: General Malware
  * Medium: Advanced Persistent Threats (APTs)
  * High: Sophisticated APTs and 0day exploits
  * Undefined: This field can be left undefined and edited at a later date.
● **Analysis:** Indicates the current stage of the analysis for the event, with the following possible options:
  * Initial: The analysis is just beginning
  * Ongoing: The analysis is in progress
  * Completed: The analysis is complete
● **Info:** A short description of the event, starting with an internal reference number.
● **Distribution:** This field indicates what the sharing privileges of the event. For details, refer to the distribution information in the event section.
● **Actions:** The controls that the user has to view or modify the event. The possible actions that are available (depending on user privileges - click here to find out more about privileges):
  * **Publish:** Publishing an event will have several effects: The system will e-mail all eligible users that have auto-alert turned on (and having the needed privileges for the event, depending on its private classification) with a description of your newly published event, it will be flagged as published and it will be pushed to all eligible servers (to read more about synchronisation between servers, have a look at the section on connecting servers)
  * **Edit:** Clicking on the edit button will bring up the same same screen as the one used for creating new events, with the exception that all fields come filled out with the data of the event that is being edited. The distribution of an event can only be edited if you are a user of the creating organisation of the event. For more information on this view, refer to the section on creating an event.
  * **Delete:** The system will prompt you before erasing the unwanted event.
  * **View:** Will bring up the event view, which besides the basic information contained in the event list, will also include the following:

**Filters**

It is also possible to filter the events shown by clicking on the small magnifying glass icons next to the field names and entering a filter term.

**Event view**
### Test Event 3

<table>
<thead>
<tr>
<th>Event ID</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>User</td>
<td>82142021-1004-4106-9050-471e0360602a</td>
</tr>
<tr>
<td>Org</td>
<td>Google</td>
</tr>
<tr>
<td>Contributors</td>
<td>arg</td>
</tr>
<tr>
<td>Tags</td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>2014-03-05</td>
</tr>
<tr>
<td>Threat Level</td>
<td>High</td>
</tr>
<tr>
<td>Analysis</td>
<td>Indeterminate</td>
</tr>
<tr>
<td>Distribution</td>
<td>All communities, this will spread the event with an MSP (minimal spread) from this server to the next</td>
</tr>
<tr>
<td>Description</td>
<td>Test Event 3</td>
</tr>
<tr>
<td>Published</td>
<td>Yes</td>
</tr>
</tbody>
</table>

#### Related Events

2014-03-05 (1) 2014-03-05 (2) 2014-03-27 (4)

### Event Details

<table>
<thead>
<tr>
<th>Date</th>
<th>Category</th>
<th>Type</th>
<th>Value</th>
<th>Comment</th>
<th>Related Events</th>
<th>IDS</th>
<th>Distribution</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014-03-05</td>
<td>Network activity</td>
<td>d-src</td>
<td>1.1.1.1</td>
<td>An IP address</td>
<td>2.1</td>
<td>Yes</td>
<td>All</td>
<td><img src="#" alt="Details" /></td>
</tr>
<tr>
<td>2014-03-05</td>
<td>Network activity</td>
<td>s-res</td>
<td>2.2.2.2</td>
<td>An IP address</td>
<td>Yes</td>
<td>All</td>
<td><img src="#" alt="Details" /></td>
<td></td>
</tr>
<tr>
<td>2014-03-05</td>
<td>Web activity</td>
<td>d-src</td>
<td>3.3.3.3</td>
<td>An IP address</td>
<td>4</td>
<td>Yes</td>
<td>All</td>
<td><img src="#" alt="Details" /></td>
</tr>
</tbody>
</table>
General Event Information

- **ID**: The ID of the event.
- **Uuid**: In order to avoid collisions between events and attributes (during for example a sync) a Uuid is assigned that uniquely identifies each of them.
- **Org**: The organisation that has originally created the event. The logo (if it exists on the server, alternatively a string) representing the organisation is also shown in the right upper corner.
- **Contributors**: Shows a list of the organisations that have contributed to the event via proposals. If you click any of the logos listed here, you'll get redirected to a filtered event history view, including only the changes made by the organisation.
- **Tags**: A list of tags associated with the event. Clicking a tag will show a list of events with the same tag attached. The little cross next to each tag allows you to remove the tag from the event, whilst the ' + ' button allows you to assign a tag. For the latter two options to be visible, you have to have tagging permission.
- **Date**: The date of detection, set by the user that creates the event, not to be confused with the creation date of the event.
- **Threat Level**: The assigned threat level of the event.
- **Analysis**: The status of the analysis.
- **Distribution**: This shows the distribution rules applied to this event, controlling whether only the creating organisation can see (Your organisation only) it or everyone on the instance (This community only). The two remaining settings allow the event to be propagated to organisations on remote connected instances.
- **Info**: A short description of the event itself. Make sure not to put information in here that could be used for correlation purposes and be better suited as an Attribute.
- **Published**: Whether the event has been published or not. Publishing allows the attributes of the event to be used for all eligible exports and it notifies users that have subscribed to the event alerts. Also, a publish initiates a push to all eligible instances.

List of Related Events The list of relations is shown on the right hand side of the general event information. Events can be related by having one or more attributes that are exact matches. For example, if two events both contain a source IP attribute of 11.11.11.11 then they are related. The list of events that are related the currently shown one, are listed under "Related Events", as links (titled the related event's date and ID number) to the events themselves.

Data Element Toggles You can control some of the data that is shown on this page using three toggles. The elements that can be disabled are the pivot threads, the attributes (and proposals) and the Discussions. You can collapse these elements and then expand them again using the same button.

Pivot Threads While moving from event to event through the relation links (a process that we refer to as pivoting), you create a path that shows which events you have traversed. This path is reset by leaving the event view and navigating elsewhere in the application or by deleting the root pivot element. Each event visited is represented by a bubble in the pivot thread graph, connected by lines that show how the user has arrived at the next connected event. It is possible to jump back to an earlier relation and pivot to another event through that, creating branches in the graph. The currently selected event is coloured blue in the graph. If you would like to delete an element from the graph (including all of elements that branch off of it) just click on the small x within a pivot bubble. For a deletion to be possible the following conditions have to be met:
- The pivot element to be deleted cannot be on the path that leads to the currently selected event
- The pivot element residing in the graph’s root can always be deleted - this will simply reset the current pivot thread

Attributes and Proposals A list of all attributes and proposals attached to the event. The fields for each of them only differ in the available actions and the fact that for proposals to attributes all fields are blank that would stay unchanged if the proposal was accepted (for example, proposing a change to an attribute to turn the IDS flag on will have all fields
apart from the IDS flag blank in the proposal. Here is a list of what each of the fields represents:

- **Date**: The date of the last modification to the attribute. Proposals don't have a date of last edit.
- **Category**: The category of the attribute or proposal. For a list of possible categories visit the section on categories and types.
- **Type**: The type of the attribute or proposal. For a list of possible categories visit the section on categories and types.
- **Value**: The value or value-pair of the attribute. This is the main payload of the attribute, which is described by the category and type columns. For certain types of attributes that are made up of value-pairs the two parts will be split by a pipe (|), such as for filename|md5. The value field(s) are used by the correlation engine to find relations between events. In value-pair attributes both values are correlated individually.
- **Comment**: Attributes can have a contextual comment to further describe the attribute. These comments are not used for correlation and are purely informative.
- **Related Events**: A list of the event IDs that also contain an attribute with the same value.
- **IDS**: Flags an attribute as an indicator of compromise, allowing it to be included in all of the eligible exports.
- **Distribution**: Defines the distribution of the attribute individually. An attribute can have a different distribution level than the event. In any case, the lowest distribution level of the two is used.
- **Actions**: The user can interact with the events through these buttons, which will be further described in the next portion of the guide as they differ for attributes and proposals.

Depending on the colour coding of the row, you can have an attribute, a proposal to the event or a proposal to an attribute:

- **Attributes**: Each uncoloured line represents an Attribute.
- **Proposals to an Event**: Each gray line at the end of the list represents a Proposal to an event. These are proposals for a new attribute, mostly unrelated to any of the currently existing attributes. If the creator of the event accepts one of these a new attribute will be created.
- **Proposals to an Attribute**: Each attribute can have several edit proposals. These will be placed right below the attribute that the proposal affects and - as with the event proposals - is coloured grey. The original attribute's row is coloured blue if a proposal exists for it.

Using the modify button will bring up the attribute creation view, with all data filled out with the attribute's currently stored data.

**Event Discussion Thread**

Each event has its own assigned discussion where users (that are eligible to see the event) can participate in an open discussion. The users are anonymised in the messages, all that other users will see is their user ID number and their organisation. To post a message on the Event Discussion, either use the reply button on a previous post or use the quickresponse field at the bottom of the page. Each post is made up of the following:

- **Date**: The date when the post was created.
- **Post navigation**: This should the post's ID as well as a link to jump to the top of the discussion thread on the page itself.
- **Organisation logo**: If such an image exists for the organisation that has posted the message, then the logo is shown.
- **Message**: The body of the post itself. This can also include automatically generated links to other events and threads as well as show quoted test in embedded bubbles. Editing an event will also append a post with a message indicating that it was edited together with the timestamp of the edit.
- **User**: The e-mail address of the poster if he/she is from the organisation as the current user. Alternatively a generated sting is shown that includes the user ID of the user, so that his/her e-mail address could remain hidden whilst still being identifiable.
- **Action buttons**: Edit, Delete and Reply. The first two of the three options are only available to the poster of the message or a site admin. Quoting a post will automatically include the original message in [quote] tags.
Here is a list of the various tools you can use while using this feature:

- **Pagination:** There are 5 posts visible on each event page, if there have been more messages posted, use the previous and next button to navigate through the thread. This will not reload the rest of the page.
- **Discussion Tags:** Users can quote something by encapsulating it in [quote][/quote] tags, they can create a link to another event with the [event][/event] tags or to another discussion thread with [thread][/thread].
- **Quick Post:** Adding a post will take the user to a separate add Post page, something that can be a bit of an inconvenience. To avoid this, there is a quick post button, where users can add messages on the fly without having to reload the page. On top of the quick post field, 3 buttons allow users to generate quote, event and thread tags quickly.

**Event History**

View the logs of the event that show how the event has changed over time, including the contribution from other organisations in the form of proposals. There are two ways to get to this view, either by clicking on View Event History on the side menu of an event view, or by clicking on a contributing organisation's logo on the event view. The latter will show a restricted form of the logs, showing only Proposals created by the selected organisation. The fields shown in this view are as described as follows:

- **Org:** The logo (or in the lack thereof a string representation) of the organisation.
- **Action:** Each entry in the log happens during an action, such as the creation, modification or deletion of data and some special actions (such as accepting a proposal). This field shows which action caused the entry to be created.
- **Model:** As described above, a log entry is generated on certain actions. This field shows which type of data was affected that caused the log entry to be created (such as a change to the event, the creation of an attribute, the discarding of a proposal, etc).
- **Title:** This is a short description of the change itself and it is not nearly as detailed as the information administrators get in the audit logs. However, for attributes and proposals the category / type and value of the created or edited attribute is shown.
- **Created:** The date and time of the log entry's creation.

**Listing all attributes**

Apart from having a list of all the events, it is also possible to get a list of all the stored attributes in the system by clicking on the list attributes button. The produced list of attributes will include the following 5 fields:
- **Event**: This is the ID number of the event that the attribute is tied to. If an event belongs to your organisation, then this field will be coloured red.
- **Org**: The organisation that has created the event.
- **Category**: The category of the attribute, showing what the attribute describes (for example the malware's payload). For more information on categories, go to section xy.
- **Type**: The type of the value contained in the attribute (for example a source IP address). For more information on types, go to section xy.
- **Value**: The actual value of the attribute, describing an aspect, defined by the category and type fields of the malware (for example 11.11.11.11).
- **Comment**: An optional contextual comment attached to the attribute.
- **IDS**: Shows whether the attribute has been flagged for NIDS signature generation or not.
- **Actions**: A set of buttons that allow you to view the event that the attribute is tied to, to edit the attribute (using the same view as what is used to set up attributes, but filled out with the attribute's current data) and a delete button.

### Searching for attributes

Apart from being able to list all events, it is also possible to search for data contained in the value field of an attribute, by clicking on the “Search Attributes” button.

**Search Attribute**

You can search for attributes based on contained expression within the value, event ID, submitting organisation, category and type.

For the value, event ID and organisation, you can enter several search terms by entering each term as a new line. To exclude things from a result, use the NOT operator (!) in front of the term.

- **Containing the following expressions**
- **Being attributes of the following event IDs**
- **From the following organisation(s)**

<table>
<thead>
<tr>
<th>Type</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL</td>
<td>ALL</td>
</tr>
</tbody>
</table>

- Only find valid IDs

**Search**
This will bring up a form that lets you enter one or several search strings (separate search strings with line breaks) that will be compared to the values of all attributes, along with options to narrow down the search based on category and type. The entered search string has to be an exact match with (the sub-string of) a value. A second text field makes it possible to enter event IDs for events that should be excluded from the search (again, each line represents an event ID to be excluded). The third text field allows the user to restrict the results to attributes from certain organisations or to attributes not created by certain other organisations, using the above described syntax. The list generated by the search will look exactly the same as listing all attributes, except that only the attributes that matched the search criteria will be listed (to find out more about the list attributes view, click here). The search parameters will be shown above the produced list and the search terms will be highlighted. The last option is a checkbox that restricts all of the results to attributes that are marked as IDS signatures.

### Attributes

Results for all attributes with the value containing "1.1.1":

<table>
<thead>
<tr>
<th>Event</th>
<th>Org</th>
<th>Category</th>
<th>Type</th>
<th>Value</th>
<th>Comment</th>
<th>ID</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td></td>
<td>network activity</td>
<td>1-20</td>
<td>1.1.1.1</td>
<td>An IP address</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>network activity</td>
<td>22-sust</td>
<td>1.1.1.1</td>
<td>The same IP address</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

Using the System
Updating and modifying events and attributes

Every event and attribute can easily be edited. First of all it is important to find the event or attribute that is to be edited, using any of the methods mentioned in the section on browsing past events. Once it is found, the edit button (whether it be under actions when events/attributes get listed or simply on the event view) will bring up the same screen as what is used to create the entry of the same type (for an event it would be the event screen as seen here, for an attribute the attribute screen as described here). You can also simply double-click on the event you wish to edit and enter the edit mode. Keep in mind that editing any event (either directly or indirectly through an attribute) will unpublish it, meaning that you’ll have to publish it (through the event view) again once you are done.

Tagging

As described earlier, users with tagging rights can arbitrarily tag events using tags chosen from a pool of available options. If you have tagging privileges and would like to create a new tag, navigate to Event Actions - Add Tag. You'll be presented with the following form:

Add Tag

<table>
<thead>
<tr>
<th>Name</th>
<th>Colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSINT</td>
<td>#000000</td>
</tr>
</tbody>
</table>

Add
Fill out the following fields:

- **Name**: Pick a name for the tag. Try to use consistent naming conventions across your instance, to avoid confusion.
- **Colour**: You can choose a colour for the tag by clicking on the colour field and using the colour picker tool. Try to avoid having duplicate or similar looking colours to help avoid confusion.

**Templating**

Newer users can easily be overwhelmed by having to manually populate events with attributes without any guidance. What sort of information should go into the event? What should be the category and type of a C2 IP? Templates allow users to use simple forms to populate events. Even though MISP ships with a few default templates, it is possible for users (with the appropriate templating privilege) to create new templates for their users or for all users of the instance. Let's look at how you can create a template. First go to Event Actions - Add Template to go to the event creation view.

**Create Template**

Name

OSINT Report

Tags

OSINT

Event Description

Use this template to create OSINT events.

Share this template with others

Create
The following fields have to be filled out:

- **Name**: The name of the template should describe what type of an event it should be used to generate attributes.
- **Tags**: You can attach tags to the template - an event populated using the template would automatically receive the tag(s). Add new tags using the + button. If you change your mind about a tag you can remove it with the cross next to the tag name.
- **Event Description**: A short description about the events that this template should be used for.
- **Share this template with others**: The template can be set to be usable by any organisation on the instance or only by the one that has created it.

Once the skeleton template is created, you can start populating the template with data. There are 3 types of elements that can be used during the creation of a template: attribute, file and text elements. Text elements divide the template into sections with an information field, followed by all of the attribute/file fields until a new text field is read. Don't worry about the order of the elements during creation, they can be re-arranged using drag & drop. Let's look at the 3 element types:

**Attribute Element**

![Add Attribute Element To Template](image-url)
The following fields have to be filled out:

- **Name**: The field name that will be presented to the user.
- **Description**: A brief description of the element. Make sure that you provide sufficient information to the user to make it obvious what is expected.
- **Category**: The category used for any attributes created using this template element.
- **Type**: The type or complex type used for any attributes created using this template element. Complex types allow for several related types to be used on data entry. For example, a "file" complex type element allows for filenames and hashes.
- **Use Complex types**: If the category permits it, switch to a complex type using this checkbox.
- **Automatically mark for IDS**: If checked, any attributes generated using this element will be marked for IDS exporting.
- **Mandatory element**: If the element is marked as mandatory, then the template form can only be submitted by users if this field is filled out.
- **Batch import element**: Allow for multiple values to be entered (separated by line breaks).

**File Element**

![Add File Element To Template](image-url)
The following fields have to be filled out:

- **Name**: The field name that will be presented to the user.
- **Description**: A brief description of the element. Make sure that you provide sufficient information to the user to make it obvious what is expected.
- **Category**: The category to be used by all attachments uploaded through this element.
- **Malware**: If the uploaded files are malicious and should be encrypted and password protected, mark this checkbox.
- **Mandatory element**: If it should be required to upload an attachment, check this checkbox.
- **Batch import element**: Ticking this checkbox allows users to upload several files using this element.

**Text Element**
The following fields have to be filled out:

- **Name:** The name of the section that will be presented to the user.
- **Text:** The description of the section. Explain briefly to the user what the following attribute/file elements will be dealing with. There are several ways to split a template into sections, try to have ease of use in mind while creating it.

**Contacting the reporter**

To get in touch with the reporter of a previously registered event, just find the event for which you would like to contact the reporter by either finding it on the list of events, by finding it through one of its attributes or by finding it through a related event. Once the event is found and the event view opened, click the button titled "Contact Reporter". This will bring up a view where you can enter your message that is to be e-mailed to all members of the reporting organisation that subscribe to receiving such reports or the reporting user himself. Along with your message, the detailed information about the event in question will be included in the e-mail.

**Contact organization reporting event 12**

You are about to contact the organization that reported event 12.
Feel free to add a custom message that will be sent to the reporting organization.
Your email address and details about the event will be added automatically to the message.

Message

Submit only to person
By selecting this option, you will contact the creator of this event only.

Submit
By default, the message will be sent to every member of the organisation that posted the event in the first place, but if you tick the check-box below the message field before sending the mail, only the person that reported the event will get e-mailed.

**Automation**

It is possible to quickly and conveniently export the data contained within the system using the automation features located in the main menu on the left (available to users with authentication key access only). There are various sets of data that can be exported, by using the authentication key provided by the system (also shown on the export page). If for whatever reason you would need to invalidate your current key and get a new one instead (for example due to the old one becoming compromised) just hit the reset link next to the authentication key in the export view or in your "my profile" view. To find out about the various export formats and the usage within the automation functions, please read the page on the API's usage.

**Exporting data**

For users that do not have authentication key access, an alternate export feature is available that relies on your interactive login to the site. To access these, just use the export menu button to the left and you'll be presented with a list of export options. Depending on your server's configuration, you will be presented with one of two possible pages, depending on whether you have background processing enabled or not.

**Export page with background jobs disabled**

The page will list a set of export formats that you can immediately download as a file. Just click on the desired export format and MISP will start collecting all the data that you will receive in a file. Keep in mind that this can be a lengthy process. To avoid having to wait, consult with your instance's site administrator about enabling the background processing.
Export page with background jobs enabled

If the background jobs are enabled, you'll be redirected to a different version of the export page. Here you will see a table with all of the major export formats and the current status of the cached export files. Keep in mind that these are generated on an organisation basis, so even though others have generated newer export caches your organisation may have an outdated cache. You can simply issue a generate command (by clicking the "Generate" button) on the desired export type and the background workers will start fetching and assembling your cache. A progress bar will show the progress of the export process. Once done, you can click "Download" to download the freshly generated cache file. If the cache is already up to date from before, then you don't have to regenerate the cache, just click on the "download" button. You may have noticed that the TEXT export only has a generate button - this is because TEXT exports are made up of a lot of types of exports, all of which get generated together. To download any of these files, just click on any of the attribute types at the bottom of the table. A quick description of each of the fields in the table:

- **Type**: The type of the export (such as XML, Suricata, MD5, etc.).
- **Last Update**: The generation date of the current cache for the given export type.
- **Description**: A description of the export format.
- **Outdated**: This compares the cache generation date to the last timestamp when an event was updated and lets you know whether the cache is outdated or not.
- **Progress**: Shows the progress of the last initiated generation process.
- **Actions**: Download or Generate the given cache with these buttons.

### Export

Export functionality is designed to automatically generate signatures for intrusion detection systems. To enable signature generation for a given attribute, the attribute field must be set to Yes. Note that not all attribute types are applicable for signature generation currently. You can only export HSID signature generation for n-domains, host names, user agents, and each set generation for MD5 hashes. We ask for your patience as support for new attribute types is planned.

Simply click on any of the following buttons to download the appropriate data:

<table>
<thead>
<tr>
<th>Type</th>
<th>Last Update</th>
<th>Description</th>
<th>Outdated</th>
<th>Progress</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>XML</td>
<td>N/A</td>
<td>Click this to download all events and attributes that have access to a specific element, in a custom XML format.</td>
<td>Yes</td>
<td>Completed</td>
<td><img src="download_button.png" alt="Download" /> <img src="generate_button.png" alt="Generate" /></td>
</tr>
<tr>
<td>CSV/L</td>
<td>N/A</td>
<td>Click this to download all attributes that are indicators and that you have access to a specific element, in CSV format.</td>
<td>Yes</td>
<td>Completed</td>
<td><img src="download_button.png" alt="Download" /> <img src="generate_button.png" alt="Generate" /></td>
</tr>
<tr>
<td>Suricata</td>
<td>N/A</td>
<td>Click this to download all network-related attributes that you have access to under the Suricata L2/3 format. Only published events and attributes marked as Signature are exported. Administration is able to maintain a whitelist containing host, domain name and IP numbers to exclude from the ICDS export.</td>
<td>Yes</td>
<td>Completed</td>
<td><img src="download_button.png" alt="Download" /> <img src="generate_button.png" alt="Generate" /></td>
</tr>
<tr>
<td>Short</td>
<td>N/A</td>
<td>Click this to download all network-related attributes that you have access to under the Short L2/3 format. Only published events and attributes marked as Signature are exported. Administration is able to maintain a whitelist containing host, domain name and IP numbers to exclude from the ICDS export.</td>
<td>Yes</td>
<td>Completed</td>
<td><img src="download_button.png" alt="Download" /> <img src="generate_button.png" alt="Generate" /></td>
</tr>
<tr>
<td>MD5</td>
<td>2 weeks ago</td>
<td>Click on one of these two buttons to download an ICDS signature for each file-related attribute. This list can be used to feed forensic software when searching for suspicious files. Only published events and attributes marked as ICDS Signature are exported.</td>
<td>Yes</td>
<td>Completed</td>
<td><img src="download_button.png" alt="Download" /> <img src="generate_button.png" alt="Generate" /></td>
</tr>
<tr>
<td>SSHA</td>
<td>N/A</td>
<td>Click on one of these two buttons to download an SSHA checksums container for each file-related attribute. This list can be used to feed forensic software when searching for suspicious files. Only published events and attributes marked as ICDS Signature are exported.</td>
<td>Yes</td>
<td>Completed</td>
<td><img src="download_button.png" alt="Download" /> <img src="generate_button.png" alt="Generate" /></td>
</tr>
<tr>
<td>TEXT</td>
<td>N/A</td>
<td>Click on one of the buttons below to download all the attributes with the matching type. This list can be used to feed forensic software when searching for suspicious files. Only published events and attributes marked as ICDS Signature are exported.</td>
<td>Yes</td>
<td>Completed</td>
<td><img src="download_button.png" alt="Download" /> <img src="generate_button.png" alt="Generate" /></td>
</tr>
</tbody>
</table>
Exporting search results and individual events

Apart from the options offered by the export pages, it's also possible to export all events involved in a search attribute result table, by using the "Download results as XML" button on the left menu bar.

Attributes

Results for all attributes with the value containing "1.1.1":

Page 1 of 1, showing 1 records out of 1 total, starting on record 1, ending on 1
Each event's view has its own export feature, both as an XML export and as a .ioc file. To reach these features, just navigate to an event and use the appropriate buttons on the right side.

<table>
<thead>
<tr>
<th>Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Results for all attributes with the value containing &quot;1.1.1&quot;:</td>
</tr>
<tr>
<td>Event</td>
</tr>
<tr>
<td>--------</td>
</tr>
<tr>
<td>7</td>
</tr>
</tbody>
</table>

Page 1 of 1, showing 1 records out of 1 total, starting on record 1, ending on 1.
Connecting to other instances

Apart from being a self contained repository of attacks/malware, one of the main features of MISP is its ability to connect to other instances and share (parts of) its information. The following options allow you to set up and maintain such connections.

Setting up a connection to another server

In order to share data with a remote server via pushes and pulls, you need to request a valid authentication key from the hosting organisation of the remote instance. When clicking on List Servers and then on New Server, a form comes up that needs to be filled out in order for your instance to connect to it. The following fields need to be filled out:

Add Server

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base URL</td>
<td><a href="https://www.friendlymisp.com">https://www.friendlymisp.com</a></td>
</tr>
<tr>
<td>Organization</td>
<td>Org_name</td>
</tr>
<tr>
<td>Authkey</td>
<td></td>
</tr>
<tr>
<td>Push</td>
<td>✔️</td>
</tr>
<tr>
<td>Pull</td>
<td>✔️</td>
</tr>
<tr>
<td>Self Signed</td>
<td></td>
</tr>
<tr>
<td>Certificate file</td>
<td>No file chosen</td>
</tr>
</tbody>
</table>
- **Base URL**: The URL of the remote server.
- **Organization**: The organisation that runs the remote server. It is very important that this setting is filled out exactly as the organisation name set up in the bootstrap file of the remote instance.
- **Authkey**: The authentication key that you have received from the hosting organisation of the remote instance.
- **Push**: This check-box controls whether your server is allowed to push to the remote instance.
- **Pull**: This check-box controls whether your server can request to pull all data from the remote instance.
- **Self Signed**: Ticking this checkbox will allow syncing with instances using self-signed certificates.
- **Certificate File**: If the instance that you want to connect to has their entire own certificate chain, you can use this to import a .pem file with it and override CakePHP’s standard root CA file.

**If you are an administrator**, trying to allow another instance to connect to your own, it is vital that two rules are followed when setting up a *synchronisation* account:

- The *synchronisation* user has to have the sync permission and full read/write/publish privileges turned on
- Both the *sync user* and the organisation setting in your instance's Config/bootstrap.php file have to match the organisation identifier of the hosting organisation.

**Browsing the currently set up server connections and interacting with them**

If you ever need to change the data about the linked servers or remove any connections, you have the following options to view and manipulate the server connections, when clicking on List Servers: (you will be able to see a list of all servers that your server connects to, including the base address, the organisation running the server the last pushed and pulled event IDs and the control buttons.).

![Servers Table]

Base 1 of 1 showing 1 records out of 1 total (displaying records 1 to 1)

---

91
- **Editing the connection to the** : By clicking edit a view, that is identical to the new instance view, is loaded, with all the current information of the instance pre-entered.
- **Deleting the connection to the instance** : Clicking the delete button will delete the link to the instance.
- **Push all** : By clicking this button, all events that are eligible to be pushed on the instance you are on will start to be pushed to the remote instance. Events and attributes that exist on the far end will be updated.
- **Pull all** : By clicking this button, all events that are set to be pull-able or full access on the remote server will be copied to this instance. Existing events will not be updated.

**Rest API**

The platform is also **RESTful**, so this means that you can use structured format (XML or JSON) to access Events data.

**Requests**

Use any HTTP compliant library to perform requests. You can choose which format you would like to use as input/output for the REST calls by specifying the Accept and Content-Type headers.

The following headers are required if you wish to receive / push XML data: **Authorization**: your authorisation key  
**Accept**: application/xml  
**Content-Type**: application/xml

The following headers are required if you wish to receive / push JSON data: **Authorization**: your authorisation key  
**Accept**: application/json  
**Content-Type**: application/json

The following table shows the relation of the request type and the resulting action:

<table>
<thead>
<tr>
<th>HTTP format</th>
<th>URL</th>
<th>Controller action invoked</th>
</tr>
</thead>
<tbody>
<tr>
<td>GET</td>
<td>/events</td>
<td>EventsController::index()</td>
</tr>
<tr>
<td>GET</td>
<td>/events/123</td>
<td>EventsController::view(123)</td>
</tr>
<tr>
<td>POST</td>
<td>/events</td>
<td>EventsController::add()</td>
</tr>
<tr>
<td>PUT</td>
<td>/events/123</td>
<td>EventsController::edit(123)</td>
</tr>
<tr>
<td>DELETE</td>
<td>/events/123</td>
<td>EventsController::delete(123)</td>
</tr>
<tr>
<td>POST</td>
<td>/events/123</td>
<td>EventsController::edit(123)</td>
</tr>
</tbody>
</table>

*Attaches are included using base64 encoding below the **data** tag.

**Example - Get single Event**

In this example we fetch the details of a single Event (and thus also his Attributes). The request should be:

```
GET https://your_misp_url/events/123
```

And with the HTTP Headers: **Accept**: application/xml  
**Authorization**: your_api_key

The response you're going to get is the following data:

```xml
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<response>
  <Event>
    <id>57</id>
    <org>NCIRC</org>
    <date>2014-03-04</date>
    <threat_level_id>1</threat_level_id>
    <info>Code monkey doing code monkey stuff</info>
  </Event>
</response>
```
Example - Add new Event

In this example we want to add a single Event. The request should be:

POST https://your_misp_url/events
Accept: application/xml
Authorization: your_api_key

And the request body:

<Event>
  <date>2014-03-04</date>
  <threat_level_id>1</threat_level_id>
  <info>Something concise</info>
  <published>1</published>
  <analysis>1</analysis>
  <distribution>1</distribution>
  <Attribute>
    <type>other</type>
    <category>Artifacts dropped</category>
    <to_ids>1</to_ids>
    <event_id>57</event_id>
    <distribution>1</distribution>
    <timestamp>1393327600</timestamp>
    <comment>This is an Attribute</comment>
    <value>Some_attribute</value>
  </Attribute>
  <RelatedEvent />
</Event>

The response you're going to get is the following data:

HTTP/1.1 100 Continue
HTTP/1.1 200 Continue
Date: Tue, 04-Mar-2014 15:00:00
Server: Apache/2.2.22 (Ubuntu) PHP/5.4.9-4ubuntu2.3
X-Powered-By: PHP/5.4.9-4ubuntu2.3
The response from requesting an invalid page

<?xml version = "1.0" encoding = "UTF-8"?>
<response>
  <name>Not Found</name>
  <url>/The_meaning_of_life</url>
</response>
Delegation

In information sharing, privacy of the reporting organisation can be important in such case as:

- an incident doesn't want to be linked to a potential victim.
- to avoid the relation of an organisation with the information shared.

MISP has a functionality to delegate the publication and completely remove the binding between the information shared and its organisation. If you want to publish an event without you or your organisation being tied to it, you can delegate the publication to an other organisation. That also means they will take the ownership of the event.

[warning] You need to have a role with "Delegation access" to delegate an event.
[warning] Also activate MISP.delegation parameter in your instance.

Send a delegation request

To do so, you first need to put the distribution of the event as "your organisation only".

<table>
<thead>
<tr>
<th>Distribution</th>
<th>Your organisation only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Info</td>
<td>Delegate me</td>
</tr>
<tr>
<td>Published</td>
<td>No</td>
</tr>
<tr>
<td>Sightings</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Activity</td>
<td></td>
</tr>
<tr>
<td>Correlation</td>
<td>Enabled [disable]</td>
</tr>
</tbody>
</table>
Otherwise the delegation option will not be available.

<table>
<thead>
<tr>
<th>Publish Event</th>
<th>Publish (no email)</th>
<th>Contact Reporter</th>
<th>Download as...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Info</td>
<td>Distribution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Published</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sightings</td>
<td>0 (0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correlation</td>
<td>Enabled (disable)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
When the "Delegate Publishing" option is clicked, a pop-up will show up:

**Delegate the publishing of the Event to another organisation**

Warning: You are about to request another organisation to take ownership of this event.

- **Target Organisation**
  - [Select organisation]

- **Desired Distribution**
  - [Recipient decides]

**Message to the recipient organisation**

[Options: Yes, No]
Here you can choose

- to which organisation you wish to delegate the event among all those registered on the server. For this example we are going to ask Setec Astronomy to publish the event for us.
- The distribution option you would like to put on the event. You can let the other organisation (called "recipient") choose if you don't mind it. For this example, we will request the recipient to share it to all communities, but it is only a suggestion, and the recipient will be able to modify the diffusion setting if wanted.
Finally you can leave a free message to the recipient organisation.
Once the request is sent, a message will appear on the event to remind you of your request.

<table>
<thead>
<tr>
<th>Delegation request</th>
<th>You have requested that Setec Astronomy take over this event (View request details)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Published</td>
<td>No</td>
</tr>
<tr>
<td>Sightings</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Activity</td>
<td></td>
</tr>
<tr>
<td>Correlation</td>
<td>Enabled ( disable)</td>
</tr>
</tbody>
</table>
You can also see more details by clicking on "View request details"

Event Delegation

Request details
Your organisation is requesting Setec Astronomy to take over this event.

Message from requester

Discard  Cancel
And you can also discard the request yourself, by using this pop-up or the link in the left menu.

**Answer a delegation request**

As the recipient organisation, you will then receive the request of delegation. You will be notified by a red circle around the envelope on the top right of the screen.
When you click it, you will be redirected as usual on the dashboard, where we can see one delegation request on the left frame.

Dashboard

Notifications
- Proposals: 0 (View)
- Events with proposals: 0 (View)
- Delegation requests: 1 (View)

Changes since last visit
- Events updated: 571 (View)
- Events published: 571 (View)
- Reset
Clicking on the "view" link then redirect to an event list view showing all the events other organisations wish to delegate to your organisation. Here we only see one event, from Acme Factory.

### Events

<table>
<thead>
<tr>
<th>Published</th>
<th>Org</th>
<th>Id</th>
<th>Clusters</th>
<th>Tags</th>
<th>#Attr.</th>
<th>#Corr.</th>
<th>#Sightings</th>
<th>#Posts</th>
<th>Date</th>
<th>Threat Level</th>
<th>Analysis</th>
<th>Info</th>
<th>Distribution</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓</td>
<td>Acme</td>
<td>1006</td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2017-03-23</td>
<td>High</td>
<td>Initial</td>
<td>Delegate</td>
<td>Organisation</td>
<td>Not published</td>
</tr>
</tbody>
</table>
And here are the metadata of the so called event.

