EclecticIQ Platform sysadmin how-tos

Hands-on articles for system administrators

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How to make API calls with a script

Make calls to the EclecticIQ API using our simple 'papi' script.

Dependencies

The script we are going to use in this example relies on the following dependencies:

- **HTTPie** `(http://httpie.org/)`
- **jq** `(https://stedolan.github.io/jq/)`

The default values for user name and password in the script are:

- `USERNAME=test`
- `PASSWORD=test`

How the script works

You can use the `papi.sh` script to make calls to the EclecticIQ Platform API from the command line. The script uses *HTTPie* and *jq* to perform the following actions:

- It communicates with the `auth` API endpoint to authenticate and obtain a bearer token.
- It makes calls to the platform API and it includes the token along with the other call parameters.

Create the papi.sh file

Create or modify the *papi.sh* script so that it looks like the following example:

```
#!/bin/bash

#
# Helper for interacting with the platform API from the command line. This tool
# is a wrapper around httpie. It will take care of authentication and some
# other things. It takes at least three arguments:
#
# - host name
# - http method
# - relative url (without the /api/ part)
#
# Any additional arguments are propagated to httpie.
#
# Examples:
#
#   platform-api-http https://some.host/ GET /users/
#
#   platform-api-http localhost:8000 POST /some/endpoint/ @request-stored-in-a-file.json
#

set -e

readonly HTTPIE=http
readonly HTTPIE_ARGS="--check-status --verify=no"
readonly USERNAME=test
readonly PASSWORD=test

usage() {
    echo "Usage: $(basename $0) host method path [http-args]" > /dev/stderr
    exit 1
}

main () {
    local HOST="$1"
    local METHOD="$2"
    local API_PATH="$3"
    shift 3 || usage
    local TOKEN=$(${HTTPIE} ${HTTPIE_ARGS} POST "${HOST}/api/auth" username=${USERNAME}
password=${PASSWORD} | jq --raw-output '.token')
    local URL="${HOST}/api${API_PATH}"
    ${HTTPIE} ${HTTPIE_ARGS} ${METHOD} ${URL} Authorization:'"Bearer ${TOKEN}"' "$@"
}

main "$@"
```

Authentication

When you make a call to the platform API with `papi.sh`, the script takes care of the following tasks:

- It carries out the authentication step by tokenizing the user's credentials (user name and password).
- When you make a call using the script, it sends the bearer token in the `Authorization` HTTP header: `Authorization: Bearer ${token}`.

The authentication mechanism is based on **JSON web tokens** (`http://jwt.io/`).

By default, the token expires 30 minutes after successfully signing in to a platform user session. When the token expires, the corresponding session is terminated, and you need to sign back in to the platform.

When human interaction is detected — for example, keystrokes or mouse activity — the token is automatically refreshed every 60 seconds. This prevents the system from signing out users who may be working or saving data at that time.

Therefore, the default maximum amount of idle time without any human interaction before being automatically signed out equals to *session token validity - 1 minute* .

To authenticate and access the platform, do the following:

- Make a `POST` call.
- In the call, pass your authentication credentials as a JSON object to the `/auth` endpoint. The credential data is used to generate a bearer token that is returned with the response.

Include the generated bearer token in the `Authorization` HTTP header with each subsequent API call.
The `Authorization` HTTP header has the following format: `Authorization: Bearer ${token}`

The following examples show the isolated code snippets in the script that take care of authorization credentials, and passing the token with the `Authorization` HTTP header, respectively.

```
local TOKEN=$(${HTTPIE} ${HTTPIE_ARGS} POST "${HOST}/api/auth" username=${USERNAME}
password=${PASSWORD} | jq --raw-output '.token')
```

```
local URL="${HOST}/api${API_PATH}"
${HTTPIE} ${HTTPIE_ARGS} ${METHOD} ${URL} Authorization:'"Bearer ${TOKEN}"' "$@"
```

Make the script executable

To make the script executable, run the following command(s):

```
$ chmod +x ~/papi.sh
```

Examples:

```
$ ./papi.sh https://${platform_host}/ get /enricher-tasks/
```

```
$ ./papi.sh https://${platform_host}/ get /configurations/taxii.settings
```

```
$ ./papi.sh https://${platform_host}/ post /utility-tasks/12/run
```

