

MISP - GALAXY 2.0

METHOD FOR SHARING THREAT INTELLIGENCE

TEAM CIRCL

INFO@CIRCL.LU

AUGUST 3, 2022



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- Present the features available for Sharing *galaxy clusters*
- Look at the internals of what changed in the datamodel and MISP's behaviors

└ Outline of the presentation

- Present the features available for Sharing *galaxy clusters*
- Look at the internals of what changed in the datamodel and MISP's behaviors

Galaxy 2.0 introduces various new features for *Galaxies* and their *Clusters* allowing:

- Creation of **custom** *Clusters*
- **ACL** on *Clusters*
- **Connection** of *Clusters* via *Relations*
- **Synchronization** to connected instances.
- **Visualization** of forks and relationships

└─ MISP Galaxy 2.0

Galaxy 2.0 introduces various new features for Galaxies and their Clusters allowing:

- Creation of **custom** Clusters
- **ACL** on Clusters
- **Connection** of Clusters via Relations
- **Synchronization** to connected instances.
- **Visualization** of forks and relationships

Default *Galaxy cluster*

- Coming from the `misp-galaxy` repository¹
- Cannot be edited
 - ▶ Only way to provide modification is to modify the stored JSON or to open a pull request
 - ▶ Are not synchronized
 - ▶ Source of trust
- Restrictions propagate to their children (`Galaxy cluster elements`, `Cluster relationships`)

Custom *Galaxy cluster*

- Can be created via the UI or API
- Belongs to an organisation
 - ▶ Fully editable
 - ▶ Are synchronized

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

└─ Default Galaxy clusters

DEFAULT GALAXY CLUSTERS	
Default Galaxy cluster	
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■ Cannot be edited	
▶ Only way to provide modification is to modify the stored JSON or to open a pull request	
▶ Are not synchronized	
▶ Source of trust	
■ Restrictions propagate to their children (<code>Galaxy cluster elements</code> , <code>Cluster relationships</code>)	
Custom Galaxy cluster	
■ Can be created via the UI or API	
■ Belongs to an organisation	
▶ Fully editable	
▶ Are synchronized	
¹ https://github.com/MISP/misp-galaxy	

Clusters and Relations can be edited.

■ New *Clusters* fields

- ▶ distribution, sharing_group_id
- ▶ org_id, orgc_id
- ▶ locked, published, deleted
- ▶ default
 - *Clusters* coming from the misp-galaxies repository are marked as default
 - Not synchronized
 - Same purpose as *Event's* locked field
- ▶ extends_uuid
 - Point to the *Cluster* that has been forked
- ▶ extends_version
 - Keep track of the *Cluster* version that has been forked

└─ MISP Galaxy 2.0 - Comparison with prior version

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- *Role perm_galaxy_editor*
- Relations also have a distribution and can have *Tags*
- Synchronization servers have 2 new flags
 - ▶ pull_galaxy_clusters
 - ▶ push_galaxy_clusters
- Clusters blacklist

└─ MISP Galaxy 2.0 - Others changes

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- Standard CRUD
- Soft and Hard deletion
- Publishing
- Update forked cluster to keep it synchronized with its parent
- ACL on the *Cluster* itself, not on its tag
 - ▶ `misp-galaxy:galaxy-type="cluster UUID"`
 - ▶ `misp-galaxy:mitre-attack-pattern="e4932f21-4867-4de6-849a-1b11e48e2682"`

└─ Features in depth: CRUD

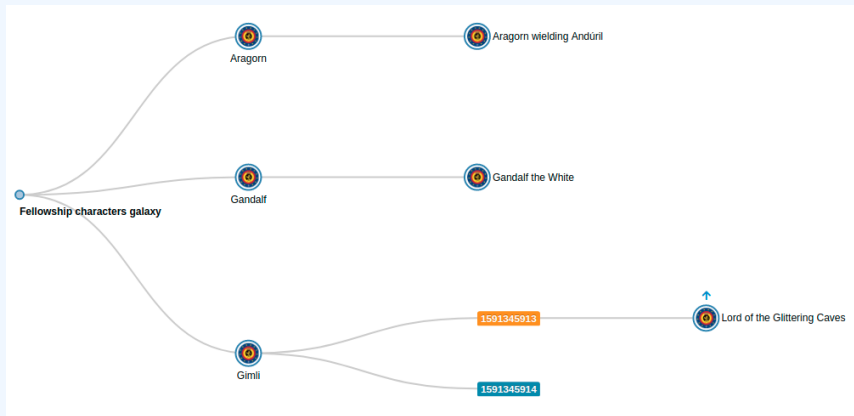
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FEATURES IN DEPTH: VISUALIZATION

Tree view of forked Clusters

Advertising

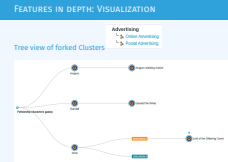
- Online Advertising
- Postal Advertising