### Delegate me

<table>
<thead>
<tr>
<th>Event ID</th>
<th>1095</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uuid</td>
<td>59c3895a-6b68-4c50-a33a-49299504210f</td>
</tr>
<tr>
<td>Org</td>
<td>Acme Finance</td>
</tr>
<tr>
<td>Contributors</td>
<td>Acme Finance</td>
</tr>
</tbody>
</table>

**Tags**

**Date** | 2017-03-23

**Threat Level** | High

**Analysis** | Initial

**Distribution** | Your organisation only

**Info** | Delegate me

**Published** | No

**Sightings** | 0 (0)

**Activity** | Acme Finance has requested that you take over this event. [View request details]

**Correlation** | Enabled
You will be able to view the details by clicking the so called link.

**Event Delegation**

**Request details**

*Acme Finance* is requesting *your organisation* to take over this event.
The desired distribution level is *All communities*

**Message from requestor**
This is a delegation test

[Accept]  [Discard]  [Cancel]
If your role have publishing rights, you will be able to manage the delegation request by using one of the two links in the left menu.

You can either discard it:

**Delete Delegation Request**

*Are you sure you would like to discard the request by Acme Finance to take ownership of Event #1113?*

[Yes] [No]
Or accept the delegation:

**Accept Delegation Request**

Are you sure you would like to accept the request by Acme Finance to take ownership of Event #1113?

Yes  No
Please notice that the distribution desired by the requester will not automatically be set on the event, which will stay as distributed to your own organisation only if the parameter is not modified.
MISP Extended Events

MISP can now extend an event (starting from version 2.4.90). This allows users to build full blown events that extend an existing event, giving way to a combined event view that includes a sum total of the event along with all extending events. More
Administration

- Users
  - Adding a new user
  - Listing all users
  - Contacting a user
- Organisations
  - Adding a new organisation
  - Listing all organisation
  - Merge organisations
- Roles
  - Adding a new role
  - Listing roles
- Tools
- Server Settings
- Server settings and diagnostics
  - Worker types
  - Workers dead
- Import Blacklist
  - Adding and modifying entries
- Import Regexp
  - The purpose of Import Regexp entries
  - Adding and modifying entries
- Managing the Signature whitelist
  - Whitelisting an address
  - Managing the list
- Using MISP logs
  - Browsing logs
  - Searching Logs
- Background Processing
  - Command Line Tools for the Background Workers
  - Monitoring the Background Processes
  - Scheduling Jobs and Recurring Jobs
- Various administration tips & tricks
  - Default sharing level
  - Adding organisation logos
  - The _schdrl_ worker is not starting
  - How to redirect HTTP to HTTPS
  - Increase max size of Samples / other files
  - Support & feature requests
  - More information in the notification emails about new events
  - Get top API users
  - MISP Logs
  - Logging of failed authentication attempts
  - Clearing expired sessions
  - Troubleshooting MISP not connecting to redis but redis-cli working
  - Errors about fields or tables
- Jobs ~ TODO: Explain differences Default, Email, Cache
- Scheduled Tasks
- MISP Backup
Administration

- Users
- Organisations
- Roles
- Tools
- Server Settings
- Jobs
- Scheduled Tasks

[warning] This page is under modification for updating the content. Current status:

- [x] Users - Reviewed/Updated on: ?
- [x] Organisations - Reviewed/Updated on: ?
- [x] Roles - Reviewed/Updated on: ?
- [x] Tools - Reviewed/Updated on: ?
- [] Server Settings - Reviewed/Updated on: ?
- [] Jobs aka. Background processing - Reviewed/Updated on: ?
- [] Scheduled Tasks aka. Background processing - Reviewed/Updated on: ?

Users

As an admin (not to be confused with Org Admin), you can set up new accounts for users, edit user profiles, delete them, or just have a look at all the viewers’ profiles. Organisation admins (Org Admin) are restricted to executing these actions exclusively within their own organisation’s users only.

Adding a new user

To add a new user, click on the Add User button in the administration menu to the left and populate the fields available in the loaded view:
Admin Add User

Email

Set password

Password

Confirm Password

Organisation

Role

Choose organisation

admin

Authkey

Nids Sid

Sync user for

Not bound to a server

GPG key

Fetch GPG key

Receive alerts when events are published

Receive alerts from “contact reporter” requests

Disable this user account

Submit
• **Email:** The user’s e-mail address, this will be used as his/her login name and as an address to send all automated e-mails as well as e-mails sent by contacting the user as the reporter of an event.

• **Set password:** Tick the box if you want to define a temporary user-password for the user. If you don't, you should use the action button 'reset password' in the 'List Users' view to generate one and send it by email to the user.

• **Password:** *This textbox is displayed only when 'Set password' is ticked.* A Temporary password for the user that he/she should change after the first login. Ensure that password pass the MISP password policy.

• **Confirm Password:** *This textbox is displayed only when 'Set password' is ticked.* This should be an exact copy of the Password field.

• **Organisation:** A drop-down list enables you to choose an organisation for the user. To learn more about organisation, click here.

• **Roles:** A drop-down list allows you to select a role-group that the user should belong to. Roles define user privileges attributed to the user. To learn more about roles, click here.

• **Authkey:** This is assigned automatically and is the unique authentication key of said user (he/she will be able to reset this and receive a new key). It is used for exports and for connecting one server to another, but it requires the user to be assigned to a role that has auth permission enabled.

• **NIDS Sid:** ID of network intrusion detection systems.

• **Sync user for:** Use this option for granting the user the right to synchronize the event between MISP server. This option is available for admin, Org Admin and Sync user role.

• **Gpgkey:** The key used to encrypt e-mails sent through the system.

• **Fetch GnuPG key:** Fetch GnuPG public key.

• **Receive alerts when events are published:** This option will subscribe the new user to automatically generated e-mails whenever an event is published.

• **Receive alerts from "contact reporter" requests:** This option will subscribe the new user to e-mails that are generated when another user tries to get in touch with an event’s reporting organisation that matches that of the new user.

• **Disable this user account:** Tick it if you want to disable this user account. (preferred to removing an account)

### Listing all users

To list all current users of the system, just click on List Users under the administration menu to the left. A view will load containing a list of all users and the following columns of information:
- **Id**: The user's automatically assigned ID number.
- **Org**: The organisation that the user belongs to.
- **Email**: The e-mail address (and login name) of the user.
- **Authkey**: Unique authentication key of the user.
- **Autoalert**: Shows whether the user has subscribed to auto-alerts and is continuing to receive mass-emails regarding newly published events that he/she is eligible for.
- **Contactalert**: Shows whether the user has the subscription to contact reporter e-mails directed at his/her organisation is turned on or off.
- **Gpgkey**: Shows whether the user has entered a GnuPG key yet.
- **Nids Sid**: Displays the currently assigned NIDS ID.
- **Termsaccepted**: This flag indicates whether the user has accepted the terms of use or not.
- **Last login**: Date of last login.
- **Disabled**: Displays the user status. Enabled or disabled.
- **Action Buttons**: There are 4 options available: reset the password, edit the user, delete the user or display a user's information. These options are also available on the left menu.
  - **Reset Password**: Use this action to reset a password. If you've created a new user without a password, tick the 'First time registration' checkbox to send a welcome message. Otherwise a reset password message will be sent.

![Reset Password Dialog](image-url)
Edit the user: Same options of create user's view. Only a few options are available here:
- **Terms accepted:** Indicates whether the user has accepted the terms of use already or not.
- **Change Password:** Setting this flag will require the user to change password after the next login.
- **Reset Auth Key:** Use this link for generate a new AuthKey.
• Delete the user: If you want to delete a user. (Note: disabling is the preferred method)
- **Display the user**: Display all user's information.

### User

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Id</td>
<td>2</td>
</tr>
<tr>
<td>Org</td>
<td>MSP</td>
</tr>
<tr>
<td>Role</td>
<td>Publisher</td>
</tr>
<tr>
<td>Email</td>
<td><a href="mailto:user@msp.training">user@msp.training</a></td>
</tr>
<tr>
<td>Active</td>
<td>No</td>
</tr>
<tr>
<td>Created at</td>
<td>2014/06/04 10:39</td>
</tr>
<tr>
<td>Password change</td>
<td>No</td>
</tr>
<tr>
<td>Disabled</td>
<td>No</td>
</tr>
<tr>
<td>Terms accepted</td>
<td>Yes</td>
</tr>
</tbody>
</table>

### Related Events

- No related events.
Contacting a user

Site admins can use the "Contact users" feature to send all or individual user an e-mail. Users that have a GnuPG key set will receive their e-mails encrypted. When clicking this button on the left, you'll be presented with a form that allows you to specify the type of the e-mail, who it should reach and what the content is using the following options:

Contact User(s)

Messaging - here's a quick guide on how this feature works
You can use this view to send messages to your current or future users or send them a temporary password.
- When adding a new user to the system, or when you want to manually reset the password for a user, just use the "Send temporary password" setting.
- After selecting the action, choose who the target of the e-mails should be (all users, single user or a user not yet in the system).
- You can then specify (if eligible) what the e-mail address of the target is (for existing users you can choose from a dropdown menu).
- In the case of a new user, you can specify the future user's GnuPG key, to send him/her new key in an encrypted e-mail.
- The system will automatically generate a message for you, but it is also possible to write a custom message. If you tick the check box, but don't worry about sending a temporary password manually, the system will do that for you, right after your custom message.

<table>
<thead>
<tr>
<th>Action</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>Custom message</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Recipient</th>
<th>Recipient Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>A single user</td>
<td><a href="mailto:admin@hisp.training">admin@hisp.training</a></td>
</tr>
</tbody>
</table>

Enter a custom message

Message

Submit
- **Action**: This defines the e-mail type, which can be a custom message or a password reset. Password resets automatically include a new temporary password at the bottom of the message and will automatically change the user's password accordingly.

- **Subject**: In the case of a custom e-mail, you can enter a subject line here.

- **Recipient**: The recipient toggle lets you contact all your users, a single user (which creates a second drop-down list with all the e-mail addresses of the users) and potential future users (which opens up a text field for the e-mail address and a text area field for a GnuPG public key).

- **Custom message checkbox**: This is available for password resets or for welcome message, you can either write your own message (which will be appended with a temporary key and the signature), or let the system generate one automatically.

Keep in mind that all e-mails sent through this system, in addition to your own message, will be signed in the name of the instance's host organisation's support team, the e-mail will also include the e-mail address of the instance’s support (if the contact field is set in the bootstrap file), and will include the instance's GnuPG signature for users that have a GnuPG key set (and thus are eligible for an encrypted e-mail).
GnuPG instance key is the GnuPG key used by the MISP instance and which is only used to sign notification. The GnuPG key used in the MISP instance must not be used anywhere else and should not be valuable.

Organisations

Each user belongs to an organisation. As admin, you can manage these organisations.

Adding a new organisation

To add a new organisation, click on the "Add Organisation" button in the administration menu to the left and fill out the following fields in the view that is loaded:

New Organisation

If the organisation should have access to this instance, make sure that the Local organisation setting is checked. If you would only like to add a known external organisation for inclusion in sharing groups, uncheck the Local organisation setting.

Local organisation

Mandatory fields.

Organisation Identifier

Brief organisation identifier: no image uploaded for this identifier

UUID

Paste UUID or click generate

Generate UUID

A brief description of the organisation

A description of the organisation that is purely informational.

The following fields are all optional

Nationality

Sector

Not specified

For example “financial”.

Type of organisation

Text description of the org

Contacts

You can add some contact details for the organisation here, if applicable:

Submit
- **Local organisation**: If the organisation should have access to this instance, tick the checkbox. If you would only like to add a known external organisation for inclusion in sharing groups, uncheck it.
- **Organisation Identifier**: Name your organisation. If you want to add a picture, you should add a file on the webserver using the 'Server Settings menu'. Picture should have the same name. To learn more about server settings menu, click here.
- **Uuid**: Unique identifier. If you want to share organisation between MISP multi-instance, use the same Uuid.
- **A brief description of the organisation**: A word for describing the organisation.
- **Nationality**: A drop-down list for selecting the country of organisation.
- **Sector**: Define the sector of organisation (financial, transport, telecom…)
- **Type of organisation**: Define the type of the organisation.
- **Contacts**: You can add some contact details for the organisation.

### Listing all organisation

To list all current organisation of the system, just click on List Organisations under the administration menu to the left. There are 3 tabs in this view to filter local organisations, remote organisations or both. The default view displays local organisations. For all views the following columns of information are available:

### Local organisations having a presence on this instance

<table>
<thead>
<tr>
<th>Local organisations having a presence on this instance</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>Local</td>
<td>Name</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
- **Id:** The organisation's automatically assigned ID number.
- **Logo:** Picture of the organisation.
- **Name:** Name of the organisation.
- **Uuid:** Unique identifier of organisation. Share this Uuid when using it between MISP's multi-instance.
- **Description:** Description of the organisation.
- **Nationality:** Country of the organisation.
- **Sector:** Sector defined for the organisation.
- **Type:** Type of organisation.
- **Contacts:** Contacts of organisation.
- **Added by:** Login of the user who added the organisation
- **Local:** Flag defined if the organisation is local or remote.
- **Actions:** There are 3 options available: edit, delete or display an organisation's information. These options are also available on the left menu when you are on the display view.
  - **Edit Organisation:** Same options of create organisation's view.

```
Edit Organisation

If the organisation should have access to this instance, make sure that the Local organisation setting is unchecked.
If you would only like to add a known external organisation for inclusion in sharing groups, uncheck the Local organisation setting.

[ ] local organisation

Identify fields. Leave the UUID field empty if the organisation doesn't have a UUID from another instance.

Organization Identifier

CNC3L

Uuid

50f8e5e-2de0-4de0-954f-47d9000e1213

Generate Uuid

A brief description of the organisation

A description of the organisation that is purely informational:


the following fields are optional:

Nationality

[ ] Not specified

Sector

For example "financial"

Type of organisation

Free text description of the org:

Contacts

You can add some contact details for the organisation here, if applicable:


Submit
```
Delete Organisation: Use this option for deleting organisation.

Are you sure you want to delete MISP?

OK  Cancel
- **View Organisation**: Use this option to display information about the selected organisation. In this view, you can display the user belongs to this organisation and events published by organisation.
Merge organisations

Merge Organisation menu is available only in the organisation view, under the left menu. Merge one organisation to another will transfer all users and data from one to another. On the left the organisation to merge, on the right the target one.

![Merge Organisation Interface]

Warning: Merging an organisation into another will transfer all users and data belonging to the organisation to another.

<table>
<thead>
<tr>
<th>Organisation type</th>
<th>Target Local Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local</td>
<td>MISP</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Organisation to be merged</th>
<th>Organisation to be merged into</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID: 2</td>
<td>ID: 1</td>
</tr>
<tr>
<td>Name: CPOD</td>
<td>Name: MISP</td>
</tr>
<tr>
<td>UUID: 590e5a2e-21e4-405e-8f4f-47a9890a2310f</td>
<td>UUID: f5e27f-1a54-42bf-8d0b-04e5ca5a3632</td>
</tr>
<tr>
<td>Type: Local</td>
<td>Type: local</td>
</tr>
</tbody>
</table>
Roles

Privileges are assigned to users by assigning them to rule groups. Rule groups use one of four options determining what they can do with events as well as four additional privilege elevation settings. These are the four options to edit the full options available in the Roles section: Read Only, Manage My Own Events, Manage Organisation Events, Manage & Publish Organisation Events. A short description is provided below:

- **Read Only**: This allows a user to browse events that his organisation has access to, but doesn't allow any changes to be made to the database.
- **Manage My Own Events**: The second option, gives its users the rights to create, modify or delete their own events, but they cannot publish them.
- **Manage Organization Events**: Allows users to create events or modify and delete events created by a member of their organisation.
- **Manage & Publish Organisation Events**: This last setting, gives users the right to do all of the above and also to publish the events of their organisation.

The extra permissions are defined below:

- **Perm Admin**: Gives the user limited administrator privileges, this setting is used for an organisation's admins.
- **Perm Audit**: Grants access to the logs. With the exception of site admins, only logs generated by the user's own org are visible.
- **Perm Tagger**: Allows a user to assign tags to events.
- **Perm Sharing Group**: Grant access to edit or create sharing groups.
- **Perm Site Admin**: Gives the user full administrator privileges, this setting is used for site admins.
- **Perm Auth**: This setting enables the authentication key of the role’s users to be used for rest requests.
- **Perm Tag Editor**: Grants access to edit or create tags.
- **Perm Delegate**: Grant access to delegate the publication of an event to a third-party organization.
- **Perm Sync**: This setting enables the users of the role to be used as a synchronisation user. The authentication key of this user can be handed out to the administrator of a remote MISP instance to allow the synchronisation features to work.
- **Perm Regexp Access**: Allows users who have this permission enabled to edit the regular expression table. Be careful when giving out this permission, incorrect regular expressions can be very harmful (infinite loops, loss of data, etc.).
- **Perm Template**: Grant access to create or modify templates.

Adding a new role

When creating a new role, you will have to enter a name for the role to be created and set up permissions (as described above) using the drop-down menu and related check-boxes.
Listing roles

By clicking on the List Roles button, you can view a list of all currently registered roles and a list of the permission flags enabled for each. In addition, you can find buttons that allow you to edit and delete said roles. Keep in mind that you will need to first remove every member from a role before you can delete it.

### Roles

<table>
<thead>
<tr>
<th>ID</th>
<th>Name</th>
<th>Permissions</th>
<th>Admin</th>
<th>Site Admin</th>
<th>Sync Actions</th>
<th>List Actions</th>
<th>Add Key Access</th>
<th>Regen Actions</th>
<th>Tagger</th>
<th>Tag Editor</th>
<th>Template Editor</th>
<th>Sharing</th>
<th>Delegations</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Automation user</td>
<td>Manage &amp; Publish Organization Events</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
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<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>2</td>
<td>City Admin</td>
<td>Manage &amp; Publish Organization Events</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
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<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>4</td>
<td>Publisher</td>
<td>Manage &amp; Publish Organization Events</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>7</td>
<td>Read Only</td>
<td>Manage Organization Events</td>
<td></td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>5</td>
<td>User</td>
<td>Manage Organizations Events</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>1</td>
<td>admin</td>
<td>Manage &amp; Publish Organization Events</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
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<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
</tbody>
</table>

Page 1 of 1, showing 7 records out of 1 total, starting on record 1, ending on 7
• **Id:** The role's automatically assigned ID number.

• **Name:** The name of role.

• **Permission:** One of the 4 permissions: Read Only, Manage My Own Events, Manage Organization Events, Manage & Publish Organisation Events.

• **Extra Permissions flag:** Flag for each extra permissions: Admin, Site Admin, Sync Actions, Audit Actions, Auth key access, Regex Actions, Tagger, Tag Editor, Template Editor, Sharing Group Editor, Delegations Access.

• **Action Buttons:** There are 2 options available: Edit Role or Delete it.

  • **Edit Role:** Same options of create role's view.

### Edit Role

<table>
<thead>
<tr>
<th>Name</th>
<th>Permissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automation user</td>
<td>Manage &amp; Publish Organization</td>
</tr>
<tr>
<td>Perm Admin</td>
<td>Perm Site Admin</td>
</tr>
<tr>
<td>Perm Audit</td>
<td>Perm Auth</td>
</tr>
<tr>
<td>Perm Tagger</td>
<td>Perm Tag Editor</td>
</tr>
<tr>
<td>Perm Sharing Group</td>
<td>Perm Delegate</td>
</tr>
</tbody>
</table>

**Edit**
- **Delete Role**: Use this option to delete a role.

Are you sure you want to delete Read Only?
Tools

MISP has a couple of administrative tools that help administrators keep their instance up to date and healthy. The list of these small tools can change rapidly with each new version, but they should be self-explanatory. Be sure to check this section after each upgrade to a new version, just in case there’s a new upgrade script in there - though if this is the case it will be mentioned in the upgrade instructions.

Administrative actions

- removeInvalidValuesToNewVersion
- removeInvalidValuesToAttributes
- Reset the attribute counts (events need to have no validation issues)
- Recompute attributes
- Recompute proposals
- Verify keys (Check whether every event contains a valid key)
- Verify Certificates (Check whether every event's certificate is valid)
- Expand Organization length
- Convert key fields to text
- Check if a large number of events were added up to now (this function will change here in "text")
- Fix duplicate attributes
- Remove duplicate events
- Type attributes
- Clean empty tables of potentially malicious entries
- Index tables
- Fix empty sharing group DB
- Remove empty type attributes

Upgrading a 2.3 instance to 2.4

Follow this list of instructions in order to upgrade. Make sure to run each step before running the next step.

1. Upgrade to 2.4 - run the upgrade 2.3 to 2.4 script only
2. If complete successfully, run the 2.4-to-2.4 (clean) script to remove the fields that are specific to 2.3. Make sure that the migration of the data to the 2.4 format was successful (see also check the result in the audit log). If you have any issues with the 2.4 upgrade script, please report any SQL errors in the column log; run the script.
Server Settings

Since version 2.3, MISP has a settings and diagnostics tool that allows site-admins to manage and diagnose their MISP installation. You can access this by navigating to Administration - Server settings.

Server settings and diagnostics

<table>
<thead>
<tr>
<th>Server settings</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall health</td>
<td>Critical, your MISP instance requires immediate attention. The overall health of your instance depends on the most severe unresolved issues.</td>
</tr>
<tr>
<td>Critical settings incorrectly set</td>
<td>Critical settings</td>
</tr>
<tr>
<td>Recommended settings incorrectly set</td>
<td>Recommended settings</td>
</tr>
<tr>
<td>Optional settings incorrectly set</td>
<td>Optional settings</td>
</tr>
<tr>
<td>Critical issues revealed by the diagnostics</td>
<td>Critical issues detected</td>
</tr>
</tbody>
</table>
The settings and diagnostics tool is split up into several aspects, all accessible via the tabs on top of the tool. For any unset or incorrectly set setting, or failed diagnostic a number next to the tab name will indicate the number and severity of the issues. If the number is written with a red font, it means that the issue is critical. First, let’s look at the various tabs:

- **Overview**: General overview of the current state of your MISP installation
- **MISP settings**: Basic MISP settings. This includes the way MISP handles the default settings for distribution settings, whether background jobs are enabled, etc
- **GnuPG settings**: GnuPG related settings.
- **Proxy settings**: HTTP proxy related settings.
- **Security settings**: Settings controlling brute-force protection and the application's salt key.
- **Misc settings**: Settings controlling debug options, please ensure that debug is always disabled on a production system.
- **Diagnostics**: The diagnostics tool checks if all directories that MISP uses to store data are writeable by the apache user. Also, the tool checks whether the STIX libraries and GnuPG are working as intended.
- **Workers**: Shows the background workers (if enabled) and shows a warning if they are not running. Admins can also restart the workers here.
- **Download report**: Download a report in JSON format, compiled of all of the settings visible in the tool.

<table>
<thead>
<tr>
<th>Priority</th>
<th>Setting</th>
<th>Value</th>
<th>Description</th>
<th>Local Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical</td>
<td>MISP caurl</td>
<td>openssl.cnf</td>
<td>Full list of the application of the STIX libraries and GnuPG. This can be used to ensure the configuration is set correctly.</td>
<td></td>
</tr>
<tr>
<td>Critical</td>
<td>MISP cadata</td>
<td>default</td>
<td>The email address that MISP should use for all notifications.</td>
<td></td>
</tr>
<tr>
<td>Critical</td>
<td>MISP defa, default distinction</td>
<td>default</td>
<td>The default distribution for events (S3).</td>
<td></td>
</tr>
<tr>
<td>Critical</td>
<td>MISP defa, default distinction</td>
<td>default</td>
<td>The default distribution for events (S3).</td>
<td></td>
</tr>
</tbody>
</table>

Server settings
Each of the setting pages is a table with each row representing a setting. Coloured rows indicate that the setting is incorrect / not set and the colour determines the severity (red = critical, yellow = recommended, green = optional). The columns are as follows:

- **Priority**: The severity of the setting.
- **Setting**: The setting name.
- **Value**: The current value of the setting.
- **Description**: A description of what the setting does.
- **Error Message**: If the setting is incorrect / not set, then this field will let the user know what is wrong.

### Server settings

<table>
<thead>
<tr>
<th>Worker</th>
<th>Worker List</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>cache</td>
<td>spirox/xtb1334/cache</td>
<td>OK</td>
</tr>
<tr>
<td>default</td>
<td>spirox/xtb1331/default</td>
<td>OK</td>
</tr>
<tr>
<td>email</td>
<td>spirox/xtb1331/email</td>
<td>OK</td>
</tr>
</tbody>
</table>

**Restart all workers** This will restart all of the workers and refresh the page. Keep in mind, this process can take a few seconds to complete, so refresh the page again in 5-10 seconds to see the correct results.
The workers tab shows a list of the workers that MISP can use. You can restart workers using the "restart all workers" button. If the button doesn't work, make sure that the workers were started using the apache user. This can however only be done using the command line, refer to the INSTALL.txt documentation on how to let the workers automatically start on each boot.

- **Worker Type**: The worker type is determined by the queue it monitors. MISP currently has 5 queues (cache, default, prio, email and a special schedr queue).
- **Worker Id**: The ID is made up of the machine name, the PID of the worker and the queue it monitors.
- **Status**: Displays OK if the worker is running. If the schedr worker is the only one not running, make sure that you copy the config file into the cakearesque directory as described in the INSTALL.txt documentation.

**Worker types**

cache

Role: Interdependence:

default

Role: Interdependence:

email

Role: Interdependence:

prio

Role: Interdependence:

scheduler Role: Interdependence:

**Workers dead**

Even if the workers are dead, any actions related to them are on-hold. Nothing is lost. Simply restarting the worker will resume any operations.

You can either relaunch them via the UI or manually by running `sudo -u www-data bash /var/www/MISP/app/Console/worker/start.sh` on the CLI. For reference, below is the script in question.

```bash
#!/usr/bin/env bash

# Check if run as root
if [ "$EUID" -eq 0 ]; then
    echo "Please DO NOT run the worker script as root"
    exit 1
fi

# Extract base directory where this script is and cd into it
cd ""$({%/})"
../../../cake CakeResque.CakeResque stop --all
../../../cake CakeResque.CakeResque start --interval 5 --queue default
../../../cake CakeResque.CakeResque start --interval 5 --queue prio
../../../cake CakeResque.CakeResque start --interval 5 --queue cache
../../../cake CakeResque.CakeResque start --interval 5 --queue email
../../../cake CakeResque.CakeResque startscheduler --interval 5

exit 0
```

**Import Blacklist**
It is possible to ban certain values from ever being entered into the system via an event info field or an attribute value. This is done by blacklisting the value in this section.

Adding and modifying entries

Administrators can add, edit or delete blacklisted items by using the appropriate functions in the list’s action menu and the menu on the left.

Import Regexp

The system allows administrators to set up rules for regular expressions that will automatically alter newly entered or imported events (from GFI Sandbox).

The purpose of Import Regexp entries

They can be used for several things, such as unifying the capitalisation of file paths for more accurate event correlation or to automatically censor the usernames and use system path variable names (changing C:\Users\UserName\Appdata\Roaming\file.exe to %APPDATA%\file.exe). The second use is blocking, if a regular expression is entered with a blank replacement, any event info or attribute value containing the expression will not be added. Please make sure the entered regexp expression follows the preg_replace pattern rules as described here.

Adding and modifying entries

Administrators can add, edit or delete regular expression rules, these "expressions" are made up of a regex pattern that the system searches for and a replacement for the detected pattern.
Managing the Signature whitelist

The signature whitelist view, accessible through the administration menu on the left, allows administrators to create and maintain a list of addresses that are whitelisted from ever being added to the NIDS signatures. Addresses listed here will be commented out when exporting the NIDS list.

Whitelisting an address

While in the whitelist view, click on New Whitelist on the left to bring up the "add whitelist" view to add a new address.

Managing the list

When viewing the list of whitelisted addresses, the following data is shown: The ID of the whitelist entry (assigned automatically when a new address is added), the address itself that is being whitelisted and a set of controls allowing you to delete the entry or edit the address.

<table>
<thead>
<tr>
<th>Id</th>
<th>Name</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><a href="http://www.futuremark.com">www.futuremark.com</a></td>
<td></td>
</tr>
</tbody>
</table>
Using MISP logs

Users with audit permissions are able to browse or search logs that MISP automatically appends each time certain actions are taken (actions that modify data or if a user logs in and out). Generally, the following actions are logged:

- **User**: Creation, deletion, modification, Login / Logout
- **Event**: Creation, deletion, modification, publishing
- **Attribute**: Creation, deletion, modification
- **ShadowAttribute**: Creation, deletion, Accept, Discard
- **Roles**: Creation, deletion, modification
- **Blacklist**: Creation, deletion, modification
- **Whitelist**: Creation, deletion, modification
- **Regexp**: Creation, deletion, modification

Browsing logs

Listing all the log entries will display the following columns generated by the users of your organisation (or all organisations in the case of site admins):

Logs

<table>
<thead>
<tr>
<th>#</th>
<th>Email</th>
<th>Org</th>
<th>Created</th>
<th>Action</th>
<th>Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1526</td>
<td><a href="mailto:admin@domain.com">admin@domain.com</a></td>
<td>John</td>
<td>2013-05-28 10:24:07</td>
<td>Add</td>
<td>Attribute [A] from [Event]</td>
<td>the user has added a new attribute</td>
</tr>
<tr>
<td>1527</td>
<td><a href="mailto:admin@domain.com">admin@domain.com</a></td>
<td>John</td>
<td>2013-05-28 10:24:07</td>
<td>Add</td>
<td>Attribute [A] from [Event]</td>
<td>the user has added a new attribute</td>
</tr>
<tr>
<td>1528</td>
<td><a href="mailto:admin@domain.com">admin@domain.com</a></td>
<td>John</td>
<td>2013-05-28 10:24:07</td>
<td>Add</td>
<td>Attribute [A] from [Event]</td>
<td>the user has added a new attribute</td>
</tr>
<tr>
<td>1529</td>
<td><a href="mailto:admin@domain.com">admin@domain.com</a></td>
<td>John</td>
<td>2013-05-28 10:24:07</td>
<td>Add</td>
<td>Attribute [A] from [Event]</td>
<td>the user has added a new attribute</td>
</tr>
</tbody>
</table>

Administration
- **Id**: The automatically assigned ID number of the entry.
- **Email**: The e-mail address of the user whose actions triggered the entry.
- **Org**: The organisation of the above mentioned user.
- **Created**: The date and time when the entry originated.
- **Action**: The action's type. This can include: login/logout for users, add, edit, delete for events, attributes, users and servers.
- **Title**: The title of an event always includes the target type (Event, User, Attribute, Server), the target's ID and the target's name (for example: e-mail address for users, event description for events).
- **Change**: This field is only populated for entries with "add" or "edit" actions. The changes are detailed in the following format: `_variable (initial_value) => (new_value)`. When the entry is about the creation of a new item (such as adding a new event) then the change will look like this for example: `org() => (ADMIN), date() => (2012-10-19),...`
Searching Logs

Another way to browse the logs is to search it by filtering the results according to the following fields (the search is a sub-string search, the sub-string has to be an exact match for the entry in the field that is being searched for):

- **Email**: By searching by Email, it is possible to view the log entries of a single user.
- **Org**: Searching for an organisation allows you to see all actions taken by any member of the organisation.
- **Action**: With the help of this drop down menu, you can search for various types of actions taken (such as logins, deletions, etc).
- **Title**: There are several ways in which to use this field, since the title fields contain several bits of information and the search searches for any substrings contained within the field, it is possible to just search for the ID number of a logged event, the username / server's name / event's name / attributes name of the event target.
- **Change**: With the help of this field, you can search for various specific changes or changes to certain variables (Ex.: using "Published" as the search term for and find all log entries where an event has been "Published", ip-src will find all attributes where a source IP address has been entered / edited, etc).

Background Processing

If enabled, MISP can delegate a lot of the time intensive tasks to the background workers. These will then be executed in sequence, allowing the users of the instance to keep using the system without a hiccup and without having to wait for the process to finish. It also allows for certain tasks to be scheduled and automated.

Command Line Tools for the Background Workers

The background workers are powered by CakeResque, so all of the CakeResque commands work. To start all of the workers needed by MISP go to your 
`/var/www/MISP/app/Console/worker` (assuming a standard installation path) and execute `start.sh`. To interact with the workers, here is a list of useful commands. Go to your 
`/var/www/MISP/app/Console` (assuming a standard installation path) and execute one of the following commands as a parameter to `./cake CakeResque` (for example: `./cake CakeResque tail`):

- **start**: Start a new worker.
- **startscheduler**: Start a new scheduler worker.
- **stop**: Stop a worker.
- **pause**: Pause a worker.
- **resume**: Resume a paused worker.
- **cleanup**: Terminate the job that a worker is working on with immediate effect. You will be presented with a choice of workers to choose from when executing this command.
- **restart**: Stop all Resque workers, and start a new one.
- **clear**: Clear all jobs inside a queue
- **reset**: Reset CakeResque internal worker's saved status
- **stats**: Display some statistics about your workers including the count of successful and failed jobs.
- **tail**: Tail the various (workers) log files that CakeResque creates, just choose the one from the list that you are interested in.
- **track**: Track a job status.
- **load**: Load a set of predefined workers.

The other commands should not be required, instead of starting / stopping or restarting workers use the supplied `start.sh` (it stops all workers and starts them all up again). For further instructions on how to use the console commands for the workers, visit the CakeResque list of commands.

Monitoring the Background Processes
The "Jobs" menu item within the Administration menu allows site admins to get an overview of all of the current and past scheduled jobs. Admins can see the status of each job, and what the queued job is trying to do. If a job fails, it will try to set an error message here too. The following columns are shown in the jobs table:

- **Id**: The job's ID (this is the ID of the job's metadata stored in the default datastore, not to be confused with the process ID stored in the redis database and used by the workers)
- **Process**: The process's ID.
- **Worker**: The name of the worker queue. There are 3+1 workers running if background jobs are enabled: default, cache, email, and a special Scheduler (this should never show up in the jobs table).
- **Job Type**: The name of the queued job.
- **Input**: Shows a basic input handled by the job - such as "Event:50" for a publish email alert job for event 50.
- **Message**: This will show what the job is currently doing or alternatively an error message describing why a job failed.
- **Org**: The string identifier of the organisation that has scheduled the job.
- **Status**: The status reported by the worker.
- **Retries**: Currently unused, it is planned to introduced automatic delayed retries for the background processing and thus add resilience.
- **Progress**: A progress bar showing how the job is coming along.