Create an alias for the script

You can create an alias in *~/.bash_profile* to make it easier to call the script; run the following command(s):

```
alias papi="~/papi.sh"
```

Examples:

```
$ papi https://${platform_host}/ get /enricher-tasks/
```

```
$ papi https://${platform_host}/ get "/entities/?limit=1&sort=-created_at"
```

```
$ papi https://${platform_host}/ get "/entities/?limit=1&sort=-created_at"
```

Input parameters

To use the script to make calls to the platform API, do the following:

- In the terminal or in the command line, call the script by typing its name or the corresponding alias, so either `./papi.sh` or `papi`.
- Set the target host name you want to reach, for example `https://${platform_host}`.
- Pass a valid **HTTP method** (`http://www.restapitutorial.com/lessons/httpmethods.html`) like `get` or `post`.
- Pass the URL corresponding to the API endpoint whose service you want to consume, for example `/outgoing-feeds/`.
- *Optional* — Pass any valid URL query parameters or a *.json* file containing any additional request parameters.

Parameter	Description
`https://${platform_host}/`	*Required* — The name of the host used to reach the API endpoint and to communicate with the API service.
`POST`, `GET`, `PUT`, `DELETE`	*Required* — A valid **HTTP method** (`http://www.restapitutorial.com/lessons/httpmethods.html`) to create, read, update, or delete a resource.
`/${API_endpoint}/`	*Required* — A relative URL pointing to the API endpoint that exposes the service you want to consume.
`?url=true&query=search-or-filter&params=4`	*Optional* — URL query parameters to send any additional search parameters and/or to filter the results returned in the response.

Besides appending URL query parameters, you can also send your request parameters as a JSON file. Example:

```
$ papi https://${platform_host}/ get /entities/ @request-parameters.json
```

Error handling

When an error occurs, the API handles it by returning a **4xx (input/client error) or 5xx (server issue) HTTP response code** (https://httpstatuses.com/), and by including a short explanatory message in the JSON response body.

The key/value pairs in the `errors` JSON object provide more details about the possible cause of the error, which should help you solve it.

- `status`: the HTTP response code.
- `title`: the name of the error.
- `detail`: a short explanation of the issue with more context, when available.

```
{
  "errors" : [

    {
      "detail" : "The requested URL was not found on the server. If you entered the URL manually
please check your spelling and try again.",
      "status" : 404,
      "title"  : "Not Found"
    }

  ]
}
```

Examples

✔ Key and parameter names, as well as values in the code examples are dummy.
Replace them with appropriate names and values, depending on your environment and system configuration.

Make HTTP calls with the script

Create or modify the *papi.sh* script so that it looks like the following example:

```
#!/bin/bash

#
# Helper for interacting with the platform API from the command line. This tool
# is a wrapper around httpie. It will take care of authentication and some
# other things. It takes at least three arguments:
#
# - host name
# - http method
# - relative url (without the /api/ part)
#
# Any additional arguments are propagated to httpie.
#
# Examples:
#
#   platform-api-http https://some.host/ GET /users/
#
#   platform-api-http localhost:8000 POST /some/endpoint/ @request-stored-in-a-file.json
#

set -e

readonly HTTPIE=http
readonly HTTPIE_ARGS="--check-status --verify=no"
readonly USERNAME=${platform_username}
readonly PASSWORD=${platform_password}

usage() {
    echo "Usage: $(basename $0) host method path [http-args]" > /dev/stderr
    exit 1
}

main () {
    local HOST="$1"
    local METHOD="$2"
    local API_PATH="$3"
    shift 3 || usage
    local TOKEN=$(${HTTPIE} ${HTTPIE_ARGS} POST "${HOST}/api/auth" username=${USERNAME}
password=${PASSWORD} | jq --raw-output '.token')
    local URL="${HOST}/api${API_PATH}"
    ${HTTPIE} ${HTTPIE_ARGS} ${METHOD} ${URL} Authorization:'"Bearer ${TOKEN}"' "$@"
}

main "$@"
```

Trigger a dynamic dataset update

This example shows how to trigger a dynamic dataset update task.

- Edit the `papi.sh` script to specify the correct IP address/host you want to reach.
- To retrieve the dataset ID, sign in to the platform and do the following:
  - On the left-hand navigation sidebar, click **Datasets**.
  - In the web browser address bar, inspect the URL: the numeric value in the URL immediately after `/intel-sets/` is the dataset ID.
    For example if the URL reads `https://${platform_host}/private/intel-sets/29`, the dataset ID is `29`.