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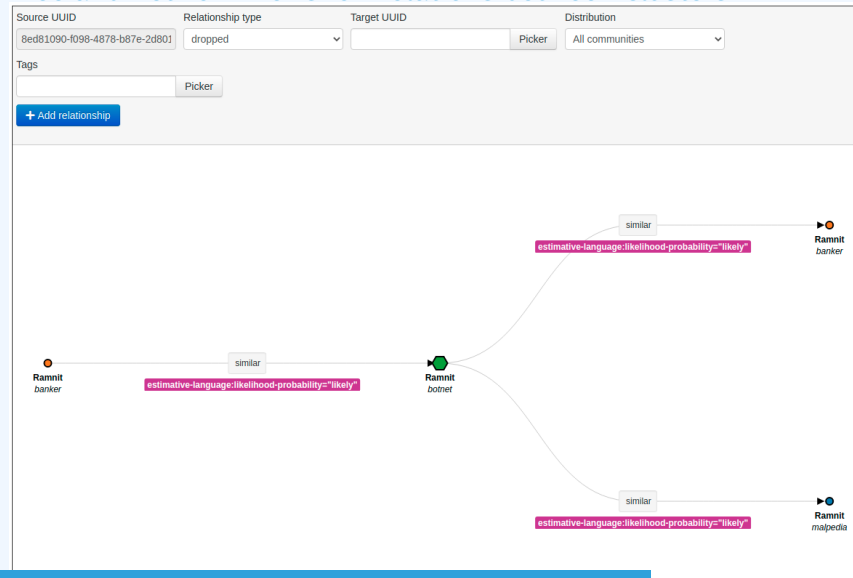
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Features in depth: Visualization



FEATURES IN DEPTH: VISUALIZATION

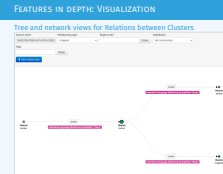
Tree and network views for Relations between Clusters



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Features in depth: Visualization



GALAXY CLUSTER ELEMENTS

Hasn't been touched: Still a key-value stored. But new feature have been added²

Tabular view

- Allows you to browse **cluster elements** like before

« previous

1

2

3

next »

last »

Tabular view

JSON view

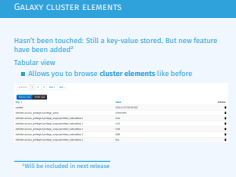
Key ↓	Value	Actions
created	2018-10-01T00:00:00Z	
definition.access_privilege.0.privilege_action	CISAUSES	
definition.access_privilege.0.privilege_scope.permitted_nationalities.0	USA	
definition.access_privilege.0.privilege_scope.permitted_nationalities.1	AUS	
definition.access_privilege.0.privilege_scope.permitted_nationalities.2	CAN	
definition.access_privilege.0.privilege_scope.permitted_nationalities.3	GBR	
definition.access_privilege.0.privilege_scope.permitted_nationalities.4	NZL	

²Will be included in next release

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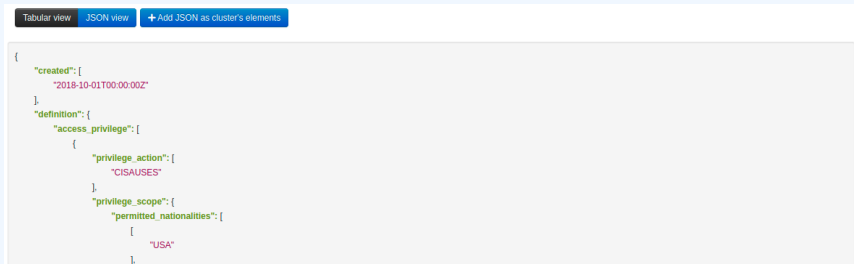
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└ Galaxy cluster elements



JSON view

- Allows you to visualisation **cluster element** in a JSON structure
- Allows you to convert any JSON into **cluster elements** enabling searches and correlations



The screenshot shows the MISP Galaxy interface with the 'JSON view' tab selected. The JSON structure represents a cluster element with the following details:

```
{
  "created": [
    "2018-10-01T00:00:00Z"
  ],
  "definition": {
    "access_privilege": [
      {
        "privilege_action": [
          "CISAUSES"
        ],
        "privilege_scope": {
          "permitted_nationalities": [
            "USA"
          ]
        }
      }
    ]
  }
}
```

└ Galaxy cluster elements



Has its own synchronization mechanism which can be enabled with the `pull_galaxy_cluster` and `push_galaxy_cluster` flags

- **Pull All:** Pull all remote Clusters (similar to event's pull all)
- **Pull Update:** Update local Clusters (similar to event's pull update)
- **Pull Relevant:** Pull missing Clusters based on local Tags
- **Push:** Triggered whenever a Cluster is published or via standard push

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└ Synchronization in depth

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