Jobs

<table>
<thead>
<tr>
<th>Id</th>
<th>Process</th>
<th>Worker</th>
<th>Job Type</th>
<th>Input</th>
<th>Message</th>
<th>Org</th>
<th>Status</th>
<th>Retries</th>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>3990</td>
<td>8f54c1a35d4ae0147f4d9b0a200</td>
<td>default</td>
<td>auction_runt</td>
<td>Event 1</td>
<td>Event published</td>
<td>ADMIN</td>
<td>Completed</td>
<td>0</td>
<td>Complete</td>
</tr>
<tr>
<td>3992</td>
<td>77f60a8d4cc30b6f16f5010f2225</td>
<td>default</td>
<td>auction_runt</td>
<td>Event 2</td>
<td>Event published</td>
<td>ADMIN</td>
<td>Completed</td>
<td>0</td>
<td>Complete</td>
</tr>
<tr>
<td>3993</td>
<td>11e71e2a138d3b6f176e527010f2225</td>
<td>default</td>
<td>auction_runt</td>
<td>Event 3</td>
<td>Event published</td>
<td>ADMIN</td>
<td>Completed</td>
<td>0</td>
<td>Complete</td>
</tr>
<tr>
<td>3994</td>
<td>336a6560af379517a2920b4d</td>
<td>default</td>
<td>auction_runt</td>
<td>Event 4</td>
<td>Event published</td>
<td>ADMIN</td>
<td>Completed</td>
<td>0</td>
<td>Complete</td>
</tr>
<tr>
<td>3995</td>
<td>571e7f77c3d20a46a5695424887</td>
<td>default</td>
<td>auction_runt</td>
<td>Event 5</td>
<td>Event published</td>
<td>ADMIN</td>
<td>Completed</td>
<td>0</td>
<td>Complete</td>
</tr>
</tbody>
</table>
Scheduling Jobs and Recurring Jobs

Apart from off-loading long-lasting jobs to the background workers, there is a second major benefit of enabling the background workers: Site-administrators can schedule recurring tasks for the jobs that generally take the longest to execute. At the moment this includes pushing / pulling other instances and generating a full export cache for every organisation and export type. MISP comes with these 3 tasks pre-defined, but further tasks are planned. The following fields make up the scheduled tasks table:

- **Id**: The ID of the task.
- **Type**: The type of the task.
- **Frequency (h)**: This number sets how often the job should be executed in hours. Setting this to 168 and picking the next execution on Sunday at 01:00 would execute the task every Sunday at 1 AM. Setting this value to 0 will make the task only run once on the scheduled date / time without rescheduling it afterwards.
- **Scheduled Time**: The time (in 24h format) when the task should be executed the next time it runs (and all consecutive times if a multiple of 24 is chosen for frequency).
- **Next Run**: The date on which the task should be executed.
- **Description**: A brief description of the task.
- **Message**: This field shows when the job was queued by the scheduler for execution.

### Scheduled Tasks

Here you can schedule pre-defined tasks that will be executed every x hours. You can alter the date and time of the next scheduled execution and the frequency at which it will be repeated (expressed in hours). If you set the frequency to 0 then the task will not be repeated. To change any of the above mentioned settings just click on the appropriate field and hit update all when you are done editing the scheduled tasks.

<table>
<thead>
<tr>
<th>Id</th>
<th>Type</th>
<th>Frequency (h)</th>
<th>Scheduled Time</th>
<th>Next Run</th>
<th>Description</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>pull xl</td>
<td>0</td>
<td>12:00</td>
<td>2016-02-25</td>
<td>initiates a full push for all eligible instances</td>
<td>not scheduled yet</td>
</tr>
<tr>
<td>2</td>
<td>pull xl</td>
<td>0</td>
<td>12:00</td>
<td>2014-02-25</td>
<td>initiates a full pull for all eligible instances</td>
<td>not scheduled yet</td>
</tr>
<tr>
<td>1</td>
<td>export进出口</td>
<td>36</td>
<td>18:00</td>
<td>2014-02-20</td>
<td>generates export caches for every export type and for every organisation</td>
<td>36 jobs started at 2014-02-14 - 17:01:27</td>
</tr>
</tbody>
</table>
Various administration tips & tricks

Default sharing level

Choose your default sharing level to match your usage scenario for MISP. The setting is named `default_event_distribution` and the values can be:

- Your organisation only (default)
- This community only
- Connected communities
- All communities

You can also set a default distribution level for attributes contained in an event with `default_attribute_distribution`, and it has the same values as the default sharing level for events plus an additional one that allows attributes to inherit the sharing level of the event.

Adding organisation logos

You can add a logo for your organisations in MISP by uploading them via the tab Manage files under the Administration menu & Server Settings sub-menu. The filename must be exactly the same as the organisation name that you will use in MISP. It is recommended to use PNG files of 48x48 pixels.

The _schdlr_ worker is not starting

If you already made sure that you copied the config file under the cakeresque directory, it might be due to the FQDN of the server hosting the instance has changed. A way to fix this is to flush temporary data stored in redis. This can be done by logging in redis, for example when logging in with redis-cli, and issuing a flushall command.

How to redirect HTTP to HTTPS

Here is a sample configuration for Apache webserver.

```xml
<VirtualHost *:80>
    ServerAdmin misp@misp.misp
    ServerName misp.misp.misp
    ServerAlias misp-int.misp.misp
    Redirect permanent / https://misp.misp.misp
    LogLevel warn
    ErrorLog /var/log/apache2/misp.local_error.log
    CustomLog /var/log/apache2/misp.local_access.log combined
    ServerSignature Off
</VirtualHost>

<VirtualHost *:443>
    ServerAdmin misp@misp.misp
    ServerName misp.misp.misp
    ServerAlias misp-int.misp.misp

    DocumentRoot /var/www/MISP/app/webroot
    <Directory /var/www/MISP/app/webroot>
        Options -Indexes
        AllowOverride all
        Order allow,deny
        allow from all
    </Directory>
</VirtualHost>
```
Increase max size of Samples / other files

Trying to upload a large samples (>50M) might cause the following error: [!] 500 Server Error: Internal Server Error
Or will give you an error page in browser.

The error logs on the system will display the following:

```
PHP Warning: POST Content-Length of 57526824 bytes exceeds the limit of 8388608 bytes in Unknown on line 0, referer: https://XYZ/attributes/add_attachment/1948
```

And / Or

```
PHP Fatal error: Allowed memory size of 134217728 bytes exhausted (tried to allocate 76705009 bytes) in /var/www/MISP/app/Lib/cakephp/lib/Cake/Network/CakeRequest.php on line 996
```

To fix that you need to adjust the php settings:

```
vi /etc/php5/apache2/php.ini
```

Increase to the following values (or more if you want to)

```
; Maximum size of POST data that PHP will accept.
; Its value may be 0 to disable the limit. It is ignored if POST data reading
; is disabled through enable_post_data_reading.
; http://php.net/post-max-size
post_max_size = 256M
[–]
; Maximum amount of memory a script may consume (128MB)
; http://php.net/memory-limit
memory_limit = 1024M
```

And then restart apache2

```
service apache2 restart
```

Support & feature requests

The preferred method for support & feature requests is to use the GitHub ticketing system.

If you want to discuss something related to MISP, want some help from the community, etc... You have the MISP Users mailing list and the MISP developers mailing list.
A number of companies offer custom development, consulting, and support around MISP, please check the support page of the MISP Project website.

More information in the notification emails about new events

The setting MISP.extended_alert_subject allows you to have an extended subject. One word of warning though. If you’re using encryption : the subject will not be encrypted. Be aware that you might leak some sensitive information this way. Below is an example how the two subject types look like. First with the option disabled, then with the option enabled.

Event 7 - Low - TLP Amber
Event 8 - OSINT - Dissecting XXX. - Low - TLP Amber

Taken from Koen Van Impe's blog

Get top API users

Enable the log_auth setting in the server settings. Optionally enable log_client_ip if you want to get stats per client ip. Log into your mysql server and run the following query:

```sql
select ip,email,count(id) as c from logs WHERE ip IS NOT NULL group by ip,email order by c desc limit 10;
```

This will give you a top 10 table per ip and username:

<table>
<thead>
<tr>
<th>ip</th>
<th>email</th>
<th>c</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2.3.4</td>
<td><a href="mailto:bob@nsa.gov">bob@nsa.gov</a></td>
<td>4124</td>
</tr>
<tr>
<td>5.6.7.8</td>
<td><a href="mailto:vladimir@kremlin.ru">vladimir@kremlin.ru</a></td>
<td>1932</td>
</tr>
<tr>
<td>9.10.11.12</td>
<td><a href="mailto:fred@somewhere.eu">fred@somewhere.eu</a></td>
<td>1317</td>
</tr>
<tr>
<td>13.14.15.16</td>
<td>SYSTEM</td>
<td>16</td>
</tr>
</tbody>
</table>

MISP Logs

By default, MISP has several layers of logs that can be used to trouble-shoot and monitor the system. Let's walk through each of the available logs:

- **Apache access logs**: Rotating logs generated by apache, logging each request, by default (on Ubuntu) they are found in /var/log/apache2/misp.local_access.log. The location can be changed via the apache conf file
- **Apache error logs**: Rotating logs generated by apache, logging error messages, by default (on Ubuntu) they are found in /var/log/apache2/misp.local_error.log. This error log file will generally not be used by MISP, however, if there is a PHP level error that prevents MISP from functionining you might have relevant entries here.
- **MISP error log**: Generated by MISP, logging any exceptions that occur during usage. These can be found in /var/www/MISP/app/tmp/logs/error.log (assuming default installation path). If you see errors in here and are stuck with an issue let us know via GitHub!
- **MISP debug log**: Generated by MISP, any debug messages and Notice level messages will be sent to this file. Generally less interesting, but can be helpful during debugging sessions. It should not be necessary to monitor this under normal usage. The file can be found in /var/www/MISP/app/tmp/logs/debug.log (assuming default installation path).
- **MISP worker error log**: Generated by MISP background workers, logging any exceptions generated during a background job. It is the equivalent of the MISP error log for background jobs, so if scheduled tasks, synchronisation or e-mailing with the workers enabled are causing issues, this is the place to check. It can
normally be found at /var/www/MISP/app/tmp/logs/resque-worker-error.log

- **MISP worker logs**: Rotating logs generated by MISP background workers, logging any jobs executed by workers. This is part of the normal operation of background workers and doesn't have to be monitored, though it can help when debugging issues. Normally found at /var/www/MISP/app/tmp/logs/resque-[current date].log

- **MISP scheduler error log**: Generated by MISP scheduler worker, logging any exceptions generated during the scheduling of a background job. It is the equivalent of the MISP error log for scheduled jobs. It can normally be found at /var/www/MISP/app/tmp/logs/resque-scheduler-error.log

- **MISP scheduler logs**: Rotating logs generated by MISP scheduler worker, logging any schedulings of jobs to be executed by workers. This is part of the normal operation of the scheduler worker and doesn't have to be monitored, though it can help when debugging issues. Normally found at /var/www/MISP/app/tmp/logs/resque-scheduler-[current date].log

**Logging of failed authentication attempts**

By default, MISP logs all failed login and authentication attempts in the built in Audit logs. To view any such failed attempts, simply log in as a site admin and navigate to Audit - List logs.

There are two types of entries that will be interesting if you are looking for failed authentication attempts, entries of action "auth_fail" (for failed attempts to authenticate via the API key or the external authentication system) and login_fail (for failed login attempts via the login page).

You can also search for any such entries using the Search Logs feature, simply choose the desired action from the two listed above and hit search.

What is logged:

<table>
<thead>
<tr>
<th>Auth method</th>
<th>Action</th>
<th>Failed credentials logged</th>
<th>IP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Webform</td>
<td>login_fail</td>
<td>None</td>
<td>Optional</td>
</tr>
<tr>
<td>API</td>
<td>auth_fail</td>
<td>API key</td>
<td>Optional</td>
</tr>
<tr>
<td>Webform</td>
<td>auth_fail</td>
<td>External auth key</td>
<td>Optional</td>
</tr>
</tbody>
</table>

In order to enable IP logging for any logged request in MISP, navigate to Administration - Server settings - MISP settings and enable the MISP.log_client_ip setting.

It is also possible to enable full logging of API and external authentication requests using the MISP.log_auth setting in the same location, but keep in mind that this is highly verbose and will log every request made. In addition to the information above, all accessed resource URLs are also logged.

**Clearing expired sessions**

By default the garbage collection of sessions is disabled in PHP. It is possible to enable it, but it's not recommended and as such MISP provides a manual way of clearing the sessions.

Navigate to the diagnostics screen of MISP (Administration - Server settings - Diagnostics) and near the bottom of the page there will be a counter showing the count of currently stored expired sessions. Simply purge them by clicking the applicable button when the number grows too large.

**Troubleshooting MISP not connecting to redis but redis-cli working**

If you have an IPv6 enabled OS, but an older redis version that does not support IPv6 (<v2.8), MISP might fail to connect to the redis server while redis-cli is working. The reason is that redis-cli is connecting to 127.0.0.1 directly, while the calls inside the CakeResque library used by MISP are done using "localhost" which resolves both to the
IPv4 and IPv6 loopback addresses. For some reasons, the use of the IPv6 address is attempted first which fails.

You can confirm this by trying to connect to redis using `telnet localhost 6379`. If it fails, the error message should mention the IPv6 loopback address (::1).

Two ways to fix it:

1) Upgrade your redis to a server that supports IPv6 (v2.8+). This is the preferred recommendation.

2) Comment the localhost mapping to IPv6 address in `/etc/hosts`

**Errors about fields or tables**

If you have errors with fields or tables that you can see in the error.log or in the page (if you enabled `debug` or `site_admin_debug` settings), an easy fix to make most of them go away is to use the `clean cache` feature on the `server settings` menu, `diagnostics` tab. An example of error message:

```
Error: [PDOException] SQLSTATE[42S22]: Column not found: 1054 Unknown column 'Task.job_id' in 'field list'
```

**Jobs**

The Jobs tab gives you an overview on any currently running jobs or jobs that were previously completed and their status.
Typically this is one of the places you would turn to even some background process might not complete as expected to get an indication on any issues related to user initiated Jobs.

For ease of use, you can filter the Jobs by ‘All’, ‘Default’, ‘Email’, ‘Cache’

**TODO: Explain differences Default, Email, Cache**

You can also purge the entries, either only by completed status or purge all. This is not automated and needs to be done manually.

**Scheduled Tasks**

Straight from the UI:

"""Here you can schedule pre-defined tasks that will be executed every x hours. You can alter the date and time of the next scheduled execution and the frequency at which it will be repeated (expressed in hours). If you set the frequency to 0 then the task will not be repeated. To change and of the above mentioned settings just click on the appropriate field and hit update all when you are done editing the scheduled tasks.

Warning: Scheduled tasks come with a lot of caveats and little in regards of customisations / granularity. You can instead simply create cron jobs out of the console commands as described here: Automating certain console tasks """

The task scheduler is a sub-par component to enable minimal functionality in terms of automating certain MISP tasks. If you have a dedicated and concious MISP Site Admin she can keep an eye on the Scheduler to make sure everything runs smoothly.

For better performance please use a real scheduler like your systems' crontab. As a rule of thumb: If you can click on it, MISP can automate it.

**MISP Backup**

Currently there exists this backup script simply called `misp-backup.sh`

All you need is to copy the the sample config and make sure it is correct. Then launch the script.

```
cd /var/www/MISP/tools/misp-backup
sudo -u www-data cp misp-backup.conf.sample misp-backup.conf
sudo ./misp-backup.sh
```

**Script output:**

```
/var/www/MISP/tools/misp-backup ll 2.4 • $ sudo ./misp-backup.sh
File ./misp-backup.conf exists.
copy of org images and other custom images
MySQL Dump
/var/www/MISP/tools/misp-backup
MISP Backup Completed, OutputDir: /opt/backup
FileName: MISP-Backup-20181128_163215.tar.gz
FullName: /opt/backup/MISP-Backup-20181128_163214.tar.gz
```

**MISP Restore**

In a similar fashion you can restore your MISP instance with the `misp-restore.sh` script. Read the script for details.
Feeds

Feeds are remote or local resources containing indicators that can be automatically imported in MISP at regular intervals. Feeds can be structured in MISP format, CSV format or even free-text format. You can easily import any remote or local URL to store them in your MISP instance. It's a simple way to gather many external sources of information without any programming skills into MISP.

Feeds description can be also easily shared among different MISP instances as you can export a feed description as JSON and import it back in another MISP instance.

Managing feeds

[warning] A site admin role is required to perform these actions.

To do so, you first need to access the list of feeds, using the top menu.
Adding feeds

Then select the add feed option on the side menu.
Here you will have access to a dynamic form. Let’s check each field by order.

Add MISP Feed

Add a new MISP feed source.

- Enabled

Name

Feed name

Provider

Name of the content provider

Input Source

Local

- Remove input after ingestion

Url

URL of the feed

Source Format

MISP Feed

Distribution

All communities

Default Tag

None

Filter rules:

Modify

Add
- **Enabled:** Is the feed active or not
- **Lookup Visible:** If this is not checked, the correlation will only show up to you, if checked, correlations are visible for other users as well
- **Name:** Just a name to identify the feed
- **Provider:** Name of the content provider
- **Input Source:** Where does the input come from
Network: hosted somewhere outside the platform
Local: Hosted on the local server. On this case, a new checkbox “Remove input after ingestion” will appear. If checked, the source is deleted after usage.

Input Source

☐ Remove input after ingestion
- URL: Url of the feed, where it is located (for Local hosted files, point to the manifest.json e.g. /home/user/feed-generator/output/manifest.json)
- The Source Format can be:
- MISP Feed: The source points to a list of json formatted like MISP events.
  Example: https://www.circl.lu/doc/misp/feed-osint

- Freetext Parsed Feed:

  Source Format
  Freetext Parsed Feed

  Target Event
  New Event Each Pull

  Target Event ID
  Leave blank unless you want to reuse an existing event.

  Exclusion Regex
  Regex pattern, for example: "^https://myfeedurl/"

  □ Auto Publish
  □ Override IDS Flag
  □ Delta Merge
Target Event: Which will be the event getting updated with the data from the feed. Can be either "New Event Each Pull" (A new event will be created each time the feed is pulled) or "Fixed Event" (A unique event will be updated with the new data. This event is determined by the next field)
Managing Feeds

- Target Event ID: The id of the event where the data will be added (if not set, the field will be set the first time the feed is fetched)
- Exclusion Regex: Add a regex pattern for detecting iocs that should be skipped (this can be useful to exclude any references to the actual report / feed for example)
- Auto Publish: If checked, events created thanks to the feed will be automatically published
- Override IDS Flag: If checked, the IDS flag will be set to false
- Delta Merge: If checked, only data coming from the last fetch are kept, the old ones are deleted.

Simple CSV Parsed Feed:

Source Format

Simple CSV Parsed Feed

Target Event

New Event Each Pull

Target Event ID

Leave blank unless you want to reuse an existing event.

Value field(s) in the CSV

2,3,4 (column position separated by commas)

Delimiter

,

Exclusion Regex

Regex pattern, for example: /*https://myfeedurl/*

☐ Auto Publish

☐ Override IDS Flag

☐ Delta Merge
Target Event: Which will be the event getting updated with the data from the feed. Can be either "New Event Each Pull" (A new event will be created each time the feed is pulled) or "Fixed Event" (A unique event will be updated with the new data. This event is determined by the next field)

Target Event ID: The id of the event where the data will be added (if not set, the field will be set the first time the feed is fetched)

Exclusion Regex: Add a regex pattern for detecting iocs that should be skipped (this can be useful to exclude any references to the actual report / feed for example)

Value field(s) in the CSV: Select one or several fields that should be parsed by the CSV parser and converted into MISP attributes

Delimiter: Set the default CSV delimiter (default = ",")

Auto Publish: If checked, events created thanks to the feed will be automatically published

Override IDS Flag: If checked, the IDS flag will be set to false

Delta Merge: If checked, only data coming from the last fetch are kept, the old ones are deleted.

Distribution: Define the distribution option that will be set on the event created by the feed

Default Tag: A default tag can be added to the created event(s)

Filter rules: Here you can define which tags or organisations are allowed or blocked.
To add a tag (resp. organisation), first type it into the top middle (resp. bottom middle) text field. Then use the arrows that point to the outside to add it to the allowed or blocked tags (resp. organisations) list.

Set pull rules

Allowed Tags

| Tag
| Tag |
|----|----|
| tip: green |

Blocked Tags

Allowed Organisations

| Organisation
| Organisation |
|-------------|-------------|

Blocked Organisations

Update  Cancel
Set pull rules

Allowed Tags

<table>
<thead>
<tr>
<th>Tag</th>
<th>Allowed Tags</th>
<th>Blocked Tags</th>
</tr>
</thead>
<tbody>
<tr>
<td>tip:white</td>
<td></td>
<td>tip:green</td>
</tr>
</tbody>
</table>

Allowed Organisations

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Allowed Organisations</th>
<th>Blocked Organisations</th>
</tr>
</thead>
</table>

Update Cancel
To remove a tag (resp. organisation), select it in the list and click on the arrow pointing to the inside.
Set pull rules

Allowed Tags

Blocked Tags

| tip | green |

Allowed Organisations

Blocked Organisations

Update

Cancel
Feed correlation

If an indicator from an feed matches an indicator within a MISP event, it will show up as "Feed hits" in the event overview. The correlation will not show up in the correlation graph of the event.
Automation API

- General
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  - GET /attributes ~ URL Arguments ~ URL Attributes ~ Output ~ Example
  - GET /attributes/delete/ ~ Description ~ URL Arguments ~ Output ~ Example
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- GET /servers/getPyMISPVersion ~ Result ~ Example
- GET /servers/getVersion ~ Example

Sightings
- POST /sightings/add/

User management
- POST /admin/users/add
  - POST admin/users/edit/
  - POST admin/users/delete/ ~ Parameters ~ Example
  - GET admin/users ~ Description ~ Output ~ Example
  - GET admin/users/view/ ~ Description ~ Parameters ~ Output ~ Example
  - POST admin/users/add/

Discussion API

Organisation management

Special Cases
- XML Export ~ JSON query format ~ XML query format ~ XML download and URL parameters
- CSV export ~ Update 2.4.82
- RPZ export
- Text export
- RESTful searches with JSON result
  - POST /attributes/restSearch ~ Example
- RESTful searches with XML result export
- Export attributes of event with specified type as XML
- Filtering event metadata
- Download attachment or malware sample
- Download malware sample by hash
- Upload malware samples using the "Upload Sample" API
- Proposals API
- Sharing groups
- Enable, disable and fetching feeds via the API
- Sightings API
- Warninglists API
  - GET warninglists/index ~ Description ~ Parameters ~ Output ~ Example
  - GET warninglists/view/1 ~ Description ~ Parameters ~ Output ~ Example
- Attribute statistics API
- Additional statistics
- MISP modules
  - Description
    - GET /modules/ ~ Example ~ Output
    - POST /modules/queryEnrichment ~ Example

## Automation API

Automation functionality is designed to automatically generate signatures for intrusion detection systems. To enable signature generation for a given attribute, Signature field of this attribute must be set to Yes. Note that not all attribute types are applicable for signature generation, currently we only support NIDS signature generation for IP, domains, host names, user agents etc., and hash list generation for MD5/SHA1 values of file artefacts. Support for more attribute types is planned. To make this functionality available for automated tools an authentication key is used. This makes it easier for your tools to access the data without further form-based-authentication.

## General

### Automation URL

The documentation will include a default MISP URL in the examples. Don't forget to replace it with your MISP URL.

Default MISP URL in the documentation:

https://<misp url>/

### Automation key

The authentication of the automation is performed via a secure key available in the MISP UI interface. Make sure you keep that key secret as it gives access to the entire database! The API key is available in the event actions menu under automation.
Since version 2.2 the usage of the authentication key in the URL is deprecated. Instead, pass the auth key in an Authorization header in the request. The legacy option of having the auth key in the URL is temporarily still supported but not recommended.

The authorization is performed by using the following header:

```
Authorization: YOUR API KEY
```

### Accept and Content-Type headers

When performing your request, depending on the type of request, you might need to explicitly specify in what content type you want to get your results. This is done by setting one of the below Accept headers:

```
Accept: application/json
Accept: application/xml
```

When submitting data in a POST, PUT or DELETE operation you also need to specify in what content-type you encoded the payload. This is done by setting one of the below Content-Type headers:

```
Content-Type: application/json
Content-Type: application/xml
```

**Example:**

```
```

By appending .json or .xml the content type can also be set without the need for a header.

### Automation using PyMISP

PyMISP is a Python library to access MISP platforms via their REST API.

PyMISP allows you to fetch events, add or update events/attributes, add or update samples or search for attributes.

PyMISP is available including a documentation with various examples.

### Status Codes

To be done
- 50x
- 400 - 499

### Error Handling

**Wrong endpoint chosen**

**Example**
curl --header "Authorization: a4PLf9QICddOFejwZ7yZkCq9CvVQj7mpUUf" --header "Accept: application/json" --header "Content-Type: application/json" http://10.50.13.60/servers/gaaa

{
  "name": "Not Found",
  "message": "Not Found",
  "url": "/servers/gaaa"
}

Events management

/events

Accepted Methods

- GET
- POST
- PUT
- DELETE

Description

Receive, update or delete Events. There is also a good amount of special output formats that can be triggered.

GET /events

Description

Receive events based on criteria

URL Arguments

- event_id: Event id to receive
- event_uuid : Event uuid to receive

Output

```
[{
  "id": 1,
  "org_id": 1,
  "date": "2014-12-10",
  "info": "OSINT - F-Secure W32/\Regin, Stage #1",
  "uuid": "54884656-2da8-4625-bf07-43ef95b0210b",
  "published": true,
  "analysis": 2,
  "attribute_count": 39,
  "orgc_id": 2,
  "timestamp": 1418217625,
  "distribution": 3,
  "sharing_group_id": 0,
  "proposal_email_lock": false,
  "locked": false,
  "threat_level_id": 1,
  "publish_timestamp": 1515749192,
  "disable_correlation": false,
  "Org": {
    "id": 1,
    "name": "ORGNAME"
  },
  "Orgc": {
    "id": 2,
    "name": "CIRCL"
  },
  "EventTag": [{
    "id": 1,
    "tag_id": 1,
    "Tag": {
      "id": 1,
      "name": "Type:OSINT",
      "color": "#1eed40",
      "exportable": true
    }
  }],
  "SharingGroup": {
    "id": null,
    "name": null
  }
}]
```

Example

```
```

POST /events

Example
curl -i -H "Accept: application/json" -H "content-type: application/json" -H "Authorization: a4PLfRQ1cDd0mFjwdTSyqCm9c9NVQ7mpUuF" --data "@event.json" -X POST http://10.50.13.60/events

That is how an event JSON object should look like

```json
{"Event":{"date":"2015-01-01","threat_level_id":1,"info":"testevent","published":false,"analysis":0,"distribution":0,"Attribute":[{"type":"domain","category":"Network activity","to_ids":false,"distribution":0,"comment":"","value":"test.com"}]}}
```

DELETE /events

Description

Delete events based on criteria

URL Arguments

- event_id: Event id to receive
- event_uuid: Event uuid to receive

Output

```json
{
    "name": "Event deleted.",
    "message": "Event deleted.",
    "url": "/events/delete/1"
}
```

Example


curl --header "Authorization: a4PLfRQ1cDd0mFjwdTSyqCm9c9NVQ7mpUuF" --header "Accept: application/json" --header "Content-Type: application/json" -X "DELETE" http://10.50.13.60/events/1

GET /events/index

Description

Return the event index. - Warning, there's a limit on the number of results

Output

```json
```

Example

POST /events/addTag Add or remove tags from events
You can add or remove an existing tag from an event in the following way:

https://<misp url>/events/addTag
https://<misp url>/events/removeTag

Just POST a JSON object in the following format (to the appropriate API depending on whether you want to add or delete a tag from an event):

{"request": {"Event": {"id": "228", "tag": "8"}}}

Where "tag" is the ID of the tag. You can also use the name of the tag the following way (has to be an exact match):

{"request": {"Event": {"id": "228", "tag": "OSINT"}}}

GET /events/pushEventToZMQ/

Description
Will push an Event to ZMQ

URL Arguments
• event_id

Example


GET /events/nids NIDS rules export

Automatic export of all network related attributes is available under the Snort or Suricata rule format. Only published events and attributes marked as IDS Signature are exported.

You can configure your tools to automatically download the following file:

https://<misp url>/events/nids/suricata/download
https://<misp url>/events/nids/snort/download

The full API syntax is as follows:

https://<misp url>/events/nids/[format]/download/[eventid]/[frame]/[tags]/[from]/[to]/[last]

format
The export format, can be "suricata" or "snort"
**eventid**
Restrict the download to a single event

**frame**
Some commented out explanation framing the data. The reason to disable this would be if you would like to concatenate a list of exports from various select events in order to avoid unnecessary duplication of the comments.

**tags**
To include a tag in the results just write its names into this parameter. To exclude a tag prepend it with a '!'. You can also chain several tag commands together with the '&&' operator. Please be aware the colons (:) cannot be used in the tag search. Use semicolons instead (the search will automatically search for colons instead). For example, to include tag1 and tag2 but exclude tag3 you would use:

```
https://<misp url>/events/nids/snort/download/false/false/tag1&&tag2&&!tag3
```

**from**
Events with the date set to a date after the one specified in the from field (format: 2015-02-15). This filter will use the date of the event.

**to**
Events with the date set to a date before the one specified in the to field (format: 2015-02-15). This filter will use the date of the event.

**last**
Events published within the last x amount of time, where x can be defined in days, hours, minutes (for example 6d or 12h or 30m). This filter will use the published timestamp of the event.

The keywords false or null should be used for optional empty parameters in the URL.

An example for a Suricata export for all events excluding those tagged tag1, without all of the commented information at the start of the file would look like this:

```
https://<misp url>/events/nids/suricata/download/null/true/!tag1
```

Administration is able to maintain a white-list containing host, domain name and IP numbers to exclude from the NIDS export.

**GET /events/hids Hash - HIDS database export**

Automatic export of MD5/SHA1 checksums contained in file-related attributes. This list can be used to feed forensic software when searching for suspicious files. Only published events and attributes marked as IDS Signature are exported.

You can configure your tools to automatically download all the MD5 hashes from MISP:

```
https://<misp url>/events/hids/md5/download
```

Or the SHA1 hashes:

```
https://<misp url>/events/hids/sha1/download
```

The API's full format is as follow:
format
The export format, can be "md5" or "sha1"

tags
To include a tag in the results just write its names into this parameter. To exclude a tag prepend it with a '!'. You can also chain several tag commands together with the '&&' operator. Please be aware the colons (:) cannot be used in the tag search. Use semicolons instead (the search will automatically search for colons instead). For example, to include tag1 and tag2 but exclude tag3 you would use:

https://<misp url>/events/hids/md5/download/tag1&&tag2&&!tag3

from
Events with the date set to a date after the one specified in the from field (format: 2015-02-15). This filter will use the date of the event.

to
Events with the date set to a date before the one specified in the to field (format: 2015-02-15). This filter will use the date of the event.

last
Events published within the last x amount of time, where x can be defined in days, hours, minutes (for example 5d or 12h or 30m). This filter will use the published timestamp of the event.

The keywords false or null should be used for optional empty parameters in the URL.

For example, to only show sha1 values from events tagged tag1, use:

https://<misp url>/events/hids/sha1/download/tag1

GET /events/stix STIX export
You can export MISP events in MITRE's STIX format (to read more about STIX). The STIX XML export is currently very slow and can lead to timeouts with larger events or collections of events. The STIX JSON return format does not suffer from this issue.

Usage of the API:

https://<misp url>/events/stix/download

Search parameters can be passed to the function via URL parameters or by POSTing an xml or json object (depending on the return type). The following parameters can be passed to the STIX export tool: id, withAttachments, tags. Both id and tags can use the && (and) and ! (not) operators to build queries. Using the URL parameters, the syntax is as follows:

https://<misp url>/events/stix/download/[id]/[withAttachments]/[tags]/[from]/[to]/[last]

id
The event's ID

withAttachments
Encode attachments where applicable
**tags**
To include a tag in the results just write its names into this parameter. To exclude a tag prepend it with a '!'. You can also chain several tag commands together with the '&&' operator. Please be aware the colons (:) cannot be used in the tag search. Use semicolons instead (the search will automatically search for colons instead).

For example, to include tag1 and tag2 but exclude tag3 you would use:

```python
https://<misp url>/events/stix/download/false/tag1&&tag2&&!tag3
```

**from**
Events with the date set to a date after the one specified in the from field (format: 2015-02-15). This filter will use the date of the event.

**to**
Events with the date set to a date before the one specified in the to field (format: 2015-02-15). This filter will use the date of the event.

**last**
Events published within the last x amount of time, where x can be defined in days, hours, minutes (for example 5d or 12h or 30m). This filter will use the published timestamp of the event.

You can post an XML or JSON object containing additional parameters in the following formats.

If you use JSON query objects:

```python
https://<misp url>/events/stix/download/!51&&!62/false/APT1&&!OSINT/2015-02-15
```

If you use XML query objects:

```xml
https://<misp url>/events/stix/download
```

Various ways to narrow down the search results of the STIX export

For example, to retrieve all events tagged "APT1" but excluding events tagged "OSINT" and excluding events #51 and #62 without any attachments:

```python
https://<misp url>/events/stix/download/!51&&!62/false/APT1&&!OSINT/2015-02-15
```

To export the same events using a POST request use:

```python
https://<misp url>/events/stix/download.json
```

Together with this JSON object in the POST message:

```json
{"request": {"id": ["!51","!62"], "withAttachment":false, "tags":["APT1","!OSINT"], "from":false, "to":"2015-02-15"}}
```
XML is automatically assumed when using the STIX export:

https://<misp url>/events/stix/download

The same search could be accomplished using the following POSTed XML object (note that ampersands need to be escaped, or alternatively separate id and tag elements can be used):

```xml
<request>
  <id>151</id>
  <id>162</id>
  <tags>APT1</tags>
  <tags>!OSINT</tags>
  <from>2015-02-15</from>
</request>
```

## Tag management

### POST /tags/add

**Description**

Attaches a Tag to an Object by a given UUID

**URL Arguments**

- `tag`
- `UUID`

**Response**

```json
{
  "name": "Tag tlp3Awhite(7) successfully attached to Attribute(153).",
  "message": "Tag tlp3Awhite(7) successfully attached to Attribute(153).",
  "url": "/tags/attachTagToObject"
}
```

**Example**

```bash
curl --header "Authorization: a4PLf8QICdDdOmFjwdtSYqkCqn9CvN8VQ7mpUUF " --header "Accept: application/json" --header "Content-Type: application/json" -X POST http://10.50.13.60/tags/attachTagToObject/5a0d68b3-6da0-4ced-8233-7bb956d210f/tlp3Awhite
```

```bash
curl --header "Authorization: a4PLf8QICdDdOmFjwdtSYqkCqn9CvN8VQ7mpUUF " -d "{"uuid":"5a0d68b3-6da0-4ced-8233-7bb956d210f","tag":"tlp:white"}" --header "Accept: application/json" --header "Content-Type: application/json" -X POST http://10.50.13.60/tags/attachTagToObject/
```

### POST /tags/attachTagToObject

**Description**

Attaches a Tag to an Object by a given UUID

**URL Arguments**

- `tag`
- `UUID`

### POST /tags/removeTagFromObject

**Description**

Removes a Tag to an Object by a given UUID
URL Arguments

- **tag**
- **UUID**

Response

```json
{
  "name": "Tag tlpaWhite(7) successfully removed from Attribute(153).",
  "message": "Tag tlpaWhite(7) successfully removed from Attribute(153).",
  "url": "/tags/removeTagFromObject"
}
```

Example

```
curl --header "Authorization: a4PL8Q1C4d4D4mFjw4tSYqkCqnpSCYmQt7mpUUF" --header "Accept: application/json" --header "Content-Type: application/json" -X POST http://10.50.13.60/tags/removeTagFromObject/5a0d68b3-6da0-4ced-8233-77bb950d2f/tlpaWhite
```

GET /tags/tagStatistics/

Description

Will give an overview of the used attribute tags

Output

```json
{
  "tags": {
    "Type:OSINT": "1",
    "tlp:White": "1",
    "osint:source-type:\"technical-report\": "1",
    "misp-galaxy:threat-actor:\"Lazarus Group\": "1",
    "misp-galaxy:rat:\"FALLCHILL\": "1"
  },
  "taxonomies": []
}
```

Example

```
curl --header "Authorization: a4PL8Q1C4d4D4mFjw4tSYqkCqnpSCYmQt7mpUUF" --header "Accept: application/json" --header "Content-Type: application/json" -X GET http://10.50.13.60/tags/tagStatistics/
```

Attribute management

POST /attributes/add/

Adds an Attribute to an event

URL Arguments

- **event id**
**Output**

**Example**

```
curl --header "Authorization: a4PLfqQICdDdMjwdsSYqkCq1n9CV8VQY7mpUUF " --header "Accept: application/json" --header "Content-Type: application/json" -d "{"event_id":"3542","value":"1.2.3.4","category":"Network activity","type":"ip-dst"}
```

**GET /attributes**

Get an attribute

**URL Arguments**

- attribute uuid

**URL Attributes**

**Output**

```
{"Attribute":{"id":39,"event_id":1,"object_id":0,"object_relation":null,"category":"Payload installation","type":"md5","to_ids":true,"uuid":"548847db-060c-4275-a0c7-15bb950d210b","timestamp":1418217435,"distribution":3,"sharing_group_id":0,"comment":"Regin samples collected."","deleted":false,"disable_correlation":false,"value":"049436bb90f71cf38549817d9b90e2da","event_uuid":"54884656-26a8-4625-bf07-43ef950d210b"}}
```

**Example**

```
curl --header "Authorization: a4PLfqQICdDdMjwdsSYqkCq1n9CV8VQY7mpUUF " --header "Accept: application/json" --header "Content-Type: application/json" 
```

**GET /attributes/delete/**

**Description**

Delete attributes.