- Make a `GET` API call to retrieve the dataset corresponding to the ID you retrieved in the previous step:
  `$ papi https://${platform_host} get /intel-sets/${set_id}`
- Make a `GET` API call to retrieve a list of all utility tasks.
  You need this information to identify the task handling dynamic sets:
  `$ papi https://${platform_host}/ get /utility-tasks/`
- Use the appropriate task ID — the ID you retrieved in the previous step — to make a `POST` API call that triggers a dynamic set update task:
  `$ papi https://${platform_host}/ post /utility-tasks/${task_id}/run`
- Make a `GET` API call to validate the task run you triggered in the previous step:
  `$ papi https://${platform_host}/ get /task-runs/${task_id}`
  You can find the `${task_id}` value you need in the response to the previous `${task-id}` request.
- Verify that the dataset was correctly updated by making a new `GET` API call and by passing the dataset ID with it:
  `$ papi https://${platform_host}/ get /intel-sets/${set_id}`

```
# Get a specific dataset ID
$ papi https://${platform_host}/ get /intel-sets/${set_id}

# Get the utility task list to look for the ID of the specific task you want to run
$ papi https://${platform_host}/ get /utility-tasks/

# In the response, find the ID of the task that updates dynamic sets
# Ex.: find the ID of the 'utilities.intel_set_update' tasks

# Use this ID to trigger and run a specific task
$ papi https://${platform_host}/ post /utility-tasks/${task_id}/run

# The response returns the task run ID

# Get a specific task run to check its status
$ papi https://${platform_host}/ get /task-runs/${task_id}

# Get the output feed content blocks
$ papi https://${platform_host}/ get /outgoing-feeds/${outgoing_feed_id}/content-blocks/

# Get the output feed content block ID
$ papi https://${platform_host}/ get /content-blocks/${content_block_id}
```

How to retrieve outgoing feeds through the API

Fetch outgoing feeds either manually through the platform GUI or programmatically via the API.

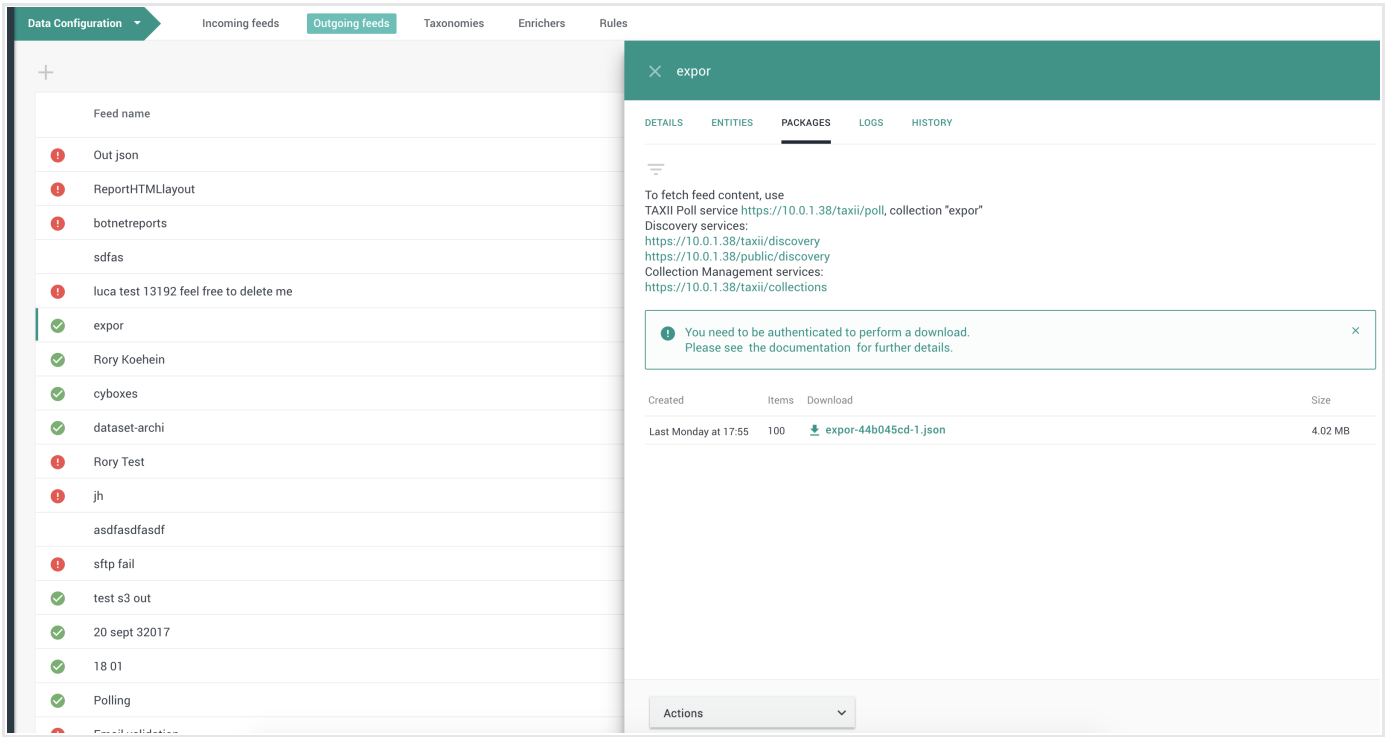
You can retrieve outgoing feed data in two ways:

