

Information Sharing and Taxonomies

Practical Classification of Threat Indicators using MISP



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Objects - or How We Learned to Stop Worrying and Love the Templates

- Attributes are a simple but powerful tool to describe data
- Lacking the capability to create containers around attributes describing a common concept
- The goal was to develop something semi-standardised, with the option to **dynamically build templates**
- We have considered a list of different solutions such as simple boolean operators, but found that the current implementation was superior.
- The result is a simple template that uses the basic attribute types as building blocks along with some meta data
- The template does **not have to be known** in order to use the constructed objects
- What we maintain now is a set of common objects, but similarly to our other JSON formats, users can extend it with their own ideas

MISP Object Templates

- Using a similar JSON format as the taxonomies, galaxies, warninglists.
- You can find the default set of object templates in the git repository¹.
- Some of the object templates capture objects from other standards or mimic the output of tools
- We tried to capture the most common use-cases coming from our own use-case as well as those of various partners that got involved
- Improvements or pull requests for new object templates are of course always welcome

¹<https://www.github.com/MISP/misp-objects/>

Existing Object examples

- ALL-leak - **AIL object**, an example for an object catering to the output of another tool
- Android permission - **An object used to further contextualise another object**
- Bank account
- File **Generic object to describe a file**
- Passive DNS
- Regex
- Sandbox report
- Vulnerability **Enabling new use-cases such as pre-sharing of vulnerability information**
- x509
- Yara **Verbatim sharing of rule sets along with meta-data**

Object Template skeleton

```
1 {  
2   "requiredOneOf" : [],  
3   "required" : [],  
4   "attributes" : {},  
5   "version" : 1,  
6   "description" : "My description",  
7   "meta-category" : "Chosen meta category",  
8   "uuid" : "Object template uuid",  
9   "name" : "Object template name"  
10 }
```

Adding elements to an object template

```
1 "regexp-type": {
2   "description": "Type of the regular expression syntax.",
3   "disable_correlation": true,
4   "ui-priority": 0,
5   "misp-attribute": "text",
6   "values_list": [
7     "PCRE",
8     "PCRE2",
9     "POSIX BRE",
10    "POSIX ERE"
11  ]
12 },
```

Attribute keys

- Primary key: Object relation
- description: A description of the attribute in relation to the object
- disable_correlation: You can disable correlations for attributes in the resulting object
- ui-priority: Not implemented yet, but the idea is to have a "quick view" of objects only showing certain prio levels
- misp-attribute: The misp attribute type used as as the building block
- values_list: an optional list of values from which the user **must** choose instead of entering a value manually
- sane_defaults: an optional list of values from which the user **may** choose instead of entering a value
- multiple: Allow the user to add **more** than one of this attribute

Enforcement of certain keys

- The template also defines which of the added attributes are mandatory
- Requirements are pointed to via their **object relations names**
- We differentiate between two types of rule sets:
 - Required: Everything in this list has to be set in order for the object to validate
 - Required One Of: Any of the attributes in this list will satisfy the requirements

What will the the template actually do?

- Templates create a form that can be used to populate an event
- When using templates, MISP will enforce everything according to the template rules
- However, these are only optional, users can avoid using the templates when creating events via the API
- The reason for this is that you do not need to have the template in order to create an object
- The limitation of this system: You **cannot modify** objects that were created with unknown templates

Templates as rendered in the UI

Add File Object

Object Template	File v10
Description	File object describing a file with meta-information
Requirements	Required one of: filename, size-in-bytes, authenticihash, ssdeep, imphash, pehash, md5, sha1, sha224, sha256, sha384, sha512, sha512/224, sha512/256, tsh, pattern-in-file, x509-fingerprint-sha1, malware-sample
Meta category	File
Distribution	<input type="text" value="Inherit event"/>
Comment	<input type="text"/>

Save	Name :: type	Description	Category	Value
<input type="checkbox"/>	Md5 :: md5	[Insecure] MD5 hash (128 bits)	<input type="text" value="Payload delivery"/>	<input type="text"/>
<input type="checkbox"/>	Pattern-in-file :: pattern-in-file	Pattern that can be found in the file	<input type="text" value="Payload installation"/>	<input type="text"/>
<input type="checkbox"/>	Sha256 :: sha256	Secure Hash Algorithm 2 (256 bits)	<input type="text" value="Payload delivery"/>	<input type="text"/>
<input type="checkbox"/>	Sha512 :: sha512	Secure Hash Algorithm 2 (512 bits)	<input type="text" value="Payload delivery"/>	<input type="text"/>

Templates as rendered in the UI

2018-03-27		Name: file	References: 1
2018-03-27	Payload delivery	filename: putty.exe	+
2018-03-27	Other	size-in-bytes: 774200 size-in-bytes	+
2018-03-27	Other	entropy: 6.7264397226 float	+
2018-03-27	Payload delivery	md5: b6c12d88eeb910784d75a5e4d954001 md5	+
2018-03-27	Payload delivery	sha1: 5ef0915e0f892a25468d3d39c4b50cfa0007b0f sha1	+
2018-03-27	Payload delivery	sha256: 81de4319873046761341387059c1c21188ad727e0f0b77a0551aa0931944 sha256 05e	+
2018-03-27	Payload delivery	sha512: e174ec4f7b36430c2cc66b378e2877d421244c924d5c0f39f2e0f37085332b sha512 76107d95ac91d19cb7f8c6bd880506480baa30664e6104c29370c163cca7 6	+
2018-03-27	Payload delivery	malware-sample: putty.exe	+

Q&A



- <https://github.com/MISP/MISP>
- <https://github.com/MISP/misp-objects>
- info@circl.lu (if you want to join one of the MISP community operated by CIRCL)
- PGP key fingerprint: CA57 2205 C002 4E06 BA70 BE89 EAAD
CFFC 22BD 4CD5