**URL Arguments**

- attribute uuid
- attribute id
- attribute id/1 <-- hard delete

**Output**

```
{"message":"Attribute deleted."}
```

**Example**

```
curl --header "Authorization: YOUR API KEY" --header "Accept: application/json" --header "Content-Type: application/json" 
```
GET /attributes/attributeStatistics

Description

Will give an overview of the used attribute types

Output

```
{
    "attachment": "3",
    "comment": "3",
    "filename": "2",
    "float": "2",
    "ip-dst": "0",
    "ip-dst|port": "3",
    "link": "3",
    "md5": "16",
    "port": "3",
    "sha1": "2",
    "sha256": "2",
    "size-in-bytes": "1",
    "ssdeep": "2"
}
```

Example


GET /attributes/describeTypes Describe types API

MISP can procedurally describe all attribute types and attribute categories it currently supports including the category-type mappings. To access this information simply send a GET request to:

Example

https://<misp url>/attributes/describeTypes

Depending on the headers passed the returned data will be a JSON object or an XML, with 3 main sections: types, categories, category_type_mappings.
Server management

GET /servers/getPyMISPVersion

Result

```json
{"version":"2.4.85"}
```

Example

```bash
```

GET /servers/getVersion

Result

```json
{"version":"2.4.85","perm_sync":true}
```

Example

```bash
```

Sightings

POST /sightings/add/

- attribute_id
- attribute_uuid

The different sightings types are:

- 0 => 'sighting',
- 1 => 'false-positive',
- 2 => 'expiration'

User management

MISP allows administrators to create and manage users via its REST API

```bash
https://<misp url>/admin/users/view/[user id]
```

POST /admin/users/add

To create a new user, send a POST request to:
Sample input

```
{  
    "email": "andras.iklody@circl.lu",  
    "org_id": 1,  
    "role_id": 1  
}
```

To view the mandatory and optional fields, use a GET request on the above URL.

Sample output

```
{  
    "name": "\'/admin\'/users\'/add API description"  
    "description": "POST a User object in JSON format to this API to create a new user."  
    "mandatory_fields": [  
        "email",  
        "org_id",  
        "role_id"  
    ],  
    "optional_fields": [  
        "password",  
        "external_auth_required",  
        "external_auth_key",  
        "enable_password",  
        "nids_sid",  
        "server_id",  
        "gpgkey",  
        "certif_public",  
        "autoalert",  
        "contactalert",  
        "disabled",  
        "change_pw",  
        "termsaccepted",  
        "newsread"  
    ],  
    "url": "\'/admin\'/users\'/add"  
}
```

**POST admin/users/edit/**

To edit an existing user send a POST request to:

`https://<misp url>/admin/users/edit/[user id]`

Only the fields POSTed will be updated, the rest is left intact. To view all possible parameters, simply send a GET request to the above URL.

**POST admin/users/delete/**

You can also delete users by POSTing to the below URL, but keep in mind that disabling users (by setting the disabled flag via an edit) is always preferred to keep user associations to events intact.

**Parameters**

- [user id]

**Example**
GET admin/users

Description

Will output all users

Output

```
[

  "User": {
    "id": "1",
    "password": "FOOOOOOOOO",
    "org_id": "1",
    "server_id": "0",
    "email": "admin@admin.test",
    "autoalert": false,
    "authkey": "a4PLhQICdDdOnMFjwdtSYqkCqn9CvN09YQL7mpUUF",
    "invited_by": "0",
    "gpgkey": null,
    "certif_public": "",
    "nids_sid": "40680098",
    "termsaccepted": true,
    "newsread": "0",
    "role_id": "1",
    "change_pw": "0",
    "contactalert": false,
    "disabled": false,
    "expiration": null,
    "current_login": "1515752313",
    "last_login": "1515748671",
    "force_logout": false,
    "date_created": null,
    "date_modified": null,
    "org_ci": "ORGNAME"
  },
  "Role": {
    "id": "1",
    "name": "admin",
    "perm_auth": true
  },
  "Organisation": {
    "id": "1",
    "name": "ORGNAME"
  }
]
```

Example

```
```

GET admin/users/view/

Description
Will return a single user. To view a user simply send a GET request.

**Parameters**

- `id`

**Output**

```
{
  "User": {
    "id": "1",
    "password": "******",
    "org_id": "1",
    "server_id": "0",
    "email": "admin@admin.test",
    "autoalert": false,
    "authkey": "a4PLf8QICdDdOmFjwdtSYkCqn9CvN8VQt7mpUUF",
    "invited_by": "0",
    "gpgkey": "null",
    "certif_public": "",
    "nids_sid": "4000000",
    "termsaccepted": true,
    "newsread": "0",
    "role_id": "1",
    "change_pw": "0",
    "contactalert": false,
    "disabled": false,
    "expiration": null,
    "current_login": "1515752313",
    "last_login": "1515748671",
    "force_logout": false,
    "orgAdmins": []
  }
}
```

**Example**

```
curl --header "Authorization: a4PLf8QICdDdOmFjwdtSYkCqn9CvN8VQt7mpUUF" --header "Accept: application/json" --header "Content-Type: application/json" -X GET http://10.50.13.60/admin/users/view/1
```

**POST admin/users/add/**

**Discussion API**

If you would like to fetch a discussion thread including all of its posts, simply send a GET request to:

```
https://<misp url>/threads/view/<thread id>
```

Using the following headers:

- `Authorization: [Your auth key]`
- `Content-type: application/json`
- `Accept: application/json`

To get all posts related to an event simply send a GET request to:
**Organisation management**

MISP allows administrators to create and manage organisations via its REST API.

The API is available in JSON format so make sure you use the following headers:

- **Authorization:** [Your auth key]
- **Content-type:** application/json
- **Accept:** application/json

To fetch all organisations send a GET request to:

https://<misp url>/organisations

To view an individual organisation, send a get request to:

https://<misp url>/organisations/view/id

The management of users happens via three apis:

- https://<misp url>/admin/organisations/add
- https://<misp url>/admin/organisations/edit/[org id]
- https://<misp url>/admin/organisations/delete/[org id]

To delete an organisation simply send a POST or DELETE request to the above URL.

For creating or modifying an organisation, simply POST a JSON containing the relevant fields to the appropriate API. The only mandatory field is the organisation name, with a host of optional parameters.

An example for a simple organisation object:

```
{
  "name": "Blizzard",
  "nationality": "US"
}
```

Not setting a field will assume the default settings for the given field in the case of a new organisation whilst it would retain the existing setting for existing organisations. The above example would create the following object in MISP:

```
{
  "Organisation": {
    "id": "1108",
    "name": "Blizzard",
    "alias": "",
    "anonymise": false,
    "date_created": "2017-01-22 17:32:29",
    "date_modified": "2017-01-22 17:32:29",
    "description": "",
    "type": "",
    "nationality": "US",
    "sector": "",
    "created_by": "1",
    "uuid": "5884de0d-04f0-4d7d-bf15-0b88c0a83865",
    "contacts": ""
  }
```
To query the add or edit APIs for the valid parameters, simply send a GET requests to either API. The result currently looks like this (which might change when new fields are added):

```
{
  "name": "\admin\organisations\add API description",
  "description": "POST an Organisation object in JSON format to this API to create a new organisation.",
  "mandatory_fields": [
    "name"
  ],
  "optional_fields": [
    "anonymise",
    "description",
    "type",
    "nationality",
    "sector",
    "uuid",
    "contacts",
    "local"
  ],
  "url": "\admin\organisations\add"
}
```

**Special Cases**

**XML Export**

An automatic export of all events and attributes (except file attachments) is available under a custom XML format.

You can configure your tools to automatically download the following file:

```
https://<misp url>/events/xml/download
```

If you only want to fetch a specific event append the eventid number:

```
https://<misp url>/events/xml/download/1
```

You can post an XML or JSON object containing additional parameters in the JSON query format or XML query format. Query parameters provide a way to filter the output to specific parameters.

**JSON query format**

The URL is appended with json:

```
https://<misp url>/events/xml/download.json
```

The query parameters can be the following:

```
{"request": {"eventid": ["151", "162"], "withAttachment": false, "tags": ["APT1", "OSINT"], "from": false, "to": "2015-02-15"]}
```
XML query format

The URL is path is:

https://<misp url>/events/xml/download

The query parameters can be the following:

```
<request><eventid>151</eventid><eventid>162</eventid><withAttachment>false</withAttachment><tags>APT1</tags><tags>OSINT</tags><from>false</from><to>2015-02-15</to></request>
```

XML download and URL parameters

The XML download also accepts two additional the following optional parameters in the url:

https://<misp url>/events/xml/download/[eventid]/[withattachments]/[tags]/[from]/[to]/[last]

**eventid**

Restrict the download to a single event

**withattachments**

A boolean field that determines whether attachments should be encoded and a second parameter that controls the eligible tags.

**tags**

To include a tag in the results just write its names into this parameter. To exclude a tag prepend it with a ‘!’. You can also chain several tag commands together with the ‘&&’ operator. Please be aware the colons (:) cannot be used in the tag search. Use semicolons instead (the search will automatically search for colons instead). For example, to include tag1 and tag2 but exclude tag3 you would use:

https://<misp url>/events/xml/download/false/true/tag1&&tag2&&!tag3

**from**

Events with the date set to a date after the one specified in the from field (format: 2015-02-15). This filter will use the date of the event.

**to**

Events with the date set to a date before the one specified in the to field (format: 2015-02-15). This filter will use the date of the event.

**last**

Events published within the last x amount of time, where x can be defined in days, hours, minutes (for example 5d or 12h or 30m). This filter will use the published timestamp of the event.

The keywords false or null should be used for optional empty parameters in the URL. Also check out the User Guide to read about the REST API.

CSV export

An automatic export of attributes is available as CSV. Only attributes that are flagged "to_ids" will get exported.

You can configure your tools to automatically download the following file:

https://<misp url>/events/csv/download
This will download all the valid attributes in your MISP instance (might take some time).

You can also configure your tools to download the attributes from a specific event. Here is the old legacy CSV export that will work like exporting all attributes:

https://<misp url>/events/csv/download/<event-id>

You can specify additional flags for CSV exports as follows:

POST to:

https://<misp url>/events/csv/download

Headers:

Authorization: <your auth key>
Content-type: application/json

Body:

{ "parameter1":"value1", "parameter2":1, "parameter3":["value3", "value4", "!value5"]}

_eventid
Restrict the download to a single event

_ignore
Setting this flag to true will include attributes that are not marked "to_ids".

_tags
Simply add a list of tags that should be included or negated (by prepending the tag name with a ")"). Any event with a negated tag will be ignored, even if an included tag is matching. An example is included further down.

_category
The attribute category, any valid MISP attribute category is accepted.

_type
The attribute type, any valid MISP attribute type is accepted.

_includeContext
Include the event data with each attribute.

_from
Events with the date set to a date after the one specified in the from field (format: 2015-02-15). This filter will use the date of the event.

_to
Events with the date set to a date before the one specified in the to field (format: 2015-02-15). This filter will use the date of the event.

_last
Events published within the last x amount of time, where x can be defined in days, hours, minutes (for example 5d or 12h or 30m). This filter will use the published timestamp of the event.

For example, to only download a csv generated of the "domain" type and the "Network activity" category attributes all events except for the one and further restricting it to events that are tagged "tag1" or "tag2" but not "tag3", only allowing attributes that are IDS flagged use the following syntax:
POST to:

https://<misp url>/events/csv/download

Headers:

Authorization: <your auth key>
Content-type: application/json

Body:

{"tags": ["tag1", "tag2", "!tag3"], "category": "Network activity", "type": "domain"}

Alternatively you can fall back to the deprecated syntax of passing parameters in a GET request via the URL, however this is discouraged:

https://<misp url>/events/csv/download/[eventid]/[ignore]/[tags]/[category]/[type]/[includeContext]/[from]/[to]/[last]

If you use the deprecated URL parameter method, keep in mind that the keywords false or null should be used for optional empty parameters. To export the attributes of all events that are of the type "domain", use the following syntax:

https://<misp url>/events/csv/download/false/false/false/false/domain

**Update 2.4.82**

Since version 2.4.82, the new export format allows to select more columns using the following query format:

https://<misp-instance>/events/csv/download/<event-id>?attributes=timestamp,type,uuid,value

The order of columns will be honoured including those related to object level information.

To select object level columns, simply prepend the given object column's name by object_, such as:

https://<misp-instance>/events/csv/download/<event-id>?attributes=timestamp,type,uuid,value&object_attributes=u uid,name

The following columns will be returned (all columns related to objects will be prefixed with object_):

timestamp, type, uuid, value, object_uuid, object_name

includeContext option includes the tags for the event for each line.

**RPZ export**

You can export RPZ zone files for DNS level firewall by using the RPZ export functionality of MISP. The file generated will include all of the IDS flagged domain, hostname and IP-src/IP-dst attribute values that you have access to.

It is possible to further restrict the exported values using the following filters:

*tags*
To include a tag in the results just write its names into this parameter. To exclude a tag prepend it with a '!'. You can also chain several tag commands together with the '&&' operator. Please be aware the colons (:) cannot be used in the tag search when passed through the URL. Use semicolons instead (the search will automatically search for colons instead).

**id**
The event's ID

**from**
Events with the date set to a date after the one specified in the from field (format: 2015-02-03)

**to**
Events with the date set to a date before the one specified in the to field (format: 2015-02-03)

MISP will inject header values into the zone file as well as define the action taken for each of the values that can all be overwritten. By default these values are either the default values shipped with the application, or ones that are overwritten by your site administrator. The values are as follows:

<table>
<thead>
<tr>
<th>Value name</th>
<th>Default value</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPZ_policy</td>
<td>DROP</td>
</tr>
<tr>
<td>RPZ_walled_garden</td>
<td>127.0.0.1</td>
</tr>
<tr>
<td>RPZ_serial</td>
<td>$date00</td>
</tr>
<tr>
<td>RPZ_refresh</td>
<td>2h</td>
</tr>
<tr>
<td>RPZ_retry</td>
<td>30m</td>
</tr>
<tr>
<td>RPZ_expiry</td>
<td>30d</td>
</tr>
<tr>
<td>RPZ_minimum_ttl</td>
<td>1h</td>
</tr>
<tr>
<td>RPZ_ttl</td>
<td>1w</td>
</tr>
<tr>
<td>RPZ_ns</td>
<td>localhost.</td>
</tr>
<tr>
<td>RPZ_ns_alt</td>
<td></td>
</tr>
<tr>
<td>RPZ_email</td>
<td>root.localhost</td>
</tr>
</tbody>
</table>

To override the above values, either use the URL parameters as described below:

https://<misp url>/attributes/rpz/download/[tags]/[eventId]/[from]/[to]/[policy]/[walled_garden]/[ns]/[ns_alt]/[email]/[serial]/[refresh]/[retry]/[expiry]/[minimum_ttl]/[ttl]

Or POST an XML or JSON object with the above listed options:

```xml
<request>
	<tags>OSINT&&!OUTDATED</tags>
	<policy>walled-garden</policy>
	<walled_garden>teamliquid.net</walled_garden>
	<refresh>5h</refresh>
</request>
```

```json
{ "request": { "tags": ["OSINT", "!OUTDATED"], "policy": "walled-garden", "walled_garden": "teamliquid.net", "refresh": "5h"} }
```

**Text export**
An export of all attributes of a specific type to a plain text file. By default only published and IDS flagged attributes are exported.

You can configure your tools to automatically download the following files:

- https://<misp url>/attributes/text/download/sha1
- https://<misp url>/attributes/text/download/sha256
- https://<misp url>/attributes/text/download/filename
- https://<misp url>/attributes/text/download/filename|sha1
- https://<misp url>/attributes/text/download/filename|sha256
- https://<misp url>/attributes/text/download/hostname
- https://<misp url>/attributes/text/download/domain
- https://<misp url>/attributes/text/download/email-dst
- https://<misp url>/attributes/text/download/email-subject
- https://<misp url>/attributes/text/download/email-attachment
- https://<misp url>/attributes/text/download/url
- https://<misp url>/attributes/text/download/user-agent
- https://<misp url>/attributes/text/download/regkey
- https://<misp url>/attributes/text/download/regkey|value
- https://<misp url>/attributes/text/download/snort
- https://<misp url>/attributes/text/download/yara
- https://<misp url>/attributes/text/download/vulnerability
- https://<misp url>/attributes/text/download/attachment
- https://<misp url>/attributes/text/download/link
- https://<misp url>/attributes/text/download/comment
- https://<misp url>/attributes/text/download/text
- https://<misp url>/attributes/text/download/other
- https://<misp url>/attributes/text/download/named pipe
- https://<misp url>/attributes/text/download/mutex
- https://<misp url>/attributes/text/download/target-user
- https://<misp url>/attributes/text/download/target-location

To restrict the results by tags, use the usual syntax. Please be aware the colons (:) cannot be used in the tag search. Use semicolons instead (the search will automatically search for colons instead). To get ip-src values from events tagged tag1 but not tag2 use:

https://<misp url>/attributes/text/download/ip-src/tag1&&

It is possible to restrict the text exports on additional flags. The first allows the user to restrict based on event ID, whilst the second is a boolean switch allowing non IDS flagged attributes to be exported. Additionally, choosing “all” in the type field will return all eligible attributes.

https://<misp url>/attributes/text/download/[type]/[tags]/[event_id]/[allowNonIDS]/[from]/[to]/[last]

**type**

The attribute type, any valid MISP attribute type is accepted.
**tags**
To include a tag in the results just write its names into this parameter. To exclude a tag prepend it with a '!'. You can also chain several tag commands together with the '&&' operator. Please be aware the colons (:) cannot be used in the tag search. Use semicolons instead (the search will automatically search for colons instead).

**allowNonIDS**
Include attributes that would normally be excluded due to the IDS flag not being set or due to being whitelisted

**from**
Set the lowest "date" field value that should be included in the export (format YYYY-MM-DD)

**to**
Set the highest "date" field value that should be included in the export (format YYYY-MM-DD)

**last**
Set the timeframe of the export based on the "timestamp" value. The parameter uses a time + metric notation (valid examples: "2w", "60m", "24h")

For example, to include tag1 and tag2 but exclude tag3 you would use:

```
https://<misp url>/attributes/text/download/all/tag1&&tag2&&!tag3
```

**event_id**
Restrict the results to the given event IDs.

**allowNonIDS**
Allow attributes to be exported that are not marked as "to_ids".

**from**
Events with the date set to a date after the one specified in the from field (format: 2015-02-15). This filter will use the date of the event.

**to**
Events with the date set to a date before the one specified in the to field (format: 2015-02-15). This filter will use the date of the event.

**last**
Events published within the last x amount of time, where x can be defined in days, hours, minutes (for example 5d or 12h or 30m). This filter will use the published timestamp of the event.

The keywords false or null should be used for optional empty parameters in the URL.

For example, to retrieve all attributes for event #5, including non IDS marked attributes too, use the following line:

```
https://<misp url>/attributes/text/download/all/null/5/true
```

**RESTful searches with JSON result**
It is possible to search the database for attributes based on a list of criteria

To return an event with all of its attributes, relations, shadowAttributes, use the following syntax:

```
https://<misp url>/attributes/restSearch/json/[value]/[type]/[category]/[org]/[tag]/[quickfilter]/[from]/[to]/[last]/[eventid]/[withAttachments]/[metadata]/[uuid]
```

If you include "includeEventUuid":1" in the json request, it will give you the event_uuid as a result as well.
Be careful if you GET the /attributes/restSearch/json/ without an value, it will return all attributes.

**POST /attributes/restSearch**

Do not use that function with GET!

**Example**

```bash
```

```json
{
   "response": []
}
```

**RESTful searches with XML result export**

It is possible to search the database for attributes based on a list of criteria.

To return an event with all of its attributes, relations, shadowAttributes, use the following syntax:

```
https://<misp url>/events/restSearch/download/[value]/[type]/[category]/[org]/[tag]/[quickfilter]/[from]/[to]/[last]/[eventid]/[withAttachments]/[metadata]/[uuid]
```

- **value**
  Search for the given value in the attributes’ value field.

- **type**
  The attribute type, any valid MISP attribute type is accepted.

- **category**
  The attribute category, any valid MISP attribute category is accepted.

- **org**
  Search by the creator organisation by supplying the organisation identifier.

- **tags**
  To include a tag in the results just write its names into this parameter. To exclude a tag prepend it with a '!' . You can also chain several tag commands together with the '&&' operator. Please be aware the colons (:) cannot be used in the tag search. Use semicolons instead (the search will automatically search for colons instead).

  For example, to include tag1 and tag2 but exclude tag3 you would use:

  ```
  https://<misp url>/events/restSearch/download/null/null/null/null/tag1&&tag2&&!tag3
  ```

- **quickfilter**
  Enabling this (by passing "1" as the argument) will make the search ignore all of the other arguments, except for the auth key and value. MISP will return an xml / json (depending on the header sent) of all events that have a sub-string match on value in the event info, event orgc, or any of the attribute value1 / value2 fields, or in the attribute comment.

- **from**
  Events with the date set to a date after the one specified in the from field (format: 2015-02-15). This filter will use
the date of the event.

**to**
Events with the date set to a date before the one specified in the to field (format: 2015-02-15). This filter will use the date of the event.

**last**
Events published within the last x amount of time, where x can be defined in days, hours, minutes (for example 5d or 12h or 30m). This filter will use the published timestamp of the event.

**eventid**
The events that should be included / excluded from the search

**withAttachments**
Include the attachments/encrypted samples in the export

**metadata**
Only fetch the event metadata (event data, tags, relations) and skip the attributes

**limit**
Limit the number of results returned; use together with page.

**page**
If a limit is set, sets the page to be returned, starting at 1; page 3, limit 100 will return records 201->300). When requesting a page beyond the number of available pages, the returned results list will be empty.

The keywords false or null should be used for optional empty parameters in the URL.

For example, to find any event with the term "red october" mentioned, use the following syntax (the example is shown as a POST request instead of a GET, which is highly recommended):

**POST**

```plaintext
POST to:
https://<misp url>/events/restSearch/download
```

**POST message payload (XML):**

```xml
<request><value>red october</value><searchall>1</searchall><eventid>!15</eventid></request>
```

**POST message payload (JSON):**

```json
{"request": {"value": "red october", "searchall": 1, "eventid": "!15"}}
```

To just return a list of attributes, use the following syntax:

**value**
Search for the given value in the attributes’ value field.

**type**
The attribute type, any valid MISP attribute type is accepted.

**category**
The attribute category, any valid MISP attribute category is accepted.

**org**
Search by the creator organisation by supplying the organisation identifier.

**tags**
To include a tag in the results just write its names into this parameter. To exclude a tag prepend it with a '!'. You can also chain several tag commands together with the '&&' operator. Please be aware the colons (:) cannot be used in the tag search. Use semicolons instead (the search will automatically search for colons instead).

**from**
Events with the date set to a date after the one specified in the from field (format: 2015-02-15). This filter will use the date of the event.

**to**
Events with the date set to a date before the one specified in the to field (format: 2015-02-15). This filter will use the date of the event.

**last**
Events published within the last x amount of time, where x can be defined in days, hours, minutes (for example 5d or 12h or 30m). This filter will use the published timestamp of the event.

**eventid**
The events that should be included / excluded from the search.

**uuid**
The returned events must include an attribute with the given UUID, or alternatively the event's UUID must match the value(s) passed.

The keywords false or null should be used for optional empty parameters in the URL.

```
https://<misp url>/attributes/restSearch/download/[value]/[type]/[category]/[org]/[tag]/[from]/[to]/[last]/[eventid]/[withattachments]/[uuid]
```

Value, type, category and org are optional. It is possible to search for several terms in each category by joining them with the '&&' operator. It is also possible to negate a term with the '!' operator. Please be aware the colons (:) cannot be used in the tag search. Use semicolons instead (the search will automatically search for colons instead). For example, in order to search for all attributes created by your organisation that contain 192.168 or 127.0 but not 0.1 and are of the type ip-src, excluding the events that were tagged tag1 use the following syntax:

```
https://<misp url>/attributes/restSearch/download/192.168&&127.0&&!0.1/ip-src/false/CIRCL/!tag1
```

You can also use search for IP addresses using CIDR. Make sure that you use '|' (pipe) instead of '/' (slashes). Please be aware the colons (:) cannot be used in the tag search. Use semicolons instead (the search will automatically search for colons instead). See below for an example:

```
```

### Export attributes of event with specified type as XML

If you want to export all attributes of a pre-defined type that belong to an event, use the following syntax:

```
https://<misp url>/attributes/returnAttributes/download/[id]/[type]/[sigOnly]
```

sigOnly is an optional flag that will block all attributes from being exported that don't have the IDS flag turned on. It is possible to search for several types with the '&&' operator and to exclude values with the '!' operator. For example, to get all IDS signature attributes of type md5 and sha256, but not filename|md5 and filename|sha256 from event 25, use the following:
Filtering event metadata

As described in the REST section, it is possible to retrieve a list of events along with their metadata by sending a GET request to the `/events` API. However, this API in particular is a bit more versatile. You can pass search parameters along to search among the events on various fields and retrieve a list of matching events (along with their metadata). Use the following URL:

https://<misp url>/events/index

POST a JSON object with the desired lookup fields and values to receive a JSON back. An example for a valid lookup:

```json
{ "searchinfo": "Locky", "searchpublished": 1, "searchdistribution": 0 }
```

The list of valid parameters:

- **searchpublished**: Filters on published or unpublished events [0,1] - negatable
- **searchinfo**: Filters on strings found in the event info - negatable
- **searchtag**: Filters on attached tag names - negatable
- **searcheventid**: Filters on specific event IDs - negatable
- **searchthreatlevel**: Filters on a given event threat level [1,2,3,4] - negatable
- **searchdistribution**: Filters on the distribution level [0,1,2,3] - negatable
- **searchanalysis**: Filters on the given analysis phase of the event [0,1,2,3] - negatable
- **searchattribute**: Filters on a contained attribute value - negatable
- **searchorg**: Filters on the creator organisation - negatable
- **searchemail**: Filters on the creator user's email address (admin only) - negatable
- **searchDatefrom**: Automation and MISP API
Filters on the date, anything newer than the given date in YYYY-MM-DD format is taken - non-negatable

**searchDateuntil:**
Filters on the date, anything older than the given date in YYYY-MM-DD format is taken - non-negatable

## Download attachment or malware sample

If you know the attribute ID of a malware-sample or an attachment, you can download it with the following syntax:

```html
https://<misp url>/attributes/downloadAttachment/download/[Attribute_id]
```

## Download malware sample by hash

You can also download samples by knowing its MD5 hash. Simply pass the hash along as a JSON/XML object or in the URL (with the URL having overruling the passed objects) to receive a JSON/XML object back with the zipped sample base64 encoded along with some contextual information.

You can also use this API to get all samples from events that contain the passed hash. For this functionality, just pass the "allSamples" flag along. Note that if you are getting all samples from matching events, you can use all supported hash types (md5, sha1, sha256) for the lookup.

You can also get all the samples from an event with a given event ID, by passing along the eventID parameter. Make sure that either an event ID or a hash is passed along, otherwise an error message will be returned. Also, if no hash is set, the allSamples flag will get set automatically.

```html
https://<misp url>/attributes/downloadSample/[hash][allSamples]/[eventID]
```

**POST message payload (XML):**

```xml
:request"><hash>7c12772809c1c3deda6103b10fdfa8</hash><allSamples>1</allSamples><eventID>13</eventID></request>
```

**POST message payload (json):**

```json
{"request": {"hash": "7c12772809c1c3deda6103b10fdfa8", "allSamples": 1, "eventID": 13}}
```

A description of all the parameters in the passed object:

**hash**
A hash in MD5 format. If allSamples is set, this can be any one of the following: md5, sha1, sha256.

**allSamples**
If set, it will return all samples from events that have a match for the hash provided above.

**eventID**
If set, it will only fetch data from the given event ID.

## Upload malware samples using the "Upload Sample" API

```html
https://<misp url>/events/upload_sample/[Event_id]
```
This API will allow you to populate an event that you have modify rights to with malware samples (and all related hashes). Alternatively, if you do not supply an event ID, it will create a new event for you.

The files have to be base64 encoded and POSTed as explained below. All samples will be zipped and password protected (with the password being "infected"). The hashes of the original file will be captured as additional attributes.

For sample upload (for objects in general) there is no check for duplicates.

The event ID is optional. MISP will accept either a JSON or an XML object posted to the above URL.

The general structure of the expected objects is as follows:

```
{
    "request": {
        "files": [
            {"filename": "filename1", "data": "base64encodedfile1"},
            {"filename": "filename2", "data": "base64encodedfile2"},
            "optional_parameter1", "optional_parameter2", "optional_parameter3"
        ]
    }
}
```

JSON:

```
{
    "request": {
        "files": [
            {"filename": "test1.txt", "data": "dGVzdA=="},
            {"filename": "test2.txt", "data": "dGVzdDI="},
            "distribution": 1, "info": "test", "event_id": 15
        ]
    }
}
```

XML:

```
<request>
    <files>
        <filename>test3.txt</filename><data>dGVzdA==</data></files>
        <files>
            <filename>test4.txt</filename><data>dGVzdDI=</data></files>
        <info>test</info>
        <distribution>1</distribution>
        <event_id>15</event_id>
    </files>
</request>
```

The following optional parameters are expected:

- **event_id**
  The Event's ID is optional. It can be either supplied via the URL or the POSTed object, but the URL has priority if both are provided. Not supplying an event ID will cause MISP to create a single new event for all of the POSTed malware samples. You can define the default settings for the event, otherwise a set of default settings will be used.

- **distribution**
  The distribution setting used for the attributes and for the newly created event, if relevant. [0-3]

- **to_ids**
  You can flag all attributes created during the transaction to be marked as "to_ids" or not.

- **category**
  The category that will be assigned to the uploaded samples. Valid options are: Payload delivery, Artifacts dropped, Payload Installation, External Analysis.

- **info**
  Used to populate the event info field if no event ID supplied. Alternatively, if not set, MISP will simply generate a message showing that it's a malware sample collection generated on the given day.

- **analysis**
  The analysis level of the newly created event, if applicable. [0-2] threat_level_id: The threat level ID of the newly created event, if applicable. [0-3]

- **comment**
  This will populate the comment field of any attribute created using this API.

The **threat_level_id** is mapped as such:

<table>
<thead>
<tr>
<th>Value</th>
<th>Threat Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>high</td>
</tr>
</tbody>
</table>
Proposals API

You can interact with the proposals via the API directly since version 2.3.148.

<table>
<thead>
<tr>
<th>HTTP</th>
<th>URL</th>
<th>Explanation</th>
<th>Expected Payload</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>GET</td>
<td>/shadow_attributes/view/[proposal_id]</td>
<td>View a proposal</td>
<td>N/A</td>
<td>ShadowAttribute object</td>
</tr>
<tr>
<td>POST</td>
<td>/shadow_attributes/add/[event_id]</td>
<td>Propose a new attribute to an event</td>
<td>ShadowAttribute object</td>
<td>ShadowAttribute object</td>
</tr>
<tr>
<td>POST</td>
<td>/shadow_attributes/edit/[attribute_id]</td>
<td>Propose an edit to an attribute</td>
<td>ShadowAttribute object</td>
<td>ShadowAttribute object</td>
</tr>
<tr>
<td>POST</td>
<td>/shadow_attributes/accept/[proposal_id]</td>
<td>Accept a proposal</td>
<td>N/A</td>
<td>Message</td>
</tr>
<tr>
<td>POST</td>
<td>/shadow_attributes/discard/[proposal_id]</td>
<td>Discard a proposal</td>
<td>N/A</td>
<td>Message</td>
</tr>
</tbody>
</table>

When posting a shadow attribute object, use the following format

JSON:

```json
{"request": {
"ShadowAttribute": {
"value": "5.5.5.5",
"to_ids": false,
"type": "ip-dst",
"category": "Network activity"
}}}
```

XML:

```xml
<request><ShadowAttribute><value>5.5.5.5</value><to_ids>0</to_ids><type>ip-src</type><category>Network activity</category></ShadowAttribute></request>
```

None of the above fields are mandatory, but at least one of them has to be provided.

Sharing groups

MISP allows sharing groups to be retrieved via the API.

https://<misp url>/sharing_groups/index.json

Based on the API key used, the list of visible sharing groups will be returned in a JSON file. The JSON includes the organization parts of a given sharing group along with the associated server.

Enable, disable and fetching feeds via the API

The MISP feeds can be enabled via the API.
A feed can be enabled by POSTing on the following URL (feed_id is the id of the feed):

```
/feeds/enable/feed_id
```

A feed can be disabled by POSTing on the following URL (feed_id is the id of the feed):

```
/feeds/disable/feed_id
```

All feeds can be cached via the API:

```
/feeds/cacheFeeds/all
```

or you can replace all by the feed format to fetch like `misp` or `freetext`. `all` can be replaced with the `id` value of the feed to fetch a specific feed.