- Manually, via the platform GUI
- Programmatically, via API calls to the outgoing feed endpoint URLs.

Download outgoing feeds manually

To manually download outgoing feed data through the platform web browser-based GUI, do the following:

- On the left-hand navigation sidebar click **Outgoing feeds**.
- The **Outgoing feeds** page displays an overview of the configured output data points, i.e. the publishing channels the platform uses to distribute intel data.
  You can sort the items on the view by column header. To do so, click the column header you want to base the data sorting on. An upward-pointing ▲ or a downward-pointing ▼ arrow in the header indicates ascending and descending sort order, respectively.
- Click the row corresponding to the outgoing feed whose data you want to manually download.
- On the outgoing feed detail pane, select the **Content** tab.



The **Content** tab displays an overview of all the outgoing feed execution runs since the creation of the feed. Successful executions generate and distribute content.

- To download the data for a specific run, click the file link under **Download**, and then save it to a target location.
- The file format depends on the content type for the feed data, defined during the outgoing feed creation and configuration.

Download outgoing feeds via the API

You can download outgoing feed data programmatically by making calls to the platform API using the HTTP protocol.
To implement this option:

- The outgoing feed configured **Transport type** needs to be set to **HTTP download**.
- Before making the first API call to fetch the outgoing feed data, you need to authenticate to receive a bearer token.
- You need to pass a valid bearer token with each API call.

Authentication

The authentication mechanism is based on **JSON web tokens** `(http://jwt.io/)`.

By default, the token expires 30 minutes after successfully signing in to a platform user session. When the token expires, the corresponding session is terminated, and you need to sign back in to the platform.

When human interaction is detected — for example, keystrokes or mouse activity — the token is automatically refreshed every 60 seconds. This prevents the system from signing out users who may be working or saving data at that time.

Therefore, the default maximum amount of idle time without any human interaction before being automatically signed out equals to *session token validity - 1 minute*.

To authenticate and access the platform, do the following:

- Make a `POST` call.
- In the call, pass your authentication credentials as a JSON object to the `/auth` endpoint. The credential data is used to generate a bearer token that is returned with the response.

Include the generated bearer token in the `Authorization` HTTP header with each subsequent API call.
The `Authorization` HTTP header has the following format: `Authorization: Bearer ${token}`

Auth request

API endpoint	`/auth`
Auth method	`POST`
HTTP headers	`"Content-Type: application/json", "Accept: application/json"`
API request	`POST + "Content-Type: application/json" + "Accept: application/json" + { "username": "${username}", "password": "${password}" } + ${platform_host}/api/auth`
API response	`{ "expires_at": "${expiration_timestamp}", "token": "${token}" }`

The following example uses cURL to authenticate:

```
# Public API auth endpoint
$ curl -X POST
       --insecure
       -H "Content-Type: application/json"
       -d '{ "username" : "${username}", "password" : "${password}" }'
       https://${platform_host}/api/auth
```

```
# copy-paste version:
$ curl -X POST --insecure -H "Content-Type: application/json" -d '{ "username" : "${username}",
"password" : "${password}" }' https://${platform_host}/api/auth
```

```
# Private API auth endpoint
$ curl -X POST
       --insecure
       -H "Content-Type: application/json"
       -d '{ "username" : "${username}", "password" : "${password}" }'
       https://${platform_host}/private/auth
```

```
# copy-paste version:
$ curl -X POST --insecure -H "Content-Type: application/json" -d '{ "username" : "${username}",
"password" : "${password}" }' https://${platform_host}/private/auth
```