To fetch a feed or all feeds:

```
/feeds/fetchFromFeed/feed_id
/feeds/fetchFromAllFeeds
```

This API can be also used to download feeds at regular interval via cronjobs or alike.

**Sightings API**

MISP allows Sightings data to be conveyed in several ways.

The most basic way is to POST a blank message to the Sightings API with the attribute ID or attribute UUID. This will create a sightings entry with the creation of the entry as the timestamp for the organisation of the authenticated user.

```
https://<misp url>/sightings/add/[attribute_id]
https://<misp url>/sightings/add/[attribute_uuid]
```

Alternatively, it is possible to POST a JSON object and gain additional granularity. The following fields are recognised by the API:

- **id**
  - The attribute's ID

- **uuid**
  - The attribute's UUID

- **value**
  - Will create a sighting for any attribute with the given value or for composite attributes, for the value matching any element of the attribute value

- **values**
  - Expects a list, MISP will create sightings for any attribute matching any of the given values or for composite attributes, for any of the values matching any element of the attribute value

- **timestamp**
  - Unix timestamp of the sighting, overrides the current time

Some examples:

To create a sighting for attribute #9001:

```
```
To create a sighting for any attribute with the value being teamliquid.net or 173.231.136.216 with the time of sighting being:

"values": ["teamliquid.net", "173.231.136.216"], "timestamp": 1460558710

It is also possible to POST a STIX indicator with sighting data to the following URL (keep in mind that the content type has to be XML):

https://<misp url>/sightings/add/stix

MISP will use the sightings related observables to gather all values and create sightings for each attribute that matches any of the values. If no related observables are provided in the Sighting object, then MISP will fall back to the Indicator itself and use its observables’ values to create the sightings. The time of the sighting is the current time, unless the timestamp attribute is set on the Sightings object, in which case that is taken.

An example STIX sightings document:
POSTing this as the message's body to MISP will sight any attributes visible to the user with the value "malicious2.example.com". For composite types, a match on a component will also trigger a sighting (so for example for attributes of type domain/ip a domain match would be sufficient).

If no Related observables are set in the Sighting itself, MISP will fall back to the observable directly contained in the indicator. So in the following example:

```
<stix:STIX_Package
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
 xmlns:stix="http://stix.mitre.org/stix-1"
 xmlns:indicator="http://stix.mitre.org/Indicator-2"
 xmlns:stixCommon="http://stix.mitre.org/common-1"
 xmlns:cybox="http://cybox.mitre.org/cybox-2"
 xmlns:AddressObject="http://cybox.mitre.org/objects#AddressObject-2"
 xmlns:DomainNameObj="http://cybox.mitre.org/objects#DomainNameObject-1"
 xmlns:cyboxVocabs="http://cybox.mitre.org/default_vocabularies-2"
 xmlns:stixVocabs="http://stix.mitre.org/default_vocabularies-1"
 xmlns:example="http://example.com/"
 xsi:schemaLocation="http://stix.mitre.org/stix-1 ../stix_core.xsd"
 http://stix.mitre.org/Indicator-2 ../indicator.xsd"
 http://cybox.mitre.org/objects#DomainNameObject-1 http://cybox.mitre.org/XMLSchema/objects/Domain_Name/1.0/Domain_Name_Object.xsd
 http://cybox.mitre.org/common-1 http://cybox.mitre.org/XMLSchema/common/1.1.1/stix_common.xsd
 http://cybox.mitre.org/default_vocabularies-2 ../cybox/cybox_default_vocabularies.xsd
 http://stix.mitre.org/default_vocabularies-1 ../stix_default_vocabularies.xsd
 http://cybox.mitre.org/objects#AddressObject-2 ../cybox/objects/Address_Object.xsd"
 id="example:STIXPackage-33fe3b22-0201-47cf-85d0-97c02164528d"
 timestamp="2014-05-08T09:00:00.000000Z"
 version="1.1.1"
>
 <stix:STIX_Header>
   <stix:Title>Example watchlist that contains IP information</stix:Title>
 </stix:STIX_Header>
 <stix:Package_Intent xsi:type="stixVocabs:PackageIntentVocab-1.0">Indicators - Watchlist</stix:Package_Intent>
 <stix:STIX_Header>
   <stix:Indicators>
     <stix:Indicator id="example:Indicator-2e20c5b2-56fa-46cd-9662-8f199c89d2c9"
     timestamp="2014-05-08T09:00:00.000000Z">
       <stix:Type xsi:type="stixVocabs:IndicatorTypeVocab-1.1">Domain Watchlist</stix:Type>
       <stix:Observable id="example:Observable-87c9a5bb-d005-4b3e-8901-0ff72bfa6d20"
     xsi:type="cybox:Object"
     id="example:Object-a3d36250-42fa-4653-9172-87b87598390c">
         <cybox:Properties xsi:type="cyboxVocabs:PropertiesVocab-1.1" type="FQDN">
           <cybox:DomainNameObj:Value condition="Equals" apply_conditions="ANY">malicious1.example.com</cybox:DomainNameObj:Value>
         </cybox:Properties>
       </cybox:Object>
     </stix:Observable>
   </stix:Indicators>
 </stix:STIX_Package>
```
MISP would create sightings for attributes matching any of the following: malicious1.example.com, malicious2.example.com, malicious3.example.com

Warninglists API

GET warninglists/index

Description

Return the index of warninglists enabled on the MISP instance

Parameters

- id

Output

```json
... {
  "warninglists": [{
    "id": "17",
    "name": "List of known Office 365 URLs and IP address ranges",
    "type": "string",
    "description": "Office 365 URLs and IP address ranges",
    "enabled": true,
    "warninglist_entry_count": "1516",
    "valid_attributes": "ip-src, ip-dst, domain|ip, hostname",
    "date_published": "2014-05-08T09:00:00.000000Z"
  },
  {
    "id": "16",
    "name": "List of known google domains",
    "type": "string",
    "description": "Event contains one or more entries of known google domains",
    "enabled": true,
    "warninglist_entry_count": "665",
    "valid_attributes": "domain, hostname, domain|ip",
    "date_published": "2014-05-08T09:00:00.000000Z"
  },
  {
    "id": "15",
    "name": "List of hashes for EICAR test virus",
    "type": "string",
    "description": "Event contains one or more entries based on hashes for EICAR test virus",
    "enabled": true,
    "warninglist_entry_count": "215",
    "valid_attributes": "md5, sha1, sha256, sha512, filename|md5, filename|sha1, filename|sha256, filename|sha512",
    "date_published": "2014-05-08T09:00:00.000000Z"
  },
  {
    "id": "14",
    "name": "Top 1000 website from Alexa",
    "type": "string",
    "description": "Event contains one or more entries from the top 1000 of the most used website (Alexa).",
    "enabled": true,
    "warninglist_entry_count": "1890",
    "valid_attributes": "hostname, domain|ip",
    "date_published": "2014-05-08T09:00:00.000000Z"
  },
  {
    "id": "13",
    "name": "TLDs as known by IANA",
    "type": "string",
    "description": "Event contains one or more TLDs as at tribute with an IDS flag set",
    "enabled": true,
    "warninglist_entry_count": "1290",
    "valid_attributes": "hostname, domain, domain|ip",
    "date_published": "2014-05-08T09:00:00.000000Z"
  },
  {
    "id": "12",
    "name": "Second level TLDs as known by Mozilla Foundation",
    "type": "string",
    "description": "Event contains one or more second level TLDs as attribute with an IDS flag set",
    "enabled": true,
    "warninglist_entry_count": "6462",
    "valid_attributes": "hostname, domain, domain|ip",
    "date_published": "2014-05-08T09:00:00.000000Z"
  },
  {
    "id": "11",
    "name": "List of RFC 5735 CIDR blocks",
    "type": "cidr",
    "description": "Event contains one or more entries part of the RFC 5735 CIDR blocks - Special use IPv4 Addressess",
    "enabled": true,
    "warninglist_entry_count": "15",
    "valid_attributes": "ip-src, ip-dst, domain|ip",
    "date_published": "2014-05-08T09:00:00.000000Z"
  },
  {
    "id": "10",
    "name": "List of RFC 3849 CIDR blocks",
    "type": "cidr",
    "description": "Event contains one or more entries part of the RFC 3849 CIDR blocks",
    "enabled": true,
    "warninglist_entry_count": "15",
    "valid_attributes": "ip-src, ip-dst, domain|ip",
    "date_published": "2014-05-08T09:00:00.000000Z"
  },
  {
    "id": "9",
    "name": "List of RFC 1918 CIDR blocks",
    "type": "cidr",
    "description": "Event contains one or more entries part of the RFC 1918 CIDR blocks",
    "enabled": true,
    "warninglist_entry_count": "3",
    "valid_attributes": "ip-src, ip-dst, domain|ip",
    "date_published": "2014-05-08T09:00:00.000000Z"
  },
  {
    "id": "8",
    "name": "List of known IPv6 public DNS resolvers",
    "type": "string",
    "description": "Event contains one or more public IPv6 DNS resolvers as attribute with an IDS flag set",
    "enabled": true,
    "warninglist_entry_count": "15"
  },
  {
    "id": "7",
    "name": "List of known IPv4 public DNS resolvers",
    "type": "string",
    "description": "Event contains one or more public IPv4 DNS resolvers as attribute with an IDS flag set",
    "enabled": true,
    "warninglist_entry_count": "15"
  },
  {
    "id": "6",
    "name": "List of known IPv4 public DNS resolvers",
    "type": "string",
    "description": "Event contains one or more public IPv4 DNS resolvers as attribute with an IDS flag set",
    "enabled": true,
    "warninglist_entry_count": "15"
  },
  {
    "id": "5",
    "name": "List of known Office 365 URLs and IP address ranges",
    "type": "string",
    "description": "Office 365 URLs and IP address ranges",
    "enabled": true,
    "warninglist_entry_count": "1516",
    "valid_attributes": "ip-src, ip-dst, domain|ip, hostname",
    "date_published": "2014-05-08T09:00:00.000000Z"
  },
  {
    "id": "4",
    "name": "List of known google domains",
    "type": "string",
    "description": "Event contains one or more entries of known google domains",
    "enabled": true,
    "warninglist_entry_count": "665",
    "valid_attributes": "domain, hostname, domain|ip",
    "date_published": "2014-05-08T09:00:00.000000Z"
  },
  {
    "id": "3",
    "name": "List of hashes for EICAR test virus",
    "type": "string",
    "description": "Event contains one or more entries based on hashes for EICAR test virus",
    "enabled": true,
    "warninglist_entry_count": "215",
    "valid_attributes": "md5, sha1, sha256, sha512, filename|md5, filename|sha1, filename|sha256, filename|sha512",
    "date_published": "2014-05-08T09:00:00.000000Z"
  },
  {
    "id": "2",
    "name": "Top 1000 website from Alexa",
    "type": "string",
    "description": "Event contains one or more entries from the top 1000 of the most used website (Alexa).",
    "enabled": true,
    "warninglist_entry_count": "1890",
    "valid_attributes": "hostname, domain|ip",
    "date_published": "2014-05-08T09:00:00.000000Z"
  },
  {
    "id": "1",
    "name": "TLDs as known by IANA",
    "type": "string",
    "description": "Event contains one or more TLDs as at tribute with an IDS flag set",
    "enabled": true,
    "warninglist_entry_count": "1290",
    "valid_attributes": "hostname, domain, domain|ip",
    "date_published": "2014-05-08T09:00:00.000000Z"
  }
}
```
count" : "172", "valid_attributes" : "ALL" },
{"Warninglist" :{"id" : "7", "name" : "List of known IPv4 public DNS resolvers", "type" : "string", "description" : "Event contains one or more public IPv4 DNS resolvers as attribute with an IDS flag set", "version" : "20160803", "enabled" : "true", "warninglist_entry_count" : "77857", "valid_attributes" : "ALL" },
{"Warninglist" :{"id" : "5", "name" : "List of known microsoft domains", "type" : "string", "description" : "Event contains one or more entries of known microsoft domains", "version" : "1", "enabled" : "true", "warninglist_entry_count" : "152", "valid_attributes" : "domain, hostname, domain[ip]" },
{"Warninglist" :{"id" : "4", "name" : "List of IPv6 link local blocks", "type" : "cidr", "description" : "Event contains one or more entries part of the IPv6 link local prefix (RFC 4291)", "version" : "1", "enabled" : "true", "warninglist_entry_count" : "1", "valid_attributes" : "ip-src, ip-dst, domain[ip]" }

Example

```
curl --header "Authorization: a4PLf8QICdDdOmFjwtdSySkCqm9CvW0Vq7mpUUF " --header "Accept: application/json" -h "Content-Type: application/json" -X "GET" https://10.50.13.60/warninglists/index
```

GET warninglists/view/1

Description

Return the a warninglist by id

Parameters

- id

Output

- to long

Example

```
curl --header "Authorization: a4PLf8QICdDdOmFjwtdSySkCqm9CvW0Vq7mpUUF " --header "Accept: application/json" -h "Content-Type: application/json" -X "GET" https://10.50.13.60/warninglists/view/1
```

Attribute statistics API

If you are interested in the attribute type or attribute category data distribution on your instance, MISP offers an API that will create an aggregates list. To access the API, simple sent a GET request to:

```
https://<misp url>/attributes/attributeStatistics/[context]/[percentage]
```

Where the following parameters can be set:

**Context**

Set whether you are interested in the type or category statistics of your instance. This parameter can be either set to "type" or "category", with type being the default setting if the parameter is not set.

**Percentage**

An optional field, if set, it will return the results in percentages instead of the count.
The results are always returned as JSON.

Sample output of the types in percentages from CIRCL's MISP instance:

```json
{
  "AS": "0.015%",
  "attachment": "0.177%",
  "btc": "0.005%",
  "campaign-name": "0.005%",
  "comment": "1.47%",
  "domain": "15.992%",
  "domain\nip": "0.009%",
  "email-attachment": "0.207%",
  "email-dst": "0.123%",
  "email-src": "0.192%",
  "email-subject": "0.140%",
  "filename": "3.608%",
  "filename|md5": "0.349%",
  "filename|sha1": "0.894%",
  "filename|sha256": "0.052%",
  "hostname": "17.558%",
  "http-method": "0.045%",
  "ip-dst": "7.087%",
  "ip-src": "2.707%",
  "link": "5.748%",
  "malware-sample": "0.702%",
  "malware-type": "0.005%",
  "md5": "21.064%",
  "mutex": "0.278%",
  "named\pipe": "0.349%",
  "other": "1.495%",
  "pattern-in-file": "0.192%",
  "pattern-in-memory": "0.303%",
  "pattern-in-traffic": "0.051%",
  "regkey": "0.126%",
  "regkey\value": "0.187%",
  "sha1": "8.921%",
  "sha256": "5.597%",
  "snort": "0.045%",
  "target-machine": "0.248%",
  "target-org": "0.01%",
  "target-user": "0.106%",
  "text": "0.934%",
  "threat-actor": "0.086%",
  "url": "2.258%",
  "user-agent": "0.081%",
  "vulnerability": "0.182%",
  "whois-registrant-email": "0.01%",
  "x509-fingerprint-sha1": "0.01%",
  "yara": "0.086%"
}
```

Additional statistics

Additional statistics are available as JSON which are the statistics also usable via the user interface. A ".json" can be appended to the following URLs:

- https://<misp url>/users/statistics/tags.json
- https://<misp url>/users/statistics.json
- https://<misp url>/users/statistics/attributehistogram.json
- https://<misp url>/users/statistics/orgs.json

An example output of https://users/statistics.json:
MISP modules

Description

It is possible call misp-modules directly from API. If the module needs credentials, API will get the information directly from MISP configuration.

GET /modules/

Retrieve a list of all modules enabled.

Example

```bash
```

Output

```json
[
  {
    "name": "passivetotal",
    "type": "expansion",
    "mispattributes": {
      "input": [
        "hostname",
        "domain",
        "ip-src",
        "ip-dst"
      ],
      "output": [
        "ip-src",
        "ip-dst",
        "hostname",
        "domain"
      ]
    },
    "meta": {
      "description": "PassiveTotal expansion service to expand values with multiple Passive DNS sources",
      "config": [
        "username",
        "password"
      ]
    }
  }
]
```
POST /modules/queryEnrichment

Call any enabled module.

Example

Content of dns.json

```
{
    "hostname": "www.foo.be",
    "module": "dns"
}
```

Query using MISP API

```
```

The output will be following JSON:

```json
{
   "results": [
   {
      "types": [
      "ip-src",
      "ip-dst"
      ],
      "values": [
      "188.65.217.78"
      ]
   }
   ]
}
```
PyMISP - Python Library to access MISP

PyMISP is a Python library to access MISP platforms via their REST API.

PyMISP allows you to fetch events, add or update events/attributes, add or update samples or search for attributes.

Note that you need to have Auth Key access in your MISP instance to use PyMISP

Capabilities

- Add, get, update, publish, delete events
- Add or remove tags
- Add file attributes: hashes, registry key, patterns, pipe, mutex
- Add network attributes: IP dest/src, hostname, domain, url, UA, ...
- Add Email attributes: source, destination, subject, attachment, ...
- Upload/download samples
- Update sightings
- Proposals: add, edit, accept, discard
- Full text search and search by attributes
- Get STIX event
- Export statistics And even more, just look at the api.py file

Installation

You can install PyMISP by either using pip or by getting the last version from the GitHub repository

Install from pip

```bash
pip install pymisp
```

Install the latest version from the repository

```bash
git clone https://github.com/MISP/PyMISP.git && cd PyMISP
python setup.py install
```

Note that you will also need to install requests if you don't have it already.

Getting started

You now need to get your automation key. You can find it on the automation page:

```bash
https://<misp url>/events/automation
```

or on your profile

```bash
https://<misp url>/users/view/me
```

If you did not install using the repository, you can still fetch it to get examples to work on:
git clone https://github.com/MISP/PyMISP.git

In order to use these, you need to create a file named keys.py in the examples folder and edit it to put the url of your MISP instance and your automation key.

```
cd examples
cp keys.py.sample keys.py
vim keys.py
```

Once you are done with it, you are ready to start.

This is how keys.py looks:

```
#!/usr/bin/env python
# -*- coding: utf-8 -*-

misp_url = 'https://'
misp_key = 'Your MISP auth key' # The MISP auth key can be found on the MISP web interface under the automation section
misp_verifycert = True
```

### Using PyMISP

To have a better understanding of how to use PyMISP, we will have a look at one of the existing examples: add_named_attribute.py This script allow us to add an attribute to an existing event while knowing only its type (the category is determined by default).

```
#!/usr/bin/env python
# -*- coding: utf-8 -*-

from pymisp import PyMISP
from keys import misp_url, misp_key
import argparse

# For python2 & 3 compat, a bit dirty, but it seems to be the least bad one
try:
    input = raw_input
except NameError:
    pass

def init(url, key):
    return PyMISP(url, key, True, 'json', debug=True)
```

Just a few lines to be sure that python 2 and 3 are supported

```
if __name__ == '__main__':
    parser = argparse.ArgumentParser(description='Create an event on MISP. ')
    parser.add_argument('-i', '--event', type=int, help='The id of the event to update.')
```

This function will create a PyMISP object that will be used later to interact with the MISP instance. As seen in the api.py, a PyMISP object need to know both the URL of the MISP instance and the API key to use. It can also take additional and not mandatory data, such as the use or not of SSL or the name of the export format.
Then the function starts by preparing the awaited arguments:

- **event**: The event that will get a new attribute
- **type**: The type of the attribute that will be added. See [here](#) for more information
- **value**: The value of the new attribute

```python
misp = init(misp_url, misp_key)
```

Thanks to the previously created function, we create a PyMISP object.

```python
event = misp.get_event(args.event)
event = misp.add_named_attribute(event, args.type, args.value)
```

In order to add the new argument, we first need to fetch the event in the MISP database using the `get_event` function which only need the event_id. Then only once we have it, we can call the function `add_named_attribute` that will add the argument.

```python
print(event)
```

Finally the new event is printed, so we can check that the attribute was correctly added, and that a category was attached to it automatically.

**Existing examples**

As the name implies you will find several example scripts in the examples folder. For each you can get help if you do `scriptname.py -h`

Let us have a look at some of these examples:

**add_named_attribute.py**

Allow to add an argument to an existing event by giving only the type of the attribute. The category will be set with a default value.

Arguments:

- **event**: The id of the event to update.
- **type**: The type of the added attribute.
- **value**: The value of the attribute.

**add_user.py**

Allow to add a user by giving the mandatory fields as entries.

Arguments:

- **email**: Email linked to the account.
- **org_id**: Organisation linked to the user.
- **role_id**: Role linked to the user.

**add_user_json.py**
Add the user described in the given json. If no file is provided, returns a json listing all the fields used to describe a user.

Arguments:

- `json_file`: The name of the json file describing the user you want to create.

**create_events.py**

Allow a user to create a new event on the MISP instance.

Arguments:

- `distrib`: The distribution setting used for the attributes and for the newly created event, if relevant. [0-3].
- `info`: Used to populate the event info field if no event ID supplied.
- `analysis`: The analysis level of the newly created event, if applicable. [0-2]
- `threat`: The threat level ID of the newly created event, if applicable. [1-4]

**del.py**

Delete an event or an attribute from a MISP instance. The event has the priority: if both are set, only the event will be deleted.

Arguments:

- `event`: Event ID to delete.
- `attribute`: Attribute ID to delete.

**delete_user.py**

Delete the user with the given id. Keep in mind that disabling users (by setting the disabled flag via an edit) is always preferred to keep user associations to events intact.

Arguments:

- `user_id`: The id of the user you want to delete.

**edit_user.py**

Edit the email of the user designed by the user_id.

Arguments:

- `user_id`: The name of the json file describing the user you want to modify.
- `email`: Email linked to the account.

**edit_user_json.py**

Edit the user designed by the user_id. If no file is provided, returns a json listing all the fields used to describe a user.

Arguments:

- `user_id`: The name of the json file describing the user you want to modify.
- `json_file`: The name of the json file describing your modifications.

**get.py**
Get an event from a MISP instance in json format.

Arguments:
- `event`: Event ID to get.
- `output`: Output file

`last.py`
Download latest events from a MISP instance. A output file can be created to store these events.

Arguments:
- `last`: can be defined in days, hours, minutes (for example 5d or 12h or 30m).
- `output`: Output file

`searchall.py`
Get all the events matching a value.

Arguments:
- `search`: String to search.
- `quiet`: Only display URLs to MISP
- `output`: Output file

`sharing_groups.py`
Get a list of the sharing groups from the MISP instance. No argument.

`sighting.py`
Add sighting.

Arguments:
- `json_file`: The name of the json file describing the attribute you want to add sighting to.

`stats.py`
Output attributes statistics from a MISP instance. No argument.

`suricata.py`
Download Suricata events.

Arguments:
- `all`: Download all suricata rules available.
- `event`: Download suricata rules from one event.

`tags.py`
Get tags from MISP instance. No argument.

`tagstatistics.py`
Get statistics from tags.

Arguments:

- **percentage**: An optional field, if set, it will return the results in percentages, otherwise it returns exact count.
- **namesort**: An optional field, if set, values are sort by the namespace, otherwise the sorting will happen on the value.

**up.py**

Update an existing event regarding the data inside a given json file.

Arguments:

- **event**: Event ID to modify.
- **input**: Input file

**upload.py**

Send malware sample to MISP.

Arguments:

- **upload**: File or directory of files to upload.
- **event**: Not supplying an event ID will cause MISP to create a single new event for all of the POSTed malware samples.
- **distrib**: The distribution setting used for the attributes and for the newly created event, if relevant. [0-3].
- **ids**: You can flag all attributes created during the transaction to be marked as "to_ids" or not.
- **categ**: The category that will be assigned to the uploaded samples. Valid options are: Payload delivery, Artefacts dropped, Payload Installation, External Analysis.
- **info**: Used to populate the event info field if no event ID supplied.
- **analysis**: The analysis level of the newly created event, if applicable. [0-2]
- **threat**: The threat level ID of the newly created event, if applicable. [1-4]
- **comment**: Comment for the uploaded file(s).

**users_list.py**

Get a list of the sharing groups from the MISP instance. No argument.

**Going further**

**feed-generator**

It is used to generate the CIRCL OSINT feed. This script export the events as json, based on tags, organisation, events,... It automatically update the dumps and the metadata file.

Here is an example of a config file:

```python
url = ''
key = ''
ssl = True
outputdir = 'output'
# filters = {
#     'tag': 'tlp : white|feed-export|!privint',
#     'org': 'CIRCL'}
filters = {}

valid_attribute_distribution_levels = ['0', '1', '2', '3', '4', '5']
```
Consuming feed

As the feed is a simple set of MISP json files, the files can be easily imported directly into any MISP instance. The script below processes the manifest file of an OSINT feed and reimport them in a MISP directly.

```python
#!/usr/bin/env python
# -*- coding: utf-8 -*-
from pymisp import PyMISP
import requests
url = 'https://www.circl.lu/doc/misp/feed-osint/
osintcircl = requests.get('{}manifest.json'.format(url))
misp = PyMISP('http://misp.test/', 'key', False, 'json')
for uri in osintcircl.json():
    req = requests.get('{}{}.json'.format(url,uri))
misp.add_event(req.json())
```

ioc-2-misp

Allow to import OpenIOC files into MISP easily. It is also possible to set specific tags on these events.

Situational Awareness

- attribute_treeemap.py generate a tree-map showing the distribution of the attributes on the MISP instance.
- tags_* : these functions help having statistics and graphs about the tag repartition.

Simple example on fetching the last events

```python
#!/usr/bin/env python
# -*- coding: utf-8 -*-
from pymisp import PyMISP
from keys import misp_url, misp_key, misp_verifycert
import argparse
import os
import json

# Usage for pipe masters: ./last.py -l 5h | jq .

def init(url, key):
    return PyMISP(url, key, misp_verifycert, 'json')

def download_last(m, last, out=None):
    result = m.download_last(last)
    if out is None:
        if 'response' in result:
            print(json.dumps(result['response']))
        else:
            print('No results for that time period')
            exit(0)
    else:
        with open(out, 'w') as f:
            f.write(json.dumps(result['response']))

if __name__ == '__main__':
    parser = argparse.ArgumentParser(description='Download latest events from a MISP instance.')
    parser.add_argument("-l", "--last", required=True, help="can be defined in days, hours, minutes (for example...")
```
```python
e 5d or 12h or 30m).
parser.add_argument("-o", "--output", help="Output file")

args = parser.parse_args()

if args.output is not None and os.path.exists(args.output):
    print("Output file already exists, abord.")
    exit()

misp = init(misp_url, misp_key)

download_last(misp, args.last, args.output)
```
Create an event based on a report

[warning] A specific permission is required to create an event.

For this example, we will use a report found on Bleeping Computer, so considered as OSINT.

Researcher finds the Karma Ransomware being distributed via Pay-per-Install Network

By Lawrence Abrams

A security researcher named slipstream/RoL has discovered the Karma Ransomware, which pretends to be a Windows optimization program called Windows-TuneUp. What is worse is that this sample was discovered as software that would potentially be distributed by a pay-per-install software monetization company when people install free software downloaded from the Internet.
Adding an event

First of all, we need to create a new event. To do so, we click the "Add Event" option when on the Events list view.
Then we get the add event form.

Add Event

Date
2016-11-16

Distribution
All communities

Threat Level
High

Analysis
Initial

Event Info
Quick Event Description or Tracking Info

GFI sandbox
Browse... No file selected.

Add
Let’s fill it with the data we already have:

- **Date**: Here we will put the date of the report, so 2016-11-14
- **Distribution**: Depending on the event, we might want it to be more or less spread across the MISP instances. For this one, since it is a public report, there is no reason to limit the diffusion so “All communities”.
- **Threat Level**: Self-explanatory. Since the ransomware in the report is not using a huge exploit, we can use low, or undefined as we don’t really know. We’ll go for the latter since it can be edited.
- **Analysis**: Give the current stage of the analysis. Since the report is published, we can assume that the analysis is completed.
- **Event Info**: The event’s info is in fact the name or title of the event, so it seems legit to put the title of the report here as well. Since it is public information, we also prefix it with “OSINT”.
- **GFI sandbox**: Since we don’t have any sample or anything here, we leave this alone.

![Add Event Form](image-url)
Then just press the blue "Add" button and here we have a brand new event. Empty.
Adding Attributes

Now it is time to populate this event. But before even adding IoC, we are going to add global information about the report itself: the link of the report and a short explanation or introduction. To do so, we need to click on the "Add Attribute" option in the side menu. This will show us this view:

![Add Attribute form](image-url)
• First we are going to add the link of the report. Since it has been written by an other researcher, it will be considered as an "External analysis", we choose this category.
• Concerning the type, regarding the kind of data we are adding it is obvious that we will choose the "link" type.
• The distribution field can be a little tricky. We can either choose one of the option that was already available at event level or "Inherit event". If we choose the latter, the attribute will be shared the same way as the event it is included in (here to "All communities"). On the other hand, if we choose manually a distribution for the attribute, the most restrictive between event distribution and attribute distribution will be applied. That is to say: if both event and attribute distributions are the same, there will be no change (similar to "Inherit event"). However, if for instance the event distribution is "all communities" while the attribute is limited to "This community only", the event will indeed be distributed to all communities but without this particular attribute which will be limited to this community only. The same works the other way around, if the attribute can be distributed to "all communities" while the related event is limited to this community, the attribute being dependant of the event, it will be shared to this community only, basing its distribution on the event (most restrictive) one.
• The value is simply the data we want to add, here it is the link of the report.
• The contextual comment is a field that will not be used for correlation and is mainly there to add some complementary information on the attribute. Can be a port for an IP, or an indication of any type. Here there is no particular information to add, except maybe tell that it is the source of the report, so let us put this information.
• "for Intrusion Detection System" is used to set the IDS flag or not. If set, the attribute will be used as an IDS signature when exporting the NIDS data. In this case, we have no reason to check it.
• The Batch Import is a useful option when we need to add several IoC of the same category/type which allow you to add them at once by separated by a line break between each line in the value field. However it is of no use here.

![Add Attribute Form](image-url)
All fields are properly filled? Then let's press the "submit" button, and Ta-dah!
Now we can do a similar procedure to add an introduction to the report (that is to say the first paragraph of the report). We will simply change the type for text. But this time, we will access the add attribute form by clicking on the small + symbol next to the attribute table.
The same form as before will appear in a popup.
Again, we fill it with the required data.

A security researcher named slipstream/RoL has discovered the Karma Ransomware, which pretends to be a Windows optimization program called Windows TuneUp. What is worse is that this sample was discovered as software that would potentially be distributed by a pay-per-install software monetization company when people install free software downloaded from the Internet.
Then we submit it by clicking on the blue button *Et voilà!*
Okay, now it is time to add some Indicators of Compromise. In this report, they are mainly listed at the end.

<table>
<thead>
<tr>
<th>Files associated with the Karma Ransomware</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows-TuneUp.exe</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Registry entries associated with the Karma Ransomware</th>
</tr>
</thead>
<tbody>
<tr>
<td>HKLM\SOFTWARE\Microsoft\Windows\CurrentVersion\Explorer &quot;auth&quot;</td>
</tr>
<tr>
<td>HKLM\SOFTWARE\Microsoft\Windows\CurrentVersion\Run &quot;Saffron&quot;=&quot;%Desktop%# DECRYPT MY FILES #.html&quot;</td>
</tr>
<tr>
<td>HKLM\SOFTWARE\Microsoft\Windows\CurrentVersion\Run &quot;Saffron&quot;=&quot;%Desktop%# DECRYPT MY FILES #.txt&quot;</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IOCs:</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHA256: 6545ae2bb811094a257a7fb25b1eb8cb63cfc66a742fa76fd44bd7d95b74fe0</td>
</tr>
<tr>
<td>SHA256: cf5f6a29f8e1f135aa68286c7298e9930be2cb93888e3f94c0cd9b13f5bc4092</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Network Communication:</th>
</tr>
</thead>
<tbody>
<tr>
<td>karmas2xgg6ccmudp.onion</td>
</tr>
<tr>
<td>windows-tuneup.com/web293/xUser.php</td>
</tr>
</tbody>
</table>
Let's try to define which category/type those IoC belong to.

First, Windows-TuneUp.exe is without a doubt a *filename*, and the associated category may be *Payload delivery*.

Second the registry entries (type *regkey*) seems to be from *Artifacts dropped* category.

Then the hashes that are already said to be *SHA 256*, and a quick test on VirusTotal also reveals that they correspond to the filename seen earlier. so we can add both as an association *filename|SHA256*. Once again, the category will be *Payload delivery*.

And finally the network communication. No doubt here for the category: *Network activity*, and the type might be *url* but for the example, we will let MISP decide for us.

So we begin with the filename. No real change from before for this one, except that we will set the IDS flag to true.
**Freetext Import Tool**

Then we can add the hashes in a similar way. We will had them both alone and combined with the filename. In order to do it quickly, we are going to use the freetext import tool, hidden there.
It will open a popup with a text area field where we will paste our IoC, one per line. As said previously, we add both the hashes alone and with the filename.
Then when we press the submit button, we are redirected on this page to control the sent data.
Here, MISP detected by itself what should be the category and type associated to our IoC and surprise! It matches our suppositions. Plus, it also put the IDS flag, so it is perfect. But before submitting, please double check to be sure all the values are correct and no information was lost (That can happen when the data are not formatted as expected by MISP).

If the results of MISP were not what we expected, we can still modify it, however MISP will only suggest suitable category/type regarding the format of your data. We can change for each attribute individually or all at the same time using the option on the bottom right of the form. The same principle also applies for the comments, individually or for all.
(Yes I have two cursors, MISP is magic!)

We only have the network indicators left, and as said before, we will let MISP determined for us which type is the best for the data we have.
### Freetext Import Results

Below you can see the attributes that are to be created. Make sure that the categories and the types are correct, often several options will be offered.

<table>
<thead>
<tr>
<th>Value</th>
<th>Similar Attributes</th>
<th>Category</th>
<th>Type</th>
<th>IDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>karma2xgg6ccmpd.onion</td>
<td></td>
<td>Payload delivery</td>
<td>filename</td>
<td>✔</td>
</tr>
<tr>
<td>windows-tuneup.com/web293/xUser.php</td>
<td></td>
<td>Network activity</td>
<td>url</td>
<td>✔</td>
</tr>
</tbody>
</table>

[Submit](#)  
[Update all comment fields](#)
Oh well, that was unexpected. In fact, it is not that surprising regarding the format of the tor address that look more like a filename than like a url but it is still a problem, since we can’t change the type nor the category to a more consistant one. This is indeed one of the limitation of freetext import. To solve this issue, we will use a simple trick: we will add a slash at the end of the tor address so it won’t be confused for a filename.
Create an Event Based on a Report

Freetext Import Results

Below you can see the attributes that are to be created. Make sure that the categories and the types are correct, often several options will be.

- Proposals instead of attributes

<table>
<thead>
<tr>
<th>Value</th>
<th>Similar Attributes</th>
<th>Category</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>karma2xgg6ccmpd.onion/</td>
<td></td>
<td>Network activity</td>
<td>url</td>
</tr>
<tr>
<td>windows-tuneup.com/web293/xUser.php</td>
<td></td>
<td>Network activity</td>
<td>url</td>
</tr>
</tbody>
</table>
Thanks to the added character, the first string is recognised as an url which is more consistent with the reality. The second also seems okay, so we can now submit both.

**Batch Import**

The Freetext Import works properly only with a string of data without any spaces in one line. But if you have lines of text with spaces between values, like e.g.

<table>
<thead>
<tr>
<th>Associated Files:</th>
</tr>
</thead>
<tbody>
<tr>
<td>%Appdata%\Microsoft\Windows\Start Menu\Programs\Startup\Info.hta</td>
</tr>
<tr>
<td>%Appdata%\Microsoft\Windows\Start Menu\Programs\Startup\cmb_ransomware.exe</td>
</tr>
<tr>
<td>%Appdata%\Info.hra</td>
</tr>
<tr>
<td>% UserProfile%\Desktop\FILES ENCRYPTED.txt</td>
</tr>
<tr>
<td>C:\Users\Public\Desktop\FILES ENCRYPTED.txt</td>
</tr>
</tbody>
</table>
you can still import them at once using the "Add Attribute" option. Click on Add Attribute, copy the data and paste it into the Value box. Choose the right category and type. Now check both checkboxes for Intrusion Detection System and Batch Import. The option Batch Import will import your data line for line just like the Freetext Import option without losing any information. Like this:
And that is all we can get for the main informations and IoC in this report. If we search more carefully, there might still be some information left in it, like the filename of the ransomnote for instance, but we will stop here for this example.

**Modify the event**

If you want to modify your event from the home page, you can either double click on the event or click the edit symbol located in the column **Actions** on the right side. You will be redirected to the editing mode of the selected event.
Taxonomies

In MISP 2.4.X, a flexible mechanism has been introduced to support various taxonomy of classification.

You can access the taxonomy by going into 'Event Actions' and select 'List Taxonomies'. For fresh install, make sure to click 'Update Taxonomies' to view available taxonomies.

A complete list of the available taxonomies PDF are available on the MISP project website.
The following taxonomies can be used in MISP (as local or distributed tags) or in other tools willing to share common taxonomies among security information sharing tools.

MISP taxonomies - Flexible Classification for Information Sharing

MISP taxonomies is a solution to use existing taxonomies (or create your own) to classify your cybersecurity events, indicators and threats. This technique is integrated as a default mechanism for tagging in MISP (Malware Information Sharing Platform u2013 Threat Sharing) and to support a distributed classification where organizations can share common taxonomies in a local or distributed fashion.

Classifications are distributed as simple JSON files to use with MISP but can be easily integrated into any other information sharing software. You can also propose new taxonomies to the community.

Examples of machine tags and human readable tags:

- **admiralty-scale**: source=reliability="c"
  - Admiralty scale Source Reliability="Fairly reliable"

- **admiralty-scale**: information=credibility="3"
  - Admiralty scale Information Credibility="Possibly true"

- **nato-classification**: "NU"
  - NATO Unclassified

- **tlp**: amber
  - Traffic Light Protocol (TLP) Amber: Information exclusively given to an organization sharing limited within the organization to be effectively acted upon.

https://github.com/MISP/misp-taxonomies/
1. **Admiralty Scale**: The Admiralty Scale (also called the NATO System) is used to rank the reliability of a source and the credibility of an information.

2. adversary An overview and description of the adversary infrastructure.

3. CIRCL Taxonomy - Schemes of Classification in Incident Response and Detection CIRCL Taxonomy is a simple scheme for incident classification and area topic where the incident took place.

4. Cyber Kill Chain from Lockheed Martin as described in Intelligence-Driven Computer Network Defense Informed by Analysis of Adversary Campaigns and Intrusion Kill Chains.

5. DE German (DE) Government classification markings (VS) Taxonomy for the handling of protectively marked information in MISP with German (DE) Government classification markings (VS).


7. Diamond Model for Intrusion Analysis, a phase-based model developed by Lockheed Martin, aims to help categorise and identify the stage of an attack.

8. Domain Name Abuse - taxonomy to tag domain names used for cybercrime. Use europol-incident to tag abuse-activity

9. eCSIRT eCSIRT incident classification Appendix C of the eCSIRT EU project including IntelMQ updates.

10. ENISA ENISA Threat Taxonomy - A tool for structuring threat information as published

11. Estimative Language Estimative language - including likelihood or probability of event based on the Intelligence Community Directive 203 (ICD 203) (6.2.(a)).

12. [EU Marketop and Publicadmin]EU critical sectors Market operators and public administrations that must comply to some notifications requirements under EU NIS directive.

13. EUCI EU classified information (EUCI) means any information or material designated by a EU security classification, the unauthorised disclosure of which could cause varying degrees of prejudice to the interests of the European Union or of one or more of the Member States as described.

14. Europol Incident EUROPOL class of incident taxonomy

15. Europol Events - EUROPOL type of events taxonomy

16. FIRST CSIRT Case FIRST CSIRT Case Classification.

17. FIRST Information Exchange Policy (IEP) framework

18. French gov information classification system

19. Information Security Indicators Information security indicators have been standardized by the ETSI Industrial Specification Group (ISG) ISI. These indicators provide the basis to switch from a qualitative to a quantitative culture in IT Security Scope of measurements: External and internal threats (attempt and success), user’s deviant behaviours, nonconformities and/or vulnerabilities (software, configuration, behavioural, general security framework).

20. Information Security Marking Metadata (ISM) V13 as described by DNI.gov.


22. Malware Type and Platform classification based on Microsoft's implementation of the Computer Antivirus Research Organization (CARO) Naming Scheme and Malware Terminology. Based on Microsoft Malware naming conventions, Microsoft Glossary, Microsoft Objective Criteria, and CARO's definitions. Malware families are
extracted from Microsoft SIRs since 2008 based on Microsoft Malware, virus, and threat encyclopedia. Note that SIRs do NOT include all Microsoft malware families.

23. **MISP taxonomy** to infer with MISP behavior or operation.

24. **ms-caro-malware** Malware Type and Platform classification based on Microsoft’s implementation of the Computer Antivirus Research Organization (CARO) Naming Scheme and Malware Terminology.

25. **NATO Classification Marking** Marking of Classified and Unclassified materials as described by the North Atlantic Treaty Organization, NATO.


27. **OSINT Open Source Intelligence - Classification**

28. **The Permissible Actions Protocol** - or short: PAP PAP was designed to indicate how the received information can be used. It's a protocol/taxonomy similar to TLP informing the recipients of information what they can do with the received information.

29. **Status of events used in Request Tracker**.

30. Classification based on **malware stealth techniques**. Described in **Introducing Stealth Malware Taxonomy**

31. **TLP - Traffic Light Protocol** The Traffic Light Protocol - or short: TLP - was designed with the objective to create a favorable classification scheme for sharing sensitive information while keeping the control over its distribution at the same time.

32. **Vocabulary for Event Recording and Incident Sharing** **VERIS**

A taxonomy contains a series of tags that can be used as normal tags in your MISP instance.

Tagging is a simple way to attach a classification to an event. In the early version of MISP, tagging was local to an instance. Classification must be globally used to be efficient. After evaluating different solutions of classification, we build a new scheme using the concept of machine tags.

Taxonomy is a classification of informations. Taxonomies are implemented in a simple JSON format. Anyone can create their own taxonomy or reuse an existing one.

Taxonomies are in an independent git repository.

These can be freely reused and integrated in other threat intel tools.

The advantage is that you can set a specific tag as being exportable. This means that you can export your classification with other MISP instance and share the same taxonomies. Tagging is a simple way to attach a classification to an event.

**Classification must be globally used to be efficient.**

If you want to enable a specific taxonomy, you can click on the cross to enable it.
Then you can even cherry-pick the tags you want to use on the system. If you want to use the whole taxonomy, select all and then click on the cross in the top left.

**Contributing to Taxonomy**

It is quite easy. Create a JSON file describing your taxonomy as triple tags.

```json
{
    "namespace": "admiralty-scale",
    "description": "The Admiralty Scale (also called the NATO System) is used to rank the reliability of a source and the credibility of an information."
}
```

```json
{
    "version": 1,
    "predicates": [
    {
        "value": "source-reliability",
        "expanded": "Source Reliability"
    },
    {
        "value": "information-credibility",
        "expanded": "Information Credibility"
    }
]
```
```json
1 {
2     "values": [
3         {
4             "predicate": "source-reliability",
5             "entry": [
6                 {
9                     "value": "a",
10                     "expanded": "Completely reliable"
11                 }
12         ],
13         ....
14     ]
15 }
```
(e.g. check an existing one like Admiality Scale), create a directory matching your name space, put your machinetag file in the directory and pull your request. Publishing your taxonomy is as easy as a simple git pull request on misp-taxonomies (https://github.com/MISP/misp-taxonomies). That's it. Everyone can benefit from your taxonomy and can be automatically enabled in information sharing tools like MISP.

Reserved Taxonomy

The following taxonomy namespaces are reserved and used internally to MISP.

- galaxy mapping taxonomy with cluster:element:“value”.

Adding Taxonomy in MISP

How are taxonomies integrated in MISP?

MISP administrators have only to import (or even cherry pick) the namespace or predicates they want to use as tags.

Tags can be exported to other instances.

Tags are also accessible via the MISP REST API.

For more information, "Information Sharing and Taxonomies Practical Classification of Threat Indicators using MISP" presentation given to the last MISP training in Luxembourg.

Adding a private taxonomy

```
$ cd /var/www/MISP/app/files/taxonomies/
$ mkdir privatetaxonomy
$ vi machinetag.json
```

Create a JSON file describing your taxonomy as triple tags.

For example:

```
mkdir sample
vim machinetag.json
```

Sample JSON with triple tags. You can use the JSON validator to be sure that there is no syntax error.

```json
{
    "namespace": "sample",
    "description": "Some descriptive words",
    "version": 1,
    "predicates": [
    {
        "value": "my-predicate",
        "expanded": "my-predicate"
    }],
    "values": [
    {
        "predicate": "my-predicate",
        "entry": [
        {
            "value": "a-value",
            "expanded": "A value"
        }
    }
```
Go to MISP Web GUI taxonomies/index and update the taxonomies once you are happy with your file. The newly created taxonomy should be visible. Now you need to activate the tags within your taxonomy.

**How to use Taxonomy in MISP**

**Filtering the distribution of events among MISP instances**

Applying rules for distribution based on tags:

**MISP Taxonomies - tools**

- `machinetag.py` is a parsing tool to dump taxonomies expressed in Machine Tags (Triple Tags) and list all valid tags from a specific taxonomy.

```
% cd tools
% python machinetag.py
admiralty-scale:source-reliability="a"
admiralty-scale:source-reliability="b"
admiralty-scale:source-reliability="c"
admiralty-scale:source-reliability="d"
admiralty-scale:source-reliability="e"
admiralty-scale:source-reliability="f"
admiralty-scale:information-credibility="1"
admiralty-scale:information-credibility="2"
admiralty-scale:information-credibility="3"
admiralty-scale:information-credibility="4"
admiralty-scale:information-credibility="5"
admiralty-scale:information-credibility="6"
...
```

- `PyTaxonomies` - Python module to use the MISP Taxonomies

**Other use cases using MISP taxonomies**

Tags can be used to:

- Set events for further processing by external tools (e.g. VirusTotal auto-expansion using Viper).
- Ensure a classification manager classes the events before release (e.g. release of information from air-gapped/classified networks).
- Enrich IDS export with tags to fit your NIDS deployment.

**Future functionalities related to MISP taxonomies**

- Sighting support (thanks to NCSC-NL) is integrated in MISP allowing to auto expire IOC based on user detection.
- Adjusting taxonomies (adding/removing tags) based on their score or visibility via sighting.
- Simple taxonomy editors to help non-technical users to create their taxonomies.
- Filtering mechanisms in MISP to rename or replace taxonomies/tags at pull and push synchronisation.
More public taxonomies to be included
Galaxies

Galaxies in MISP are a method used to express a large object called cluster that can be attached to MISP events or attributes. A cluster can be composed of one or more elements. Elements are expressed as key-values.

There are default vocabularies available in MISP galaxy but those can be overwritten, replaced or updated as you wish. Vocabularies are from existing standards (like STIX, Veris, ATT&CK, MISP and so on) or custom ones you only use for your organization.

Existing clusters and vocabularies can be used as-is or as a template. MISP distribution can be applied to each cluster to permit a limited or broader distribution scheme.

The objective is to have a common set of clusters for organizations starting analysis but that can be expanded to localized information (which is not shared) or additional information (that can be shared).

MISP galaxy is available on Github.

Managing Galaxies in MISP

[warning] You need to have a specific role to manage Galaxies on a MISP instance.

Galaxies management is accessed using the Galaxies link on the top menu.
A list with all the galaxies existing on the server will appear.

<table>
<thead>
<tr>
<th>Id</th>
<th>Name</th>
<th>Version</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td>Preventive Measure</td>
<td>1</td>
<td>Preventive measures based on the ransomware document overview as published in <a href="https://docs.google.com/spreadsheets/d/1TW0230uacAb-8LiKhi1n5t3d(O0C8sGMYV5Hmcf5g/pub.html">https://docs.google.com/spreadsheets/d/1TW0230uacAb-8LiKhi1n5t3d(O0C8sGMYV5Hmcf5g/pub.html</a>. The preventative measures are quite generic and can fit any standard Windows infrastructure and their security measures.</td>
</tr>
<tr>
<td>22</td>
<td>Ransomware</td>
<td>1</td>
<td>Ransomware galaxy based on <a href="https://docs.google.com/spreadsheets/d/1TW0230uacAb-8LiKhi1n5t3d(O0C8sGMYV5Hmcf5g/pub.html">https://docs.google.com/spreadsheets/d/1TW0230uacAb-8LiKhi1n5t3d(O0C8sGMYV5Hmcf5g/pub.html</a></td>
</tr>
<tr>
<td>21</td>
<td>TDS</td>
<td>2</td>
<td>TDS is a list of Traffic Direction System used by adversaries</td>
</tr>
<tr>
<td>20</td>
<td>Exploit-Kit</td>
<td>2</td>
<td>Exploit-Kit is an enumeration of some exploitation kits used by adversaries. The list includes document, browser and router exploit kits. It's not meant to be totally exhaustive but aim at covering the most seen in the past 5 years</td>
</tr>
<tr>
<td>19</td>
<td>Threat Actor</td>
<td>1</td>
<td>Threat actors tools is an enumeration of tools used by adversaries. The list includes malware but also common software regularly used by the adversaries.</td>
</tr>
<tr>
<td>18</td>
<td>Microsoft Activity Group actor</td>
<td>1</td>
<td>Activity groups as described by Microsoft</td>
</tr>
</tbody>
</table>

Page 1 of 1, showing 7 records out of 7 total, starting on record 1, ending on 7
Each galaxy can be explored using the **View** icon at the end of the line.

### Tool galaxy

<table>
<thead>
<tr>
<th>Galaxy ID</th>
<th>19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Tool</td>
</tr>
<tr>
<td>Uuid</td>
<td>90007777-bd4f-4b61-a7f7-3736661f0c0b</td>
</tr>
<tr>
<td>Description</td>
<td>Threat actors tools is an enumeration of tools used by adversaries. The list includes malware but also common software regularly used by the adversaries.</td>
</tr>
<tr>
<td>Version</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Value</th>
<th>Synonyms</th>
<th>Activity</th>
<th>#Events</th>
<th>Description</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>EyePyramid Malware</td>
<td></td>
<td></td>
<td>0</td>
<td>Two Italians referred to as the &quot;Occhonero brothers&quot; have been arrested and accused of using malware and a carefully-prepared spear-phishing scheme to spy on high-profile politicians and businessmen. This case has been called &quot;EyePyramid&quot;, which we first discussed last week. (Conspiracy theories aside, the name came from a domain name and directory path that was found during the research.)</td>
<td></td>
</tr>
<tr>
<td>Adwind</td>
<td>AllenSpy</td>
<td>Prutas</td>
<td>Unrecom</td>
<td>Socket</td>
<td>JSocket</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Here the metadata of the selected galaxy is shown. You also see a table with each available value as well as some complementary data such as a description of the value or the activity (MISP Sightings), that is to say the evolution of the use of each value.

Galaxies can be reimported from the submodules by clicking the "Update Galaxies" link on either the galaxies list or while browsing a specific galaxy. A popup will appear to confirm the reimportation.
All galaxies will always be updated, even while browsing a specific galaxy.

**Adding a custom Galaxy repository in MISP (WiP - notFunctional)**

Fork the misp-galaxy repository to your github account.

Once you have forked the repo you can do the following, assuming you have followed the Standard MISP Install.

```bash
cd /var/www/MISP/app/files/
sudo rm -rf misp-galaxy
# Replace the following line with your fork
sudo -u www-data git clone https://github.com/SteveClement/misp-galaxy.git
```

Once this is done double check if you can still see the Galaxies in the Web UI.

[warning] This will impact the UI “Update MISP” functionality in administration. Your git head might get detached in your misp-galaxy repo.

**Adding a new Galaxy (WiP - notFuctional)**

**Dependencies**

To create your own Galaxies the following tools are needed to run the validation scripts.

- jsonschema (>v2.4)
- jq
- moreutils (sponge)

On a Debian flavoured distribution you can potentially do this:

```bash
sudo apt install jq moreutils python3-jsonschema
sudo wget -O /usr/local/bin/jsonschema https://gist.githubusercontent.com/SteveClement/e6ac60e153e96579130080216fc77c6ef/raw/c273aceb9eada338d699dd2c84a8a6e215a268ea11/jsonschema
sudo chmod +x /usr/local/bin/jsonschema # This will only work with jsonschema >2.4 (before no CLI interface was available)
```

**Create a fork**

To add your custom Galaxy it is preferable to fork the misp-galaxy repository. See above for details.

**Understanding directory structure**

**Removing a Galaxy to better understand the add**

Let’s start with removing a single Galaxy.

```bash
cd /var/www/MISP/app/files/misp-galaxy
sudo -u www-data rm galaxies/android.json
sudo -u www-data rm clusters/android.json
sudo -u www-data /var/www/MISP/app/Console/cake Admin updateGalaxies force
```

After this you will have removed the android Galaxy Cluster.

**Using Galaxies in MISP Events - Example**
For this example, we will try to add a cluster to an existing event. This cluster contains information about threat actor known as Sneaky Panda.

**Test Event**

<table>
<thead>
<tr>
<th>Event ID</th>
<th>790</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uuid</td>
<td>580b20cf2d28-4b1c-bbc4-404a950d2101</td>
</tr>
<tr>
<td>Org</td>
<td>CIRCL</td>
</tr>
<tr>
<td>Owner org</td>
<td>CIRCL</td>
</tr>
<tr>
<td>Contributors</td>
<td></td>
</tr>
<tr>
<td>Email</td>
<td></td>
</tr>
<tr>
<td>Tags</td>
<td>admirally-scale:information-credibility=&quot;1&quot;</td>
</tr>
<tr>
<td>Date</td>
<td>2016-10-22</td>
</tr>
<tr>
<td>Threat Level</td>
<td>High</td>
</tr>
<tr>
<td>Analysts</td>
<td>Initial</td>
</tr>
<tr>
<td>Distribution</td>
<td>Your organisation only</td>
</tr>
<tr>
<td>Info</td>
<td>Test Event</td>
</tr>
<tr>
<td>Published</td>
<td>No</td>
</tr>
<tr>
<td>Sightings</td>
<td>1 (1)</td>
</tr>
</tbody>
</table>

**Galaxies**

- Add new cluster
Here on the event view, we notice a blue frame under the metadatas with the title "Galaxies" and a button "Add new cluster". Let's click on the latter to begin.

<table>
<thead>
<tr>
<th>Select Cluster Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Galaxies</td>
</tr>
<tr>
<td>Galaxy: Threat Actor</td>
</tr>
<tr>
<td>Galaxy: Tool</td>
</tr>
<tr>
<td>Cancel</td>
</tr>
</tbody>
</table>
A popup will appear proposing to explore a particular galaxy or all at the same time. Here, as we know we want to as a threat actor, we will choose the second option and scroll to find Sneaky Panda (We are courageous, aren't we?).

| Select Cluster | Sandworm       |
|               | ScarCruft      |
|               | Scarlet Mimic  |
|               | Shark Spider   |
|               | Shell Crew     |
|               | Silent Chollina|
|               | Sofacy         |
|               | Spicy Panda    |
|               | Stalker Panda  |
|               | Stealth Falcon |
|               | Stone Panda    |
|               | Cancel         |
Wait. No Sneaky Panda? Hm that's strange. Or maybe it is only registred as a alias. Let's have a look! To do so we will use the search field which stay on top of the list. So what do we get? Beijing Group, is it an alias of our threat actor.

<table>
<thead>
<tr>
<th>Select Cluster</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sneaky Panda</td>
</tr>
<tr>
<td>Beijing Group</td>
</tr>
<tr>
<td>Back to Galaxy Selection</td>
</tr>
<tr>
<td>Cancel</td>
</tr>
</tbody>
</table>
Pointing the cursor on it will give us the answer.
We have a match. So we select it and here we go.
Clicking on the magnifying glass next to Threat actor redirects to the list of all threat actors Clicking on the magnifying glass next to Beijing Group redirects us to a page about this group Clicking on the addition symbol on the left of Beijing Group extends the module.

Available Galaxies

Clusters

Android - Android malware galaxy based on multiple open sources.
Backdoor - A list of backdoor malware.
Banker - A list of banker malware.
Botnet - botnet galaxy
Branded vulnerability - List of known vulnerabilities and attacks with a branding
Cert eu govsector - Cert EU GovSector
Exploit kit - Exploit-Kit is an enumeration of some exploitation kits used by adversaries. The list includes document, browser and router exploit kits. It's not meant to be totally exhaustive but aim at covering the most seen in the past 5 years
Malpedia - Malware galaxy cluster based on Malpedia.
Microsoft activity group - Activity groups as described by Microsoft
Mitre attack pattern - ATT&CK tactic
Mitre course of action - ATT&CK Mitigation
Mitre enterprise attack attack pattern - ATT&CK tactic
Mitre enterprise attack course of action - ATT&CK Mitigation
Mitre enterprise attack intrusion set - Name of ATT&CK Group
Mitre enterprise attack malware - Name of ATT&CK software
Mitre enterprise attack tool - Name of ATT&CK software
Mitre intrusion set - Name of ATT&CK Group
Mitre malware - Name of ATT&CK software
Mitre mobile attack attack pattern - ATT&CK tactic
Mitre mobile attack course of action - ATT&CK Mitigation
Mitre mobile attack intrusion set - Name of ATT&CK Group
Mitre mobile attack malware - Name of ATT&CK software
Mitre mobile attack tool - Name of ATT&CK software
Mitre pre attack attack pattern - ATT&CK tactic
Mitre pre attack intrusion set - Name of ATT&CK Group
Mitre tool - Name of ATT&CK software
Preventive measure - Preventive measures based on the ransomware document overview as published in https://docs.google.com/spreadsheets/d/1TWS238xacAto-fLKhn5uTsdjWdCEsGIM0Y0Hvmc5g/pubhtml#. The preventive measures are quite generic and can fit any standard Windows infrastructure and their security measures.

Ransomware - Ransomware galaxy based on https://docs.google.com/spreadsheets/d/1TWS238xacAto-fLKhn5uTsdjWdCEsGIM0Y0Hvmc5g/pubhtml and http://pastebin.com/raw/GHgpWjar

Rat - remote administration tool or remote access tool (RAT), also called sometimes remote access trojan, is a piece of software or programming that allows a remote "operator" to control a system as if they have physical access to that system.

Sector - Activity sectors

Stealer - A list of malware stealer.

Tds - TDS is a list of Traffic Direction System used by adversaries

Threat actor - Known or estimated adversary groups targeting organizations and employees. Adversary groups are regularly confused with their initial operation or campaign.

Tool - threat-actor-tools is an enumeration of tools used by adversaries. The list includes malware but also common software regularly used by the adversaries.

Vocabularies

Common

Certainty level - Certainty level of an associated element or cluster.

Sector - List of activity sectors

Threat actor type - threat actor type vocab as defined by Cert EU.

Ttp category - ttp category vocab as defined by Cert EU.

Ttp type - ttp type vocab as defined by Cert EU.

threat-actor

Cert eu motive - Motive vocab as defined by Cert EU.

Intended effect - The IntendedEffectVocab is the default STIX vocabulary for expressing the intended effect of a threat actor

Motivation - The MotivationVocab is the default STIX vocabulary for expressing the motivation of a threat actor.

Planning and operational support - The PlanningAndOperationalSupportVocab is the default STIX vocabulary for expressing the planning and operational support functions available to a threat actor.

Sophistication - The ThreatActorSophisticationVocab enumeration is used to define the default STIX vocabulary for expressing the subjective level of sophistication of a threat actor.

Type - The ThreatActorTypeVocab enumeration is used to define the default STIX vocabulary for expressing the subjective type of a threat actor.
Sightings

Basically, sighting is a system allowing people to react on attributes on an event. It was originally designed to provide an easy method for user to tell when they see a given attribute, giving it more credibility.

Now sightings have been improved to also provide a method to signal false positives, but also to give an expiration date for some attributes.

Explanation

As said before, Sighting is a way for a user to say that they have seen or notice an attribute and confirm its validity. An attribute can been spotted several times by the same user, that is why a single user can use sighting several times on a single attribute.

Sometimes, some attributes can be considered as false positives, even if the false positive list do not detect them (for instance, if the IDS flag is set to false) so they can also be notified. As well as concerning sighting, the same user can signal a single attribute as a false positive several times.

It also happens that some attributes are only valid a certain time (for instance, in case of a phishing campaign that is assumed to be up for only one week). In this case, people can also assign an expiration date to an attribute, but this time, there can be only one valid expiration date per organisation.

Using sightings on an event (GUI)

Sighting is applied to every attribute, under the column “Sightings”, easily identifiable with its colored number. This column shows three icons and three values.
These three values show respectively:

- The number of true positives detected with the attribute, in green. Malicious activity as described in the event.
- The number of times the attribute has been marked as false positive, in red. Non-malicious activity or incorrect detection.
- The number of different expiration dates that have been affected on this attribute, in orange

Concerning the three icons:

- The first one (Thumb up) allows to add a sighting (true positive) on an attribute.
- The second one (Thumb down) allows to mark the attribute as a false positive.
- The third one (Tool) opens a popup for advanced sightings, showing sightings details and allowing different actions.

**Advanced sightings**

- The first tab, "Graph", represents a line graph showing the evolution of sightings and false positives over time.
The second tab gives a quick view of all the sightings applied to the attribute.
- The third tab gives a quick view of the sightings applied to the attribute by your own organisation only.
The last tab can be used to add either a sighting, mark the attribute as a false positive, or define an expiration date. You can precise both the date and time of day, as well as note a particular source where the sighting comes from.
At Event level

The total number of sightings is also visible as part of the metadata in front of the Sightings label, as well as a sparkline graph that summarize the evolution of sightings.
Clicking on the tool will show sighting details for the whole event.
Using sightings on an event (API)

Please have a look at the automation API
MISP warninglists

MISP warninglists are lists of well-known indicators that can be associated to potential false positives, errors or mistakes. There is a Python module available to work with warninglists in a Pythonic way called PyMISPWarningLists.

MISP warning lists: The dilemma of false-positive

- False-positive is a common issue in threat intelligence sharing.
- It's often a contextual issue:
  - false-positive might be different per community of users sharing information.
  - organization might have their own view on false-positive.
- Based on the success of the MISP taxonomy model, we build misp-warninglists. They are lists of well-known indicators that can be associated to potential false positives, errors or mistakes. They are Simple JSON files.
The warning lists are integrated in MISP to display an info/warning box at the event and attribute level. This can be enabled at MISP instance level. Default warning lists can be enabled or disabled like known public resolver, multicast IP addresses, hashes for empty values, rfc1918, TLDs or known google domains. The warning lists can be expanded or added in JSON locally or via pull requests (https://github.com/MISP/misp-warninglists). Warning lists can be also used for critical or core infrastructure warning, personally identifiable information...
MISP noticelist

Notice lists to inform MISP users of the legal, privacy, policy or even technical implications of using specific attributes, categories or objects. MISP noticelist GitHub Repo
### Attribute Categories vs. Types

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| Categories and Types

<p>| | | |</p>
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<td>special-service-request</td>
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<tr>
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<tr>
<td>stix2-pattern</td>
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</tr>
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<td>target-email</td>
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</tr>
<tr>
<td>target-external</td>
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</tr>
<tr>
<td>Categories and Types</td>
<td></td>
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<tr>
<td>----------------------</td>
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</tr>
</tbody>
</table>

- **Antivirus detection:** All the info about how the malware is detected by the antivirus products
- **Artifacts dropped:** Any artifact (files, registry keys etc.) dropped by the malware or other modifications to the system
- **Attribution:** Identification of the group, organisation, or country behind the attack
- **External analysis:** Any other result from additional analysis of the malware like tools output
- **Financial fraud:** Financial Fraud indicators
**Categories and Types**

- **Internal reference**: Reference used by the publishing party (e.g. ticket number)
- **Network activity**: Information about network traffic generated by the malware
- **Other**: Attributes that are not part of any other category or are meant to be used as a component in MISP objects in the future
- **Payload delivery**: Information about how the malware is delivered
- **Payload installation**: Info on where the malware gets installed in the system
- **Payload type**: Information about the final payload(s)
- **Persistence mechanism**: Mechanisms used by the malware to start at boot
- **Person**: A human being - natural person
- **Social network**: Social networks and platforms
- **Support Tool**: Tools supporting analysis or detection of the event
- **Targeting data**: Internal Attack Targeting and Compromise Information

**Types**

- **AS**: Autonomous system
- **aba-rtn**: ABA routing transit number
- **anonymised**: Anonymised value - described with the anonymisation object via a relationship
- **attachment**: Attachment with external information
- **authentihash**: Authenticode executable signature hash
- **bank-account-nr**: Bank account number without any routing number
- **bic**: Bank Identifier Code Number also known as SWIFT-BIC, SWIFT code or ISO 9362 code
- **bin**: Bank Identification Number
- **boolean**: Boolean value - to be used in objects
- **bro**: An NIDS rule in the Bro rule-format
- **btc**: Bitcoin Address
- **campaign-id**: Associated campaign ID
- **campaign-name**: Associated campaign name
- **cc-number**: Credit-Card Number
- **cdhash**: An Apple Code Directory Hash, identifying a code-signed Mach-O executable file
- **comment**: Comment or description in a human language
- **cookie**: HTTP cookie as often stored on the user web client. This can include authentication cookie or session cookie.
- **cortex**: Cortex analysis result
- **counter**: An integer counter, generally to be used in objects
- **country-of-residence**: The country of residence of a natural person
- **cpe**: Common platform enumeration
- **date-of-birth**: Date of birth of a natural person (in YYYY-MM-DD format)
- **datetime**: Datetime in the ISO 8601 format
- **dns-soa-email**: RFC1035 mandates that DNS zones should have a SOA (Statement Of Authority) record that contains an email address where a PoC for the domain could be contacted. This can sometimes be used for attribution/linkage between different domains even if protected by whois privacy
- **domain**: A domain name used in the malware
- **domain|ip**: A domain name and its IP address (as found in DNS lookup) separated by a |
- **email-attachment**: File name of the email attachment.
- **email-body**: Email body
- **email-dst**: A recipient email address
- **email-dst-display-name**: Email destination display name
- **email-header**: Email header
- **email-message-id**: The email message ID
- **email-mime-boundary**: The email mime boundary separating parts in a multipart email
- **email-reply-to**: Email reply to header
- **email-src**: The email address used to send the malware.
- **email-src-display-name**: Email source display name
- **email-subject**: The subject of the email
- **email-thread-index**: The email thread index header
- **email-x-mailer**: Email x-mailer header
- **filename**: Filename
- **filename|authentihash**: A checksum in md5 format
- **filename|impfuzzy**: Import fuzzy hash - a fuzzy hash created based on the imports in the sample.
- **filename|imphash**: Import hash - a hash created based on the imports in the sample.
- **filename|md5**: A filename and an md5 hash separated by a |
- **filename|pehash**: A filename and a PEhash separated by a |
- **filename|sha1**: A filename and an sha1 hash separated by a |
- **filename|sha224**: A filename and a sha-224 hash separated by a |
- **filename|sha256**: A filename and an sha256 hash separated by a |
- **filename|sha384**: A filename and a sha-384 hash separated by a |
- **filename|sha512**: A filename and a sha-512 hash separated by a |
- **filename|sha512/224**: A filename and a sha-512/224 hash separated by a |
- **filename|sha512/256**: A filename and a sha-512/256 hash separated by a |
- **filename|ssdeep**: A checksum in ssdeep format
- **filename|tlsh**: A filename and a Trend Micro Locality Sensitive Hash separated by a |
- **first-name**: First name of a natural person
- **float**: A floating point value.
- **frequent-flyer-number**: The frequent flyer number of a passenger
- **gender**: The gender of a natural person (Male, Female, Other, Prefer not to say)
- **gene**: GENE - Go Evtx sigNature Engine
- **github-organisation**: A github organisation
- **github-repository**: A github repository
- **github-username**: A github user name
- **hash-md5**: hassh is a network fingerprinting standard which can be used to identify specific Client SSH implementations. The fingerprints can be easily stored, searched and shared in the form of an MD5 fingerprint.
- **hashserver-md5**: hashServer is a network fingerprinting standard which can be used to identify specific Server SSH implementations. The fingerprints can be easily stored, searched and shared in the form of an MD5 fingerprint.
- **hex**: A value in hexadecimal format
- **hostname**: A full host/dnsname of an attacker
- **hostname|port**: Hostname and port number seperated by a |
- **http-method**: HTTP method used by the malware (e.g. POST, GET, ...).
- **iban**: International Bank Account Number
- **identity-card-number**: Identity card number
- **impfuzzy**: A fuzzy hash of import table of Portable Executable format
- **imphash**: Import hash - a hash created based on the imports in the sample.
- **ip-dst**: A destination IP address of the attacker or C&C server
- **ip-dst|port**: IP destination and port number seperated by a |
- **ip-src**: A source IP address of the attacker
- **ip-src|port**: IP source and port number seperated by a |
- **issue-date-of-the-visa**: The date on which the visa was issued
- **ja3-fingerprint-md5**: JA3 is a method for creating SSL/TLS client fingerprints that should be easy to produce on any platform and can be easily shared for threat intelligence.
- **jabber-id**: Jabber ID
- **last-name**: Last name of a natural person
Categories and Types

- **link**: Link to an external information
- **mac-address**: Mac address
- **mac-eui-64**: Mac EUI-64 address
- **malware-sample**: Attachment containing encrypted malware sample
- **malware-type**: 
  - **md5**: A checksum in md5 format
- **middle-name**: Middle name of a natural person
- **mime-type**: A media type (also MIME type and content type) is a two-part identifier for file formats and format contents transmitted on the Internet
- **mobile-application-id**: The application id of a mobile application
- **mutex**: Mutex, use the format `\BaseNamedObjects\`
- **named pipe**: Named pipe, use the format `.\pipe`
- **nationality**: The nationality of a natural person
- **other**: Other attribute
- **passenger-name-record-locator-number**: The Passenger Name Record Locator is a key under which the reservation for a trip is stored in the system. The PNR contains, among other data, the name, flight segments and address of the passenger. It is defined by a combination of five or six letters and numbers.
- **passport-country**: The country in which the passport was issued
- **passport-expiration**: The expiration date of a passport
- **passport-number**: The passport number of a natural person
- **pattern-in-file**: Pattern in file that identifies the malware
- **pattern-in-memory**: Pattern in memory dump that identifies the malware
- **pattern-in-traffic**: Pattern in network traffic that identifies the malware
- **payment-details**: Payment details
- **pdb**: Microsoft Program database (PDB) path information
- **pehash**: PEhash - a hash calculated based on certain pieces of a PE executable file
- **phone-number**: Telephone Number
- **place-of-birth**: Place of birth of a natural person
- **place-port-of-clearance**: The port of clearance
- **place-port-of-onward-foreign-destination**: A Port where the passenger is transiting to
- **place-port-of-original-embarkation**: The original port of embarkation
- **port**: Port number
- **primary-residence**: The primary residence of a natural person
- **prtn**: Premium-Rate Telephone Number
- **redress-number**: The Redress Control Number is the record identifier for people who apply for redress through the DHS Travel Redress Inquiry Program (DHS TRIP). DHS TRIP is for travelers who have been repeatedly identified for additional screening and who want to file an inquiry to have erroneous information corrected in DHS systems
- **regkey**: Registry key or value
- **regkey|value**: Registry value + data separated by |
- **sha1**: A checksum in sha1 format
- **sha224**: A checksum in sha-224 format
- **sha256**: A checksum in sha256 format
- **sha384**: A checksum in sha-384 format
- **sha512**: A checksum in sha-512 format
- **sha512/224**: A checksum in the sha-512/224 format
- **sha512/256**: A checksum in the sha-512/256 format
- **sigma**: Sigma - Generic Signature Format for SIEM Systems
- **size-in-bytes**: Size expressed in bytes
- **snort**: An IDS rule in Snort rule-format
- **special-service-request**: A Special Service Request is a function to an airline to provide a particular facility for A
Passenger or passengers.

- **ssdeep**: A checksum in ssdeep format
- **stix2-pattern**: STIX 2 pattern
- **target-email**: Attack Targets Email(s)
- **target-external**: External Target Organizations Affected by this Attack
- **target-location**: Attack Targets Physical Location(s)
- **target-machine**: Attack Targets Machine Name(s)
- **target-org**: Attack Targets Department or Organization(s)
- **target-user**: Attack Targets Username(s)
- **text**: Name, ID or a reference
- **threat-actor**: A string identifying the threat actor
- **tish**: A checksum in the Trend Micro Locality Sensitive Hash format
- **travel-details**: Travel details
- **twitter-id**: Twitter ID
- **uri**: Uniform Resource Identifier
- **url**: url
- **user-agent**: The user-agent used by the malware in the HTTP request.
- **visa-number**: Visa number
- **vulnerability**: A reference to the vulnerability used in the exploit
- **whois-creation-date**: The date of domain's creation, obtained from the WHOIS information.
- **whois-registrant-email**: The e-mail of a domain's registrant, obtained from the WHOIS information.
- **whois-registrant-name**: The name of a domain's registrant, obtained from the WHOIS information.
- **whois-registrant-org**: The org of a domain's registrant, obtained from the WHOIS information.
- **whois-registrant-phone**: The phone number of a domain's registrant, obtained from the WHOIS information.
- **whois-registrar**: The registrar of the domain, obtained from the WHOIS information.
- **windows-scheduled-task**: A scheduled task in windows
- **windows-service-displayname**: A windows service's displayname, not to be confused with the windows-service-name. This is the name that applications will generally display as the service's name in applications.
- **windows-service-name**: A windows service name. This is the name used internally by windows. Not to be confused with the windows-service-displayname.
- **x509-fingerprint-md5**: X509 fingerprint in MD5 format
- **x509-fingerprint-sha1**: X509 fingerprint in SHA-1 format
- **x509-fingerprint-sha256**: X509 fingerprint in SHA-256 format
- **xmr**: Monero Address
- **yara**: Yara signature
- **zeek**: An NIDS rule in the Zeek rule-format
Sharing / Synchronisation

MISP's core functionality is sharing where everyone can be a consumer and/or a contributor/producer.
- Quick benefit without the obligation to contribute
- Low barrier access to get acquainted to the system

Synchronisation

Concept

The following figure shows the concept how different MISP instances could tie together.
In MISP, two ways exist to get events from remote sources:

- **Use case 1**: From another MISP server (also called MISP instance), by synchronising two MISP servers.
- **Use case 2**: From a link, by using Feeds.

The example below illustrate the synchronisation between two MISP servers (use case 1). An organisation B (OrgB) wants to synchronise its MISP server, called ServerB, with the MISP server of an organisation A (Org A), called ServerA. The following steps can be taken to synchronise ServerB with ServerA:

1. **OrgB.ServerB**
2. **OrgB.ServerA**
3. **OrgA.ServerA**

Legend:

- Synchronisation between two MISP servers
- Organisation in the MISP database of a MISP server
- User of an organisation in the MISP database of a MISP server
- MISP server (also called MISP instance)
**FIGURE: Illustration of the synchronisation between two MISP servers**

- **Step 1:** Add OrgB as a local organisation on ServerA (OrgB.ServerA) using OrgB’s existing UUID from their local organisation on ServerB.
- **Step 2:** Add a **Sync User** (syncuser@OrgB.ServerA) in the organisation OrgB.ServerA on the MISP ServerA.
- **Step 3:** Set up a **sync server** on MISP ServerB using the key (called Authkey) from the **sync user** (syncuser@OrgB.ServerA) created on MISP ServerA.

For additional information on the synchronisation process, refer to the MISP GitHub issues, for example, issue 2595.

**Adding a server**

Servers can be added by users via

https://<misp url>/servers/add
The Add Server Form has several input fields:

## Add Server

### Synchronisation/Sharing

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base URL</td>
<td></td>
</tr>
<tr>
<td>Instance name</td>
<td></td>
</tr>
</tbody>
</table>

### Information about the organisation that will receive the events, typically the remote instance's host organisation.

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
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<tbody>
<tr>
<td>Remote Sync Organisation Type</td>
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<td>Local organisation</td>
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<tr>
<td>CIRCL</td>
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### Authkey

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</table>

### Push and Pull

<table>
<thead>
<tr>
<th>Action</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Push</td>
<td></td>
</tr>
<tr>
<td>Pull</td>
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</tbody>
</table>

### Server and Client certificate file

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Server certificate file</td>
<td></td>
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<tr>
<td>Client certificate file</td>
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</tbody>
</table>

### Push and Pull rules

<table>
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<tbody>
<tr>
<td>Push</td>
<td>Modify</td>
</tr>
<tr>
<td>Pull</td>
<td>Modify</td>
</tr>
</tbody>
</table>
1. **Base URL**
   
   The base-url to the external server you want to sync with. Example: https://foo.sig.mil.be

2. **Instance Name**
   
   A name that will make it clear to your users what this instance is. For example: Organisation A's instance

3. **Remote Sync Organisation Type**

   MISP has several organisation "pools", one for local and one for known external organisations. When adding a synchronisation connection, you need to define the host organisation of the remote instance. Select which pool you wish to pick the organisation from using this drop-down. You also have the option of adding a new organisation directly from this interface.

4. **Local/Known remote Organisation**

   Choose the organisation from the selected pool that defines the host organisation on the remote side. Make sure that the remote instance is actually run by the organisation you select as this is used in an integral part of the sharing mechanism. Do not select your own organisation for this setting.

5. **Authkey**

   You can find the authentication key on your profile on the external server.

6. **Push**

   Allow the upload of events and their attributes. That means only Events that match the given filter will be pushed to the server.

   E.g. it can limit push of events to events not being TLP:RED

1. **Pull**

   Allow the download of events and their attributes from the server. That means only Events matching the given criteria will be pulled.

   E.g. it can limit to NOT download Type:OSINT events.

2. **Self Signed**

   Click this, if you would like to allow a connection despite the other instance using a self-signed certificate (not recommended). (server certificate file still needed)

3. **Server certificate file**

   You can also upload a certificate file if the instance you are trying to connect to has its own signing authority. (*.pem)

4. **Client certificate file**

   You can also upload a certificate file if the instance you are trying to connect to has its own signing authority. (*.pem)

**Test connection**

Test connection can be used to test the connection to the remote server and will give a feedback about local and remote version of MISP.

**Rules**

Rules are used to limit sharing when synchronising events and attributes. For example with a given tag or disable sharing.
Rules are used to limit sharing when synchronising events and attributes, to e.g. events with a given tag, or disabling sharing for events containing a certain Tag.

**Troubleshooting**

If you have issues connecting to a remote servers try to do the following things:

- try to connect with your user account to the remote server, to ensure the password is still valid and that your API key is valid
- try to connect with your user account to the remote server and check your roles on the remote server
- with connection issues do a package capture to find out more
- if you have a SSL connection issue to a remote server with a signed by a CA that is not included in OS, make sure the whole certificate path is included in the path.

**Sharing and distribution**

The following section describes how distribution mechanisms of events and attributes work.

**Distribution settings**

The below five distribution settings are available for events and attributes. Descriptions of those settings can be found here.

- Your organisation only
- This community only
- Connected communities
- All communities
- Sharing group

Events that are not published are only distributed/shared to the local organisations on the same MISP server/instance (within the limit of the distribution model). Only events that are **published** will be shared with remote organisations on other MISP servers via push/pull mechanisms. More details on publishing events here.

**Community**

A community is composed of the local organisations on a MISP server and the remote organisations connected by the sync users. For more information on the concept of community, refer to an article on MISP information sharing following ISO/IEC 27010, explaining the concept of community.

Specifically, communities are not reversible. Taking the example of the above figure, illustrating the synchronisation between two MISP servers, OrgB.ServerB is part of the MISP ServerA community but OrgB.ServerA is not part of MISP ServerB community.

**Distribution mechanisms**

The distribution level of an event is automatically decreased as it is synchronised with other MISP instances, when it was originally set to:

- Community only (to organisation only)
- Connected community (to community only)

It is not decreased when it was originally set to:

- Organisation only
- All communities
- Sharing group

[!] This rule does not apply if “Internal instance” has been checked when creating the server.

As an example, the figure below illustrates two events \( e \) and \( e' \) created by OrgA and respectively shared as "This community only" and "Connected communities" and how they propagate in an illustrative MISP set of instances synchronised with each others.
Sharing-groups

There is an article about sharing groups in here

Collaboration

Proposals

Proposals can be used to propose new attribute values that can be reviewed by the event owner.

Forums / Threats

Forums can be used to discuss non event related topics.

Discussions can be accessed on the top "Global Actions - List Discussions"

Discussions will and can not be shared with other servers

and via URL:

https://<misp url>/threads/index
Create a new Topic

To create a new topic

https://<misp url>/posts/add

Add Post

Thread Subject

This is a test subject

I would like to talk about foo bar because...

Submit
Comment a topic

A topic can be commented by any user

https://<misp url>/threads/view/<topic id>

Comments to events

In MISP ongoing events can be commented by every user to ask free text question to events. Comments to events will not be shared with other servers
Contact a reporter

This feature can be used to contact the person or the organisation that the person belongs to that has created the event.

All E-Mails can be enforced to be encrypted

Contact organization reporting event 4

You are about to contact the organization that reported event 4.
Feel free to add a custom message that will be sent to the reporting organization.
Your email address and details about the event will be added automatically to the message.

Message

Hello,

we have seen several of the indicators mentioned in this event in our network, do you have any more information on it?

Submit only to the person that created the event

Submit
Receive alerts

It is possible to get alerts via encrypted mail in the following cases:

- published events by other user of the MISP instance
- events pushed to the MISP instance
- events pulled by the MISP instance

These E-Mail alerts are an opt-in feature

Edit My Profile

<table>
<thead>
<tr>
<th>Email</th>
<th>Password</th>
<th>Confirm Password</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="mailto:admin@misp.training">admin@misp.training</a></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Role</th>
<th>Nids Sid</th>
</tr>
</thead>
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GPG key

<table>
<thead>
<tr>
<th>Fetch GPG key</th>
</tr>
</thead>
</table>

- Receive alerts when events are published
- Receive alerts from "contact reporter" requests

Submit
Recommendation

The following section will describe what is the best practice how many MISP instances that showed to be good for orgs. Of course depending on your specific requirements an architecture could be more spread or simplified.

The architecture is divided into several systems / stages beginning with:

MISP Staging System

This system's purpose is to be linked to all available external MISP systems that you have access to. It will download all events and do enrichment between these events.

MISP SECOps System

This system is the main system used by human analysts. It will it is not linked to any external MISP instance other then the Staging System.

To publish events to the community assign the right tags to match your push Rules and publish the event
External Connectors

Below you will find various tweaks and tips when integrating 3rd party connectors.

Microsoft Azure Sentinel

MISP to Microsoft Graph Security Script

The script provides clients with MISP instances to migrate threat indicators to the Microsoft Graph Security API.

For more information on Microsoft Security Graph visit [Microsoft Graph](https://developer.microsoft.com/en-us/graph)

Prerequisites

Before installing the sample:
- Install Python 3.x version from [https://www.python.org/](https://www.python.org/).
- To register your application for access to Microsoft Graph, you’ll need either a Microsoft account or an Office 365 for business account. If you don’t have one of these, you can create a Microsoft account for free at [outlook.com](https://outlook.com).

Getting Started

After the prerequisites are installed or met, perform the following steps to use these scripts:

1. Download or clone this repository.
2. Go to directory `security-api-solutions/Samples/MISP`
3. Install dependencies. In the command line, run `pip3 install requests requests-futures pymisp`
4. To run script, go to the root directory of misp-graph-script and enter `PYTHONHASHSEED=0 python3 script.py` in the command line.

App Registration

To configure the samples, you’ll need to register a new application in the Microsoft Application Registration Portal.

Follow these steps to register a new application

1. Sign in to the Azure Portal using either your personal or work or school account.
2. Under My Azure Active Directory, choose App registrations (if you are suggested to use the preview, use that) choose New registration.
3. Enter an application name, and choose Register
4. Next you’ll see the registration page for your app. Copy and save the Application (client) Id & Directory (tenant) Id field. You will need it later to complete the configuration process.

5. Under Certificates & secrets, choose New client secret and give it a name. A new password will be displayed under Client secrets. Copy this password. This will be your client secret. You will need it later to complete the configuration process.

6. Under Authentication, find Implicit grant choose both Access tokens & ID tokens and save.

7. Under API permissions click Add a permission, choose Microsoft Graph, under Application permissions, under ThreatIndicators add ThreatIndicators.ReadWrite.OwnedBy. You will be taken back to the API permissions screen, click Grant admin consent for Default Directory

   Note: See the Microsoft Graph permissions reference for more information about Graph's permission model.

8. Modify the RequestManager.py file to comment out line 121-124. (This allows the script to run without failing due to line 123 being divided by avg_speed incase it starts as 0.

9. Modify the script.py to add in config.misp_verifycert at line 13. Ensure it looks like below.

   ```
   misp = PyMISP(config.misp_domain, config.misp_key, config.misp_verifycert)
   ```

10. Modify config.py file to add in misp_verifycert = False anywhere in the file.

As the final step in configuring the script, modify the config.py file in the root folder of your cloned repo.

Update tenant, client_id, and client_secret in config.py

```python
graph_auth = {
    'tenant': '<tenant id>',
    'client_id': '<client id>',
    'client_secret': '<client secret>',
}
```

Once changes are complete, save the config file.

## Configurations

### Target Product

```python
targetProduct = "Azure Sentinel"
```

### Misp Event Filter

Filters can be set in the config.py file under the "misp_event_filters" property

Below is a list of parameters that can be passed to the filter (source: https://pymisp.readthedocs.io/modules.html):

- values – values to search for
- not_values – values not to search for
- type_attribute – Type of attribute
- category – Category to search
- org – Org reporting the event
- tags – Tags to search for
- not_tags – Tags not to search for
- **date_from** – First date (Format: '2019-01-01')
- **date_to** – Last date (Format: '2019-01-01')
- **last** – Last published events (for example 5d or 12h or 30m)
- **eventid** – Event ID
- **withAttachments** – return events with or without the attachments
- **uuid** – search by uuid
- **publish_timestamp** – the publish timestamp (Note: Uses UNIX timestamp. Format: '1551811160')
- **published** – return only published events (Format: True or False)

A list or a specific value can be passed to the above parameters. If a list is passed to the parameter, the filtered events are the result of the union of provided list.

This field needs to be a list that contains multiple filters. The filtered events are the result of the intersection of provided filters.

**First Example of How This Field can be Configured**

```python
misp_event_filters = [
    {
        "type_attribute": 'mutex'
    },
    {
        "type_attribute": 'filename|md5'
    }
]
```

An event meets this filtering criteria if the event has an attribute with attribute type of 'mutex' AND the event has an attribute with attribute type of 'filename|md5'.

**Second Example of How This Field can be Configured**

```python
misp_event_filters = [
    {
        "type_attribute": ['mutex', 'filename|md5']
    }
]
```

An event meets this filtering criteria if the event has an attribute with attribute type of 'mutex' OR the event has an attribute with attribute type of 'filename|md5'.

**Third Example of How This Field can be Configured**

```python
misp_event_filters = [
    {
        "values": 'http://www.test.com'
    }
]
```

An event meets this filtering criteria if the event has an attribute with attribute value of 'http://www.test.com'.

**Fourth Example of How This Field can be Configured**

```python
misp_event_filters = []
```
This gets all events.

**Action**

```
action = "alert"  # (This is default).
```

**Passive Only**

```
passiveOnly = False  # (This is default).
```

**Days to Expire**

This property is used to specify the amount of days the records will expire in Microsoft Graph Security API. The default value for days to expire is 30.

```
days_to_expire = 5
```

**Misp Key**

The Misp Auth Key is required to fetch data from your Misp instance. Configure a sync user.

```
misp_key = '<misp key>'
```

**Verify Cert**

This gives you the option to choose if python should validate the certificate of the misp instance. (This allows ease within testing environments)

```
misp_verifycert = False  # IT IS RECOMMENDED TO USE A VALID SSL CERT IN PRODUCTION AND CHANGE THIS TO TRUE
```

**Instructions on Reading Til Indicators That Have Been Pushed**

In the command line, run `python3 script.py -r`

**Instructions on Seeing All Requests That Resulted in Errors**

1. In the command line, run `cd logs` to go to the logs folder.
2.  
   - To print all the requests that resulted in errors to the console, simply run `cat _error_*` in the command line.
   - To aggregate all the requests that resulted in errors to a file, run `cat _error_* > <filename>.txt` in the command line.

**Script Output**

As the script runs, it prints out the request body sent to the Graph API and the response from the Graph API.

Every request is logged as a json file under the directory "logs". The name of the json file is the datetime of when the request is completed.
Schedule with CRONTAB

Below is a CRONTAB entry example of running the script every Sunday at 2am

0 2 Sun /home/mark/misp-graph-script/python3 script.sh

This README.md has been adapted from the README.md found here Microsoft Graph MISP sample
MISP modules

MISP modules are autonomous modules that can be used for expansion and other services in MISP. The modules are written in Python 3 following a simple API interface. The objective is to ease the extensions of MISP functionalities without modifying core components. The API is available via a simple REST API which is independent from MISP installation or configuration.

MISP modules support is included in MISP starting from version 2.4.28.

More

MISP modules GitHub Repo

Installation

Install guide on Ubuntu
Install guide RHEL/CentOS
MISP ZeroMQ

MISP includes a flexible publish-subscribe model to allow real-time integration of the MISP activities (event publication, attribute creation or removal, sighting). The MISP ZeroMQ plugin operates at global level in MISP which means standard distribution rules don't apply and every activities will be published within the ZeroMQ pub-sub channels.

MISP ZeroMQ functionality can be used for various model of integration or to extend MISP functionalities:

- real-time search of indicators into a SIEM
- automatic expansion
- dashboard activities
- logging mechanisms
- continuous indexing
- custom software or scripting

The following notification topic channels exist and can be included in the MISP ZeroMQ pub-sub:

- misp_json - events published
- misp_json_attribute - attribute updated or created
- misp_json_sighting - sighting added to an attribute or an event
- misp_json_user - user updates or creation
- misp_json_organisation - organisation updates or creation
- misp_json_self - keep-alive messages sent every minute

MISP ZeroMQ configuration

To enable MISP ZeroMQ, the feature must be enabled in the Plugin setting tab.

Prior to enabling it, make sure that you have the pyzmq installed by running

```
sudo pip install pyzmq
sudo pip install redis
```

If you have problems and the plugin does not start, the logfile may be helpful.

```
sudo cat /var/www/MISP/app/tmp/logs/mispzmq.error.log
```
## Server settings

<table>
<thead>
<tr>
<th>Priority</th>
<th>Setting</th>
<th>Value</th>
<th>Description</th>
<th>Error Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optional</td>
<td>Plugin-ZeroMQ_enable</td>
<td>true</td>
<td>Enables or disables the publish feature of MISP. Make sure that you install the requirements for the plugin to work. Note: In the installation instructions for each installation.</td>
<td>Value not set</td>
</tr>
<tr>
<td>Optional</td>
<td>Plugin-ZeroMQ_port</td>
<td>5555</td>
<td>The port that the publish feature will use.</td>
<td>Value not set</td>
</tr>
<tr>
<td>Optional</td>
<td>Plugin-ZeroMQ.uuid_hash</td>
<td></td>
<td>Location of the Redis db used by MISP and the Python PLU plugin to store data to be published.</td>
<td>Value not set</td>
</tr>
<tr>
<td>Optional</td>
<td>Plugin-ZeroMQ.uuid_hash</td>
<td>7272</td>
<td>The port that Redis is listening on.</td>
<td>Value not set</td>
</tr>
<tr>
<td>Optional</td>
<td>Plugin-ZeroMQ.uuid_password</td>
<td></td>
<td>The password, if set for Redis.</td>
<td>Value not set</td>
</tr>
<tr>
<td>Optional</td>
<td>Plugin-ZeroMQ.uuid_database</td>
<td>1</td>
<td>The database to be used for storing messages for the publish functionality.</td>
<td>Value not set</td>
</tr>
<tr>
<td>Optional</td>
<td>Plugin-ZeroMQ.uuid_namespace</td>
<td>misp</td>
<td>The namespace to be used for storing messages for the publish functionality.</td>
<td>Value not set</td>
</tr>
<tr>
<td>Optional</td>
<td>Plugin-ZeroMQ_event_notifications_enable</td>
<td>true</td>
<td>Enables or disables the publishing of any event creations/deletions.</td>
<td>Value not set</td>
</tr>
<tr>
<td>Optional</td>
<td>Plugin-ZeroMQ_object_notifications_enable</td>
<td>true</td>
<td>Enables or disables the publishing of any object creations/deletions.</td>
<td>Value not set</td>
</tr>
<tr>
<td>Optional</td>
<td>Plugin-ZeroMQ_object_references_notifications_enable</td>
<td>true</td>
<td>Enables or disables the publishing of any object reference creations/deletions.</td>
<td>Value not set</td>
</tr>
<tr>
<td>Optional</td>
<td>Plugin-ZeroMQ_attribute_notifications_enable</td>
<td>true</td>
<td>Enables or disables the publishing of any attribute creations/deletions.</td>
<td>Value not set</td>
</tr>
<tr>
<td>Optional</td>
<td>Plugin-ZeroMQ_signing_notifications_enable</td>
<td>true</td>
<td>Enables or disables the publishing of new signings to the ZMQ publish feed.</td>
<td>Value not set</td>
</tr>
<tr>
<td>Optional</td>
<td>Plugin-ZeroMQ_user_notifications_enable</td>
<td>true</td>
<td>Enables or disables the publishing of new modified users to the ZMQ publish feed.</td>
<td>Value not set</td>
</tr>
<tr>
<td>Optional</td>
<td>Plugin-ZeroMQ_organizer_notifications_enable</td>
<td>true</td>
<td>Enables or disables the publishing of new modified organizations to the ZMQ publish feed.</td>
<td>Value not set</td>
</tr>
</tbody>
</table>
Each notification channels can be enabled (from event publication to sightings), the MISP site admin can decide which type of message to publish.

By default, the ZMQ pub-sub channel is available to localhost only on TCP port 50000. The binding of the pub-sub channel can be updated in the configuration interface as shown above

**MISP ZeroMQ debugging and testing**

In the diagnostic section, ZeroMQ service can be started and stopped. There is a small status option to give information about the numbers of events processed by the service.

**ZeroMQ**

This tool tests whether the ZeroMQ extension is installed and functional.

ZeroMQ settings: OK

Start / Restart  Stop  Status
Testing with sub.py tool

A simple command line tool is included with MISP to connect to the MISP ZeroMQ channel and get the notifications:

```
python3 sub.py --help
```


Generic ZMQ client to gather events, attributes and sighting updates from a MISP instance

optional arguments:
  -h, --help            show this help message and exit
  -s, --stats           print regular statistics on stderr
  -p PORT, --port PORT  set TCP port of the MISP ZMQ (default: 50000)
  -r HOST, --host HOST  set host of the MISP ZMQ (default: 127.0.0.1)
  -o ONLY, --only ONLY  set filter (misp_json, mish_json_attribute or mish_json_sighting) to limit the output a specific type (default: no filter)
  -t SLEEP, --sleep SLEEP  sleep time (default: 2)

The sub.py will output the JSON objects for the subscribed topic, by default, all the topic channels are dumped:

```
misp@cpeb:/var/www/MISP/tools/misp-zmq$ python3 -u sub.py | jq . ....
{
  "uptime": 50,
  "status": "And when you're dead I will be still alive."
}
{
  "uptime": 60,
  "status": "And believe me I am still alive."
}
{
  "uptime": 70,
  "status": "I'm doing science and I'm still alive."
}
{
  "uptime": 80,
  "status": "I feel FANTASTIC and I'm still alive."
}
{
  "uptime": 90,
  "status": "While you're dying I'll be still alive."
}
{
  "Sighting": {
    "uuid": "592d8988-fda8-490f-bf6e-4e56956d210f",
    "source": "",
    "type": "0",
    "date_sighting": 1406156624,
    "org_id": "2",
    "event_id": "8102",
    "attribute_id": "1044812"
  }
}
{
  "Attribute": {
    "id": "1044802",
    "value2": "",
    "value1": "1.2.3.4",
    "uuid": "592d894-7120-4760-b5e2-4858956d210f",
    "batch_import": "0",
    "comment": "",
    "value": "1.2.3.4"
  }
```

ZeroMQ - MISP publish-subscribe
Notification Schemas

Each notification channel uses a slightly different JSON schema. Consult this section to identify which MISP components exist in a channel:

**misp_json - events published**

When an event is published to ZMQ (which is different from being published in MISP) the ZMQ notification will just contain the MISP event data along with all its component children. These components include:

- A list of attributes
- A list of objects, which contain their own lists of attributes
- A list of related events - added when attributes in separate events correlate
- Any galaxies that this event belongs to
- A list of tags that apply to the event

Example:

```json
{
    "Event": {
        "id": "625",
        "orgc_id": "2",
        "org_id": "1",
        "date": "2017-05-24",
        "threat_level_id": "3",
        "info": "M2M - Fwd: IMG_3428.pdf",
        "published": false,
        "uuid": "59259036-fcd0-4749-8a6c-4d88950d210f",
        "attribute_count": "7",
        "analysis": "1",
        "distribution": "3",
        "timestamp": "1505755565",
        "proposal_email_lock": false,
        "locked": false,
        "publish_timestamp": "1505416766",
        "sharing_group_id": "0",
        "disable_correlation": false,
        "Org": {
            "id": "1",
            "name": "MISP",
            "uuid": "56e5f3277-1ad4-42f6-b90b-04e5c083632"
        },
        "Orgc": {
            "id": "2",
            "name": "CIRCL",
            "uuid": "55f6ea5e-2c60-40e5-964f-47a8950d210f"
        },
        "Attribute": [
            {
                "id": "157835",
                "type": "attachment",
                "category": "Artifacts dropped",
                "to_ids": false,
                "uuid": "59259037-1814-4669-9eb1-4ba950d210f",
                "event_id": "625",
                "distribution": "5",
                "timestamp": "1495633975",
                "comment": "IMG_3428.pdf"
            }
        ]
    }
}
```
"sharing_group_id": "0",
"deleted": false,
"disable_correlation": false,
"object_id": "0",
"object_relation": null,
"value": "tmpzuni0skf",
"ShadowAttribute": []
}

"ShadowAttribute": [],
"RelatedEvent": [],
"Galaxy": [],
"Object": [
{
"id": "1",
"name": "http-request",
"meta-category": "network",
"description": "A single HTTP request header",
"template_uuid": "b4a8d163-8110-4239-bfcf-e08f3a9f9df7b",
"template_version": "1",
"event_id": "625",
"uuid": "59c0016c-0984-4779-9eb88-05b8c0a83832",
"timestamp": "1505755500",
"distribution": "5",
"sharing_group_id": "0",
"comment": "",
"deleted": false,
"ObjectReference": [],
"Attribute": [
{
"id": "164371",
"type": "http-method",
"category": "Network activity",
"to_ids": false,
"uuid": "59c0016c-a744-468d-ad92-05b8c0a83832",
"event_id": "625",
"distribution": "5",
"timestamp": "1505760143",
"comment": "",
"sharing_group_id": "0",
"deleted": false,
"disable_correlation": false,
"object_id": "1",
"object_relation": "method",
"value": "POST",
"ShadowAttribute": []
},
{
"id": "164372",
"type": "uri",
"category": "Network activity",
"to_ids": true,
"uuid": "59c0016c-fac0-4055-9f3d-05b8c0a83832",
"event_id": "625",
"distribution": "5",
"timestamp": "1505760143",
"comment": "",
"sharing_group_id": "0",
"deleted": false,
"disable_correlation": false,
"object_id": "1",
"object_relation": "uri",
"value": "\text{/test.php}"
"ShadowAttribute": []
}
]
},
"Tag": [{"id": "2", "name": "tlp:white", "colour": "#ffffff", "exportable": true, "hide_tag": false}]
misp_json_attribute - attribute updated or created

The attributes appear to have the most diversity depending on the action applied to them.

When an attribute gets created, just the attribute gets sent out via ZMQ. Its parent event id is sent inside the attribute JSON, but there is no extra event metadata like there is when an attribute is deleted or modified.

Create Example:

```json
{
   "Attribute": {
      "to_ids": "1",
      "timestamp": 1505235275,
      "distribution": "0",
      "deleted": "0",
      "disable_correlation": "0",
      "event_id": "625",
      "category": "Network activity",
      "type": "domain",
      "value": "microsoft.net",
      "comment": "",
      "batch_import": "0",
      "uuid": "59b8114b-1c80-4149-be3a-03e9c8a83832",
      "sharing_group_id": 0,
      "value1": "microsoft.net",
      "value2": "",
      "id": "164363"
   }
}
```

Edited attribute notifications send metadata about their parent events and information about the attribute's sharing group, attribute-level tags, and sightings data. It's important to note that only the new value of the edited attribute is sent along the ZMQ channel. In order to diff the new and old values, you'd have to have a copy of the old attribute value stored somewhere and can use the attribute's `uuid` key (which never changes) to correlate the new and old values.

Edit Example:

```json
// microsoft.net --&gt; microsoft.com
{
   "Attribute": {
      "id": "164363",
      "event_id": "625",
      "category": "Network activity",
      "type": "domain",
      "value1": "microsoft.com",
      "value2": "",
      "to_ids": "1",
      "uuid": "59b8114b-1c80-4149-be3a-03e9c8a83832",
      "timestamp": 1505235283,
      "distribution": "0",
      "sharing_group_id": 0,
      "comment": "",
      "deleted": false,
      "disable_correlation": false,
      "value": "microsoft.com",
      "batch_import": "0"
   },
   "Event": {
      "id": "625",
```
When an attribute gets deleted, the `deleted` key gets set to `1`, and the attribute's event metadata gets sent alongside it.

Delete Example:

```json
{
  "Attribute": {
    "id": "164362",
    "event_id": "625",
    "category": "Network activity",
    "type": "domain",
    "value1": "microsoft.com",
    "value2": "",
    "to_ids": true,
    "uuid": "59b81121-f4b4-4ed3-a443-63ea8a83832",
    "timestamp": 1505235262,
    "distribution": "5",
    "sharing_group_id": 0,
    "comment": "",
    "deleted": 1,
    "disable_correlation": false,
    "value": "microsoft.net"
  },
  "Event": {
    "id": "625",
    "org_id": "1",
    "date": "2017-05-24",
    "info": "M2M - Fwd: IMG_3428.pdf",
    "user_id": "1",
    "uuid": "59259036-fcd0-4749-8a6c-4488950d210f",
    "published": false,
    "analysis": "1",
    "attribute_count": "5",
    "orgc_id": "2",
    "timestamp": "1505233367",
    "distribution": "3",
    "threat_level_id": "3",
    "publish_timestamp": "1505233367",
    "disable_correlation": false
  }
}
```
misip_json_sighting - sighting added to an attribute or an event

The message sent for sightings is fairly simple, with the type of sighting (0 = Addition, 1 = False Positive), the date (in seconds-since-epoch format), the id of the attribute it applies to, and the id of the attribute's parent event.

Addition Example:

```
{
    "Sighting": {
        "type": "0",
        "attribute_id": "164373",
        "event_id": "625",
        "org_id": "1",
        "date_sighting": 1505767537,
        "source": "",
        "uuid": "59c03071-f480-4311-a710-03edc0a83832",
        "id": "1"
    }
}
```

False Positive Example:

```
{
    "Sighting": {
        "type": "1",
        "attribute_id": "164373",
        "event_id": "625",
        "org_id": "1",
        "date_sighting": 1505767543,
        "source": "",
        "uuid": "59c03071-f480-4311-a710-03edc0a83832",
        "id": "2"
    }
}
```

misip_json_user - user updates or creation

An update is sent through ZMQ when users log in. There are actually two messages in this - both being fairly sparse.
The current_login message just contains who logged in and what time (in seconds-since-epoch format) it happened.
The last_login message contains who just logged in, what time the login occurred (technically the date the record was modified, but it's modified when the user logs in, so it appears to be interchangeable in this case), and what time the user last logged in.

Login Example:

```
{
}
```
When a user gets created, all of the information about the user (id, email, base64 encoded GnuPG key, role, etc.) gets sent along ZMQ. If this information is modified, the same JSON will be sent along the ZMQ channel, with updated values. For example, if the below user is disabled, the same JSON will be sent, but the `disabled` key will be set to "1".

User Creation and User Edit Example:

```json
{  
  "User": {  
    "id": "1",  
    "last_login": "1000046766",  
    "date_modified": 1000060160 
  } 
}
{  
  "User": {  
    "id": "1",  
    "current_login": 1000060160, 
    "date_modified": 1000060160 
  } 
}
```

```
misp_json_organisation - organisation updates or creation
```

```
Org notifications are sent when Orgs are updated and created, but not deleted. They are generally the same, except the fields `created_by` and `date_created` are present when an Org is created.

Creation Example:

```json
{  
  "Organisation": {  
    "created_by": "1",  
    "local": "1",  
    "name": "test",  
    "uuid": "59c0367d-fe8c-42a4-9db2-03ec0a83832",  
    "description": "Test",  
    "nationality": "Not specified", 
```
misp_json_self - keep-alive messages sent every minute

Only really useful to ensure the ZMQ server is running. And for a bit of humor

```
{
    "status": "I'm doing science and I'm still alive.",
    "uptime": 9170
}
```

**Tips for Building a Subscriber**

1. **misp_json_attribute** notifications are sent when attributes are created, deleted, and edited
   - Check the `deleted` key to identify if an attribute has been created or deleted
   - If an attribute has been edited, the new value will be sent out via ZMQ, but the `uuid` key will remain the same. Use this to determine if an attribute has existed before or not
2. Some compound attribute types have component types that don't exist outside of them
   - For example, MISP doesn't have a single `ip` attribute type except in the `domain|ip` type
   - If you're going to split up and resubmit these attributes, you may have to modify these component types so MISP will recognize them (e.g. domain|ip- -> domain, ip-dst)
MISP and Internationalization (i18n)

Requirements

Please read the following CakePHP documentation about i18n & l10n.

Add one .md per translation effort

Please add a file à la: ja_JP.md (Japanese_Japan) or it_CH.md (Italian_Switzerland), in which you briefly describe what the current status of your translation effort is and what has been translated and which parts might be gotchas. This would also be a good place to quickly explain what your language is about, like whether most technical terms are a translation from the original, an adaptation from the English word or perhaps you just mostly use English terms.

Style

Please follow whatever is the purest and most intelligible form of written language in the native tongue being translated.

Formatting

It is important to use correct formatting. This is wrong:

```php
<p><?php echo __('Are you sure you want to delete Proposal #'). $id . '?' ?></p>
```

You want to have ultimate flexibility and that line should look more like this:

```php
<p><?php echo __('Are you sure you want to delete Proposal #{$id}?');?></p>
```

In the above example we use an alternative notation of the format string in PHP. Using the above, the generated po-template file (default.pot) will have the name of the to-be-translated variable in the "msgid" part of the file. Which is easier to read then a non descriptive %s and allows the translator to have context on how the phrase is used in MISP.

In case you have HTML-Tags, move them out of the sentence, out of the php code if possible:

```php
<p><?php echo __('Are you sure you want to:<br/>Delete Proposal #%s', $id);?></p>
```

Issues

Some times it might be impossible to translate some phrases. Or you notice a certain bad formatting, or segmentation of sentences. In that case, please either open an Issue on Github
Quirks

Lines like this:

```php
echo $this->Form->button('Submit', array('class' => 'btn btn-primary'));
```

Should be prepared as such:

```php
echo $this->Form->button(__('Submit'), array('class' => 'btn btn-primary'));
```

Or another case:

```php
echo $this->Form->input('sharing_group_id', array(
    'options' => array($sharingGroups),
    'label' => 'Sharing Group',
));
```

To:

```php
echo $this->Form->input('sharing_group_id', array(
    'options' => array($sharingGroups),
    'label' => __('Sharing Group'),
));
```

Let us know!

Are you planning to do a translation or localization? Please open a ticket on the issue system. This will allow us and others to track what is being worked on. You can keep it very light, as all the details should be in your markdown in misp-book.

Reach out to the community

Want to chat with other MISP contributors? Make sure to join our MISP Gitter channel.
Frequently Asked Questions

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  - RHEL/CentOS
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What to do if my REST client cannot reach the host, despite me being able to issue requests using Curl / Postman / etc.?

How would one set up a sharing group with a remote org, where we only share a mutual community instance (i.e. we both have sync users on that instance). On our local instance, they exist as a remote org (from events that have synced from their instance via our shared community instance).-on-our-local-instance,-they-exist-as-a-remote-org-(from-events-that-have-synced-from-their-instance-via-our-shared-community-instance).)

Is it possible to propose objects to an event?

How to use the enforceWarninglist parameter in REST search?

Column not found issue ~ Symptoms

WatchList Customization
  - How to create a customized WatchList.

Frequently Asked Questions

The following page hosts most frequently asked questions as seen on our issues and gitter.

Usage

How can I see all the deleted events in a MISP instance?
You can use the logging system for this, to see all deleted events, simply go to audit actions -> search logs and use the following parameters:

model: Event
action: delete

This will list all event deletions. To find out more about what a particular deleted event was, simply grab the ID from the above search results and search for:

model: Event
action: add
model_id: <Event ID retrieved from the listing of all event deletions>

To do the same via the API, first search for the deletions:

POST request:
url: https://url.of.your.misp/logs/index
headers:
   Authorization: <your_api_key>
   Accept: application/json
   Content-type: application/json
Body:
{
   "model": "Event",
   "action": "delete"
}

Then find the individual event's metadata that was deleted

POST request:
url: https://url.of.your.misp/logs/index
headers:
   Authorization: <your_api_key>
   Accept: application/json
   Content-type: application/json
Body:
[
   {
      "model": "Event",
      "action": "add",
      "model_id": "<Event ID retrieved from the query before>"
   }
]

Permission issues

If you have any permission issues, please set the permissions to something sane first.

RHEL/CentOS

There are a plethora of issues that might arise when using SELinux when it comes to permissions. First, please familiarize yourself with the basics of SELinux. RedHat has a comprehensive SELINUX USER'S AND ADMINISTRATOR'S GUIDE.

For file system permissions, refer to the install guide first.

Another way to see what SELinux might not be happy about is to use ausearch. This assumes Audit is enabled.

# Just php-fpm
Redis Connection problems

If you have the following in error.log

```plaintext
2019-05-08 10:16:05 Error: [RedisException] Permission denied
Request URL: /events/view/1
Stack Trace:
#0 /var/www/MISP/app/Model/AppModel.php(1776): Redis->connect('127.0.0.1', 6379)
#1 /var/www/MISP/app/Model/Feed.php(329): AppModel->setupRedis()
#2 /var/www/MISP/app/Model/Event.php(2073): Feed->attachFeedCorrelations(Array, Array, Array, false)
#3 /var/www/MISP/app/Controller/EventsController.php(1547): Event->fetchEvent(Array, Array)
#4 [internal function]: EventsController->view('1')
#5 /var/www/MISP/app/lib/cakephp/lib/Cake/Controller/Controller.php(499): ReflectionMethod->invokeArgs(Object(EventController), Array)
#7 /var/www/MISP/app/lib/cakephp/lib/Cake/Routing/Dispatcher.php(167): Dispatcher->invoke(Object(EventsController), Object(CakeRequest))
#8 /var/www/MISP/app/webroot/index.php(92): Dispatcher->dispatch(Object(CakeRequest), Object(CakeResponse))
#9 [main]
```

This means that apache/php-fpm cannot connect over the network (localhost included).

Fix:

```plaintext
sudo setsebool -P httpd_can_network_connect on
# Perhaps a reload is not needed, but good practice wants us to test it anyways.
sudo systemctl restart rh-php72-php-fpm.service
sudo systemctl restart httpd.service
```

RHEL/CentOS SELinux debug

More often than not there might be issues with SELinux when not configured correctly. The below will give you pointers where to look and how to figure out what is wrong.

You can investigate SELinux issues without any tools by opening the audit log it generates. This log is found at `/var/log/audit/audit.log`. However, unless you know exactly what to look for and have a lot of free time, you're going to find it difficult making sense of the log.

Install some handy tools:

```plaintext
# Note: This will pull in some X tools, you have been warned
sudo yum install setroubleshoot setools
```

We now have a tool called sealert that analyzes the audit log used by SELinux. Sealert will scan the log file and will then generate a report containing all discovered SELinux issues. In this overview of what went wrong you will see suggestions on how to fix them after the issue detected.

To run sealert from the command-line, we need to point it to the SELinux audit log.

```plaintext
sudo sealert -a /var/log/audit/audit.log
```
Clearing the audit logs

It is not recommended to clear the audit logs as they might contain information needed in the future for troubleshooting or security investigations. However, if that is not the case, just empty the audit log:

```
# > /var/log/audit/audit.log
```

When to update MISP?

One question might be how often to update MISP. You can update MISP as often as you like. If you see the following:

**MISP version**

Every version of MISP includes a json file with the current version. This is checked against the latest tag on github, if there is a version mismatch the tool will warn you about it. Make sure that you update MISP regularly.

Currently installed version… v2.4.97 (4462a72206a9c9e39559c1facee90efdec2a308d)
Latest available version… v2.4.97 (6e9b6f880382346f338aa94f37b52d326b7cc551)
Status… OK
Current branch… 2.4

Update MISP
This means that the main repository has an update available.
If you want to play it safer or want to integrate it in your Weekly/Bi-Monthly update routine you can track our Changelog a more up to date version is available here

**Hardening**

**How do I harden my MISP instance?**

You can check the hardening section in the install guide.

**Maintenance mode**

**Is there a MISP maintenance mode?**

Yes, you want to flip your instances "Live-mode". This wants to be done on the CLI if you experience issues:

```
$PATH_TO_MISP/app/Console/cake "MISP.live" 0
```

Other related MISP Settings

Optional MISP.maintenance_message Great things are happening! MISP is undergoing maintenance, but will return shortly. You can contact the administration at $email or call CIRCL. The message that users will see if the instance is not live.

Critical MISP.live true Unless set to true, the instance will only be accessible by site admins.

**Update MISP fails**

If your MISP instance is outdated, meaning ONLY the core, not the modules or dashboard or python modules, you will see the following.

**MISP version**

Every version of MISP includes a json file with the current version. This is checked against the latest tag on github, if there is a version mismatch the tool will warn you about it. Make sure that you update MISP regularly.

Currently installed version... v2.4.96 (f3850747da103ca616a7dbaab955df373db272f7)
Latest available version... v2.4.97 (ce3c78cd7db60812d0147ced992a7650509d31da)
Status: Outdated version
Current branch: 2.4

Update MISP
Once you click on update MISP you will be asked confirmation.

Update MISP

Do you want to pull the latest commit from the branch? If you have made local changes to MISP the merge will fail.

[Yes] [No]
If you are not on a branch, the UI will tell you this, the update will fail.

Current branch: You are not on a branch, Update MISP will fail

```bash
git checkout app/composer.json 2>&1

error: pathspec 'app/composer.json' did not match any file(s) known to git

error: pathspec 'app/composer.json' did not match any file(s) known to git
You are not currently on a branch.
Please specify which branch you want to merge with.
See git-pull(1) for details.

git pull <remote> <branch>
```

```bash
git submodule update --init --recursive 2>&1
```

Update MISP
If you cannot write the `.git` files and directory as the user running the web server (and thus PHP), the update will fail. The following diagnostic check will let you know if you can update or not.

**Writable Files**

/`var/www/MISP-priv/app/Config/config.php`…OK
/`var/www/MISP-priv/.git/ORIG_HEAD`…File is not writeable
In case you get a file not found on `.git/ORIG_HEAD`, this means that you have never updated your MISP OR you have installed git from an archive file (like `.zip/.tar.gz` or similar) Try to click update MISP and see what happens.

**Writeable Files**

/var/www/MISP/app/Config/config.php…OK
/var/www/MISP/.git/ORIG_HEAD…File not found
What can go wrong if I update MISP?

In theory nothing. We put great effort into protecting the integrity of the data stored in your MISP instance. DB upgrades happen upon login or on reload once you have update the repository. You cannot "break" anything by clicking Update MISP worse case it will complain about something and you will certainly find the answer on this page.

IF not, please open an issue on GitHub or come to our gitter chat to see if the community can help.

error: pathspec 'app/composer.json' did not match any file(s) known to git

This is *not* an error and can be ignore. Nothing will be impacted by this.

| Currently installed version | v2.4.96 (f3850747da103ca616a7dbaab955df373db272f7) |
| Latest available version   | v2.4.97 (ce3c78cd7db60812d0147ced992a765050d31da) |
| Status                      | Outdated version |
| Current branch              | 2.4 |

```
git checkout app/composer.json 2>&1

error: pathspec 'app/composer.json' did not match any file(s) known to git

git pull origin 2.4 2>&1

error: pathspec 'app/composer.json' did not match any file(s) known to git
```

From https://github.com/MISP/MISP

```
* branch  2.4  -> FETCH_HEAD
  f3850747d..ce3c78cd7  2.4  -> origin/2.4

Updating f3850747d..ce3c78cd7

Fast-forward

| VERSION.json | 2 +- |
| app/Controller/AppController.php | 2 +- |
| app/Controller/Component/ACLComponent.php | 1 + |
| app/Controller/Component/RestResponseComponent.php | 16 ++- |
| app/Controller/EventsController.php | 2 +- |
| app/Controller/SightingsController.php | 36 ++++
| app/Lib/Export/CsvExport.php | 28 ++++
| app/Lib/Export/JsonExport.php | 9 +- |
MISP modules "Connection refused"

**Module System**

This tool tests the various module systems and whether they are reachable based on the module settings.

<table>
<thead>
<tr>
<th>Module System</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enrichment module system</td>
<td>Connection refused</td>
</tr>
<tr>
<td>Import module system</td>
<td>Connection refused</td>
</tr>
<tr>
<td>Export module system</td>
<td>Connection refused</td>
</tr>
<tr>
<td>Cortex module system</td>
<td>System not enabled</td>
</tr>
</tbody>
</table>
If you get have a **Connection refused state** on your modules one of the following might be true.

- You have no **misp-modules** not installed
- They are installed but not running
- Something completely different

If they are not installed, check out this section of the **INSTALL guide** of **misp-modules**.

In case they are not running, try this on the console:

```bash
sudo -u www-data /var/www/MISP/venv/bin/misp-modules -l 127.0.0.1 -s &
```

OR if you were foolish enough to not install in a Python virtualenv:

```bash
sudo -u www-data misp-modules -l 127.0.0.1 -s &
```

[warning] Running misp-modules like this will certainly kill it once you quit the session. Make sure it is in your `/etc/rc.local` or some other init script that gets run on boot.

**Uninstalling MISP**

There is no official procedure to uninstalling a **MISP instance**.

If you want to re-use a machine where MISP was installed, wipe the machine and do a fresh install. Consider the data in your **MISP instance** as potentially confidential and if you synchronized with other instances, be respectful and wipe it clean.

**Updating PyMISP to incorporate newer versions of the MISP object templates**

In some cases, for instance if a newer version of a MISP object is present on the server but not yet on PyMISP, you want to reflect the current state in your PyMISP installation.

In order to do so, perform the following steps. It fetches the latest object templates and installs PyMISP again:

```bash
git clone https://github.com/MISP/PyMISP.git
cd PyMISP/pymisp/data

git submodule update --init
cd misp-objects

git pull origin master

cd ../../../

sudo pip3 install -I .
```

**How to disable freetext/custom/user-created tags and only allow certain tags**

Remove the "tag editor" from the permissions that you grant to users. Set all tags that you do not want to "hidden".

There is a server setting to treat all incoming tags as hidden by default: `MISP.incoming_tags_disabled_by_default`

**Important** Make sure that you don't remove "tag editor" from sync users, or you'll be stripping tags from synchronized data.
How to enable the csv import module?

First you have to enable the import services: double-click on "false" in the very first line and change it to "true".

In Server Settings & Maintenance -> Plugin Settings -> Import -> set "Plugin.Import_csvimport_enabled" to true. Afterwards you'll find the csvimport from within the newly created event: "Populate from..."

Don't use from the main site ("Import from...").

Why do I see 'The request has been black-holed' when I submit forms?

That's a security measure for form tampering protection.

All forms have a timeout (~15min) and all of them can only be submitted once. If you use your browser's "back" button and resubmit the form MISP will consider it as a potential attempt at form tampering.

Importing large feeds creates PHP Fatal error

When importing a large feed like the CIRCL feed, the job reaches 99% and then fails. The log file records:

```
PHP Fatal error: Allowed memory size of 536870912 bytes exhausted (tried to allocate 1941504 bytes) in /var/www/MISP/app/Model/Feed.php on line 691
```

In this case you will need to increase the memory_limit option in php.ini file.

I deleted the admin user by mistake

Now, I only have Org Admin.

You have several options:

1. Delete the org admin, MISP automatically creates a new default site admin user if no users are found in the db (mysql: truncate users;)

2. Upgrade a user to a site admin, such as an org admin user:

   ```
   SELECT id, email from users;
   
   ```

   Note down the ID you want to upgrade. Let's say this is 2 for the example's sake.

   ```
   SELECT id, name from roles;
   
   ```

   Note down the role ID you want to upgrade. Let's say this is 1 for the example's sake.

   ```
   UPDATE users set role_id = 1 where id = 2;
   
   ```

config.php is not writeable

Warning: app/Config/config.php is not writeable. This means that any setting changes made here will NOT be save
According to the install guide, make sure to:

```bash
chown -R apache:apache /var/www/MISP
find /var/www/MISP -type d -exec chmod g=rx {} 
chmod -R g+r,o= /var/www/MISP
```

If it still doesn't work, make sure SELinux is not enabled or modify the rule set:

```bash
chcon -t httpd_sys_rw_content_t /var/www/MISP/app/files
chcon -t httpd_sys_rw_content_t /var/www/MISP/app/files/terms
chcon -t httpd_sys_rw_content_t /var/www/MISP/app/files/scripts/tmp
chcon -t httpd_sys_rw_content_t /var/www/MISP/app/Plugin/CakeResque/tmp
chcon -R -t httpd_sys_rw_content_t /var/www/MISP/app/tmp
chcon -R -t httpd_sys_rw_content_t /var/www/MISP/app/webroot/img/orgs
chcon -R -t httpd_sys_rw_content_t /var/www/MISP/app/webroot/img/custom
```

### How to debug misp-dashboard

This is the full chain from MISP to the live dashboard and some tips to find out which link is faulty.

1. **MISP** Ensure that ZMQ is installed and enabled with the correct settings
2. **MISP ZMQ** You can use MISP/tools/misp-zmq/sub.py which will subscribe to the ZMQ and print the data
3. **ZMQ_subscriber** You can change the logging level from logging.INFO to logging.DEBUG and look in the logs for the string Pushed: * Or add a print statement in the put_in_redis_list function
4. **ZMQ_dispatcher** Look in the logs for the string Handling *
5. **Server (Flask) and Browser (live Dashboard)** Open the Web developer Network tab in your browser and look for the url `_logs` with Content-Type: text/event-stream;

### How to update object templates?

```bash
git submodule update
```
In your MISP directory (or via the diagnostic page) and just click “Update Objects” in List Object Templates.

### What to do if my REST client is throwing SSL errors when trying to query my MISP instance?

The REST client will use the framework's certificate store to validate the contacted host. If your root CA / self-signed certificate is not known by the certificate store, the request will fail. You can skip the SSL validation altogether using the "Skip SSL validation" checkbox.

### What to do if my REST client cannot reach the host, despite me being able to issue requests using Curl / Postman / etc.?
The REST client issues instructions to your MISP server to contact a remote host (most commonly itself). Always consider how your MISP server can address itself when using the REST client, by default it will prepend the requested relative path in the URL field with the instance’s baseurl.

If your MISP cannot reach itself via the baseurl the request will fail. You can use the "Use full path - disclose my API key" checkbox along with the full URL in the URL field to instruct MISP to use another path than what it would construct using the baseurl.

How would one set up a sharing group with a remote org, where we only share a mutual community instance (i.e. we both have sync users on that instance). On our local instance, they exist as a remote org (from events that have synced from their instance via our shared community instance).

It is not possible to do that. Keep in mind that if you are both on a mutual community instance, someone is in charge of that instance that will have database and admin level access. They would be able to inspect the data you exchange on their community instance with one another, so MISP will block any attempt to share with them.

If you really want to go through the community instance to exchange with them, you explicitly have to include the host organisation of the community instance (they would get access if they wanted to anyway, this way we can ensure that you are clear about that):

- You are org a on instance A.
- Your partner that you want to share with is org b on instance B.
- You have no way of directly reaching org b, but you both have access to instance C, which is run by org c (the sharing instance).
- In order to reach org b, you have two options for sharing groups, depending on whether you want to be able to push to them or want to rely on them pulling data from the community instance:

  SG Option 1 (push all the way to B):
  orgs: a, b, c
  instances, A, B, C

  SG Option 2 (b has to pull from C):
  orgs: a, b, c
  instances: A, C

Is it possible to propose objects to an event?

This is not possible yet. What you can do at the moment: Create a new event and extend it with the other (foreign) event.

How to use the enforceWarninglist parameter in REST search?

If you would like to export IoCs, for example into a suricata rule and exclude all values matching your warning lists, you can use the following:
Keep in mind that unpublished events need the "published": 0 parameter in order to be exported.

Column not found issue

When a user attempts to add an object to an event and the following error is received (Level 1 debug enabled):

```
SQLSTATE[42S22]: Column not found: 1054 Unknown column 'Event.org_id' in 'where clause'
```

One potential resolution is to upgrade MISP to 2.4.107.

Symptoms

Users with the site-admin role are able to add objects to events without any error. This error was encountered when a user belonged to every role except site-admin.

WatchList Customization

How to create a customized WatchList.

WatchLists are stored within folder under /var/www/MISP/app/files/warninglists/lists Every folder contains a list.json file. Create a new folder and copy and modify an existing list (or create a new one from scratch). Ensure the "name" value within the file is unique. Increment the version number when the file is changed.

Within the MISP GUI, go to WarningLists and "Update WarningLists".

The new WarningList will now show up. In case of errors, check the permissions on the list.json and it's folder.

To modify the list or to add entries to it, go back to the file via the CLI, modify the file and reload it via the GUI ("Update WarningLists").
Developer FAQ

Main Developer Resources

The main developer resources can be found on GitHub in the MISP Wiki.

The following pages are worth inspecting closer in case you want to actively develop for MISP:

- The real FAQ
- Contributor Overview
- Some objectives of MISP
- Various deployment tools
- MISP Code of Conduct
- UI coloring scheme
- Notes on MISP and STIX 2
- Commit Messages Best Practices
- Internationalization (i18n)

Our gitter channel is a welcome place to ask other community developers in case you are stuck.
Appendices

Summary

- **Appendix A: External Authentication**
  - [The external authentication mechanism described](#the-external-authentication-mechanism-described)
  - [Setting up the external authentication mechanism](#setting-up-the-external-authentication-mechanism)
  - [User management](#user-management)
  - [Logging](#logging)

- **Appendix B: ACL descriptors**
  - [Querying the ACL system](#querying-the-acl-system)
  - [Getting a list of URLs accessible to a role](#getting-a-list-of-urls-accessible-to-a-role)
  - [Getting a list of all accessible controllers and actions in MISP](#getting-a-list-of-all-accessible-controllers-and-actions-in-misp)
  - [Viewing a list of yet unmapped functions](#viewing-a-list-of-yet-unmapped-functions)

- **Appendix C: Official MISP developments**
- **Appendix D: Third-party development**
- **Appendix E: Other Threat Intel Resources**

**Appendix A: External Authentication**

**The external authentication mechanism described**

The external authentication allows a user or an external tool to authenticate with MISP using an arbitrary value passed along in a custom header. This authentication method overrides the regular authentication mechanisms and is customisable by a site-admin.

It is possible to create a mixed mode MISP setup where certain users can go through the normal authentication mechanism and other users are required to use the external authentication method.

**Setting up the external authentication mechanism**

To change the authentication settings, navigate to Administration - Server settings - Plugin settings

The settings associated with the external authentication can be found by pressing the CustomAuth button as depicted below:
<table>
<thead>
<tr>
<th>Priority</th>
<th>Setting</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optional</td>
<td>Plugin.CustomAuth_enable</td>
<td>true</td>
<td>Enable this function to authenticate with custom authentication.</td>
</tr>
<tr>
<td>Optional</td>
<td>Plugin.CustomAuth_header</td>
<td>radac_auth_header</td>
<td>Set the custom header for authentication.</td>
</tr>
<tr>
<td>Optional</td>
<td>Plugin.CustomAuth_required</td>
<td>false</td>
<td>If this setting is false, all users will be rejected.</td>
</tr>
<tr>
<td>Optional</td>
<td>Plugin.CustomAuth_only_allow_source</td>
<td></td>
<td>If you are using URL as a valid parameter.</td>
</tr>
<tr>
<td>Optional</td>
<td>Plugin.CustomAuth_name</td>
<td>Radac</td>
<td>The name of the custom plugin.</td>
</tr>
<tr>
<td>Optional</td>
<td>Plugin.CustomAuth_disable_log</td>
<td>true</td>
<td>Disable the log.</td>
</tr>
<tr>
<td>Optional</td>
<td>Plugin.CustomAuth_custom_password_reset</td>
<td><a href="https://my/custom/pwreset">https://my/custom/pwreset</a></td>
<td>Provide your custom password reset page URL.</td>
</tr>
<tr>
<td>Optional</td>
<td>Plugin.CustomAuth_custom_logout</td>
<td><a href="https://my/custom/logout">https://my/custom/logout</a></td>
<td>Provide a custom logout page URL.</td>
</tr>
</tbody>
</table>
To change a setting simply double click on the value to edit the field. Use the guidance provided by the setting tool to configure the external authentication. The accessible settings are as follows:

- **enable**: Enable or disable external authentication (off by default)
- **header**: The header which MISP will use to identify users
- **required**: Enabling this setting will force all users to use the external authentication. Leave this disabled allows administrators to assign external authentication or regular authentication users.
- **only_allow_source**: Setting a url / IP address here will only allow requests that originated from the given address
- **name**: The name to be used for the authentication mechanism. This is reflected in the user creation / edit views, the logs and the error messages on failed logins.
- **disable_logout**: Disable the default logout button. Using an external authentication mechanism that authenticates via the header with each requests makes the logout button obsolete.
- **custom_password_reset**: If your authentication system has a url that a user can access to reset his/her password, please specify the full url for it here. This will then be reused in the UI.
- **custom_password_logout**: If your authentication system has a url that a user can access to logout, please specify the full url for it here. This will then be reused in the UI.

**User management**

Using a new setting, user self management can be disabled for all users that are not administrators via the MISP.disableUserSelfManagement setting, found in the MISP settings tab. Enabling this setting removes the ability of users to change their user settings and reset their authentication keys. All other functionality remains unchanged.
Email

☐ External authentication user
☐ Set password

Organisation  Role
Choose organisation  Site Admin

Authkey
Nids Sid
DdeSGRSN3vSS9pbGEupf0d9ic

Sync user for
Not bound to a server

GPG key

Fetch GPG key

☐ Receive alerts when events are published
☐ Receive alerts from "contact reporter" requests

☐ Disable this user account

Submit
To create an external authenticated user, simply tick the External authentication user checkbox, after which an external auth key field will appear. This will be used to identify the users via the passed along header.

Logging

For a description of the logging facilities provided by this plugin, please refer to the "Logging of failed authentication attempts" section of the Administration section.

Appendix B: ACL descriptors

Querying the ACL system

MISP allows site admins to query the ACL system for various types of data. This can be interesting when tuning for example WAF access to MISP. All applicable queries can be requested via /servers/queryACL

Getting a list of URLs accessible to a role

https://<misp url>/servers/queryACL/printRoleAccess/<role id>

The above URL will return a JSON with all accessible URLs for the given role ID. If no Role ID is provided, a JSON containing all roles and their access lists will be returned.

Example:

```json
{
  "2": {
    "name": "User",
    "urls": [
      "/attributes/add/",
      "/attributes/add_attachment/",
      "/attributes/add_threatconnect/",
      "/attributes/attributeReplace/",
      "/attributes/delete/",
      "/attributes/deleteSelected/",
      "/attributes/download/",
      "/attributes/downloadAttachment/",
      "/attributes/downloadSample/",
      "/attributes/edit/",
      "/attributes/editField/",
      "/attributes/editSelected/",
      "/attributes/fetchEditForm/",
      "/attributes/fetchViewValue/",
      "/attributes/hoverEnrichment/",
      "/attributes/index/",
      "/attributes/restSearch/",
      "/attributes/returnAttributes/",
      "/attributes/rpz/",
      "/attributes/search/",
      "/attributes/searchAlternate/",
      "/attributes/text/",
      "/attributes/updateAttributeValue/",
      "/attributes/view/",
      "/eventDelegations/acceptDelegation/",
      "/eventDelegations/delegateEvent/",
      "/eventDelegations/deleteDelegation/",
      "/eventDelegations/view/",
      "/events/add/",
      "/events/addIOC/",
      "/events/addTag/"
    ]
  }
}
Getting a list of all accessible controllers and actions in MISP

https://<misp url>/servers/queryACL/printAllFunctionNames

This URL will return a JSON with all controller and all mapped functions within them.

Viewing a list of yet unmapped functions

https://<misp url>/servers/queryACL/findMissingFunctionNames

Functions that have not been tied into the new ACL yet show up here. These functions will (until added to the ACL) only be accessible to site admins.

Appendix C: Official MISP developments

This section lists the projects that can be found on the main MISP GitHub page e know of but not officially support and rely on their respective maintainers to keep up to date to the MISP 2.4 developments.

<table>
<thead>
<tr>
<th>Project</th>
<th>Description</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>misp-objects</td>
<td>Definition, description and relationship types of MISP objects</td>
<td>Core to MISP, frequently updated and tested</td>
</tr>
</tbody>
</table>
### Appendix D: Third-party development

This section lists some projects we know of but not officially support and rely on their respective maintainers to keep up to date to the MISP 2.4 developments.

<table>
<thead>
<tr>
<th>Project</th>
<th>Description</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>MISP-STIX-ESM</td>
<td>Exports MISP events to STIX and ingest into McAfee ESM</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>Docker MISP</td>
<td>Automated Docker MISP container</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>misp42splunk</td>
<td>A Splunk app to use MISP in background and combine with TheHive</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>getmispicio</td>
<td>getiocmisp is a Splunk custom search command that helps to extract IOCs from a MISP instance.</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>OTX MISP</td>
<td>Imports Alienvault OTX pulses to a MISP instance</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>BTG</td>
<td>BTG's purpose is to make fast and efficient search on IOC</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>MISP OSINT Collection</td>
<td>Collection of best practices to add OSINT into MISP and/or MISP communities</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>IBM XFE module</td>
<td>Various IBM X-Force Exchange modules</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>MISP dockerized</td>
<td>MISP dockerized is a project designed to provide an easy-to-use</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td></td>
<td>and easy-to-install'out of the box' MISP instance that includes everything you need to run MISP with minimal host-side requirements.</td>
<td></td>
</tr>
<tr>
<td>MISP dockerized</td>
<td>MISP-modules for MISP dockerized</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>modules</td>
<td>MISP modules for MISP dockerized</td>
<td></td>
</tr>
<tr>
<td>FireMISP</td>
<td>FireEye Alert json files to MISP Malware information sharing platform (Alpha)</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>MISP Chrome Plugin</td>
<td>MISP Chrome plugin for adding and looking up indicators</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>PySight2MISP</td>
<td>PySight2MISP is a project that can be run to be used as glue</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td></td>
<td>between iSight intel API and MISP API</td>
<td></td>
</tr>
<tr>
<td>tie2misp</td>
<td>Import DCSO TIE IOCs as MISP events</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>security onion MISP</td>
<td>Grab NIDS rules and Bro Intel generated from a MISP instance and use them in Security Onion</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>virustream</td>
<td>A script to track malware IOCs with OSINT on Twitter.</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>LAC CSV Import</td>
<td>Register MISP events based on information described in files such as CSV and TSV.</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>The Hive</td>
<td>TheHive: a Scalable, Open Source and Free Security Incident Response Platform</td>
<td>Strong links between core team members, tested and known working</td>
</tr>
<tr>
<td>Module</td>
<td>Description</td>
<td>Tested by MISP core team</td>
</tr>
<tr>
<td>-------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>puppet-misp</td>
<td>This module installs and configures MISP - puppet forge site</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>Ansible MISP</td>
<td>Ansible playbook to install Malware Information Sharing Platform (MISP)</td>
<td>unmaintained</td>
</tr>
<tr>
<td>ansible MISP</td>
<td>ansible role to setup MISP</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>OpenDXL ATD MISP</td>
<td>Automated threat intelligence collection with McAfee ATD, OpenDXL and MISP</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>AutoMISP</td>
<td>automate your MISP installs - This shell script is designed to automatically install MISP and the misp-modules extension on either Ubuntu 16.04, or 18.04.</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>Palo Alto Networks report_to_misp</td>
<td>Parse a report and import the events into MISP</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>Palo Alto Networks minemeld-misp</td>
<td>MineMeld nodes for MISP</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>golang-misp</td>
<td>Golang Library to interact with your MISP instance</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>go-misp</td>
<td>Golang MISP API Client</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>MISP MAR</td>
<td>Integration between MISP platform and McAfee Active Response</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>MISP IOC Validator</td>
<td>Validate IOC from MISP ; Export results and iocs to SIEM and sensors using syslog and CEF format</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>vt2misp</td>
<td>Script to fetch data from virustotal and add it to a specific event as an object</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>Threat Pinch Lookup</td>
<td>Documentation and Sharing Repository for ThreatPinch Lookup Chrome &amp; Firefox Extension</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>dovehawk</td>
<td>Dovehawk is a Bro module that automatically imports MISP indicators and reports Sightings</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>yara-exporter</td>
<td>Exporting MISP event attributes to yara rules usable with Thor apt scanner</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>volatility-misp</td>
<td>Volatility plugin to interface with MISP</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>misp2bro</td>
<td>Python script that gets IOC from MISP and converts it into BRO intel files.</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>TA-misp</td>
<td>Splunk integration with MISP</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>MISP QRadar</td>
<td>The Project can used to integrate QRadar with MISP Threat Sharing Platform</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>pymisp-suricata_search</td>
<td>Multi-threaded suricata search module for MISP</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>MISP-ThreatExchange</td>
<td>Script to interface MISP with Facebook ThreatExchange</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>Package</td>
<td>Description</td>
<td>Status</td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
<td>--------</td>
</tr>
<tr>
<td>aptmap</td>
<td>A map displaying threat actors from the misp-galaxy</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>mispy</td>
<td>Another MISP module for Python</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>MispSharp</td>
<td>C# Library for MISP</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>misp_btc</td>
<td>get BTC addresses from MISP and fetch BTC transactions</td>
<td>Tested by MISP core team</td>
</tr>
<tr>
<td>Privacy Aware Sharing of IoCs in MISP</td>
<td>Master Thesis including MISP data.</td>
<td>Master thesis</td>
</tr>
<tr>
<td>sam-bot</td>
<td>Bot to create MISP events from data in Slack</td>
<td>Not tested by MISP core team</td>
</tr>
<tr>
<td>Polarity.io Connector</td>
<td>&quot;Polarity is the memory augmentation platform that makes your team smarter&quot;</td>
<td>Not tested by MISP core team</td>
</tr>
</tbody>
</table>

**Appendix E: Other Threat Intel Resources**

A brief list of online resources that around #ThreatIntel

- Curated list of awesome cybersecurity companies and solutions. *(Updated April 2017)*
- A curated list of awesome malware analysis tools and resources. Inspired by awesome-python and awesome-php.
- An authoritative list of awesome devsecops tools with the help from community experiments and contributions, DEV.SEC.OPS
- Advance Python IoC extractor