Auth response

When the user name and password credential are valid, the `POST` call returns a JSON web token:

```
{
  "expires_at": "2016-03-30T12:11:40.078219+00:00",
  "token"     :
"abHpYXQiOjE0NTkzMzI3MDAsIm4TcCI6MTQ1OTMzOTkwMCwiYWxnIjoiSFMyNTYifQ.oyY1c2VyX2lkIjo1fQ.LQQ3NdUHp4s-
QCXsxq3feI0Dy6tf5XQX9DOML1RNIzQ"
}
```

You need to include the bearer token value in each subsequent API call. You pass the token by including an `Authorization` HTTP header in the API request.
The `Authorization` HTTP header has the following format: `Authorization: Bearer ${token}`

In the following example, you make a `GET` request to the `/api/` or the the `/private/` endpoint to retrieve a list of the available API endpoints and the corresponding methods for the public or the private API, respectively:

```
# GET list of public API endpoints
$ curl -X GET
       -v
       --insecure
       -i
       -H "Content-Type: application/json"
       -H "Accept: application/json"
       -H "Authorization: Bearer ${token}"
       https://${platform_host}/api/
```

```
# copy-paste version:
$ curl -X GET -v --insecure -i -H "Content-Type: application/json" -H "Accept: application/json"
-H "Authorization: Bearer ${token}" https://${platform_host}/api/
```

```
# GET list of private API endpoints
$ curl -X GET
       -v
       --insecure
       -i
       -H "Content-Type: application/json"
       -H "Accept: application/json"
       -H "Authorization: Bearer ${token}"
       https://${platform_host}/private/
```

```
# copy-paste version:
$ curl -X GET -v --insecure -i -H "Content-Type: application/json" -H "Accept: application/json"
-H "Authorization: Bearer ${token}" https://${platform_host}/private/
```

Warning:
About cURL calls

- If you make HTTPs cURL calls to the API *and* you have a self-signed or an invalid certificate, include the `-k` or the `--insecure` parameter in the cURL call to skip the SSL connection CA certificate check.
- Always append a `/` trailing slash at the end of an API URL endpoint. The only exception is `/auth`, which does not take a trailing forward slash.
- In the cURL call, the `-d` data payload with the entity information always needs to be flat JSON, not hierarchical JSON.
  If you want to pass a hierarchical JSON object, include the `--data-binary` parameter, followed by the path to the JSON file, for example `@/path/to/entity_file.json`.

Public outgoing feed endpoints

The endpoints in this section expose only open/public HTTP download outgoing feeds, i.e. the outgoing feeds that are flagged as public upon creation.

To obtain a list of the private HTTP download outgoing feeds, use the `/private/outgoing-feed-download/` endpoint. This endpoint returns only private outgoing feeds, i.e. the outgoing feeds that were not flagged as public when they were created. The outgoing feeds returned with the response require authorization to access their content.

- `/private/open-outgoing-feed-download/`
  Returns all public outgoing feeds with HTTP transport type.
- `/private/open-outgoing-feed-download/${feed-id}/`
  Returns a specific outgoing feed, including all successful feed executions.

- `/private/open-outgoing-feed-download/${feed-id}/runs/latest`
  Returns the latest/most recent successful feed execution with the corresponding published content blocks for a specific outgoing feed.
- `/private/open-outgoing-feed-download/${feed-id}/runs/${run-id}/content-blocks/latest`
  Returns the latest content blocks of a specific successful feed execution for a specific outgoing feed.
- `/private/open-outgoing-feed-download/${feed-id}/runs/${run-id}/content-blocks/${content-block-id}`
  Returns a specific content block of a specific successful feed execution for a specific outgoing feed.

> ✔ The API request examples in the following sections use cURL and the *papi.sh* script available with the platform.

Download outgoing feeds

Download a list of all available public outgoing feeds
This call returns a JSON object with an array listing all available public outgoing feeds with HTTP transport type.

API endpoint	`/open-outgoing-feed-download/`
API method	`GET`
HTTP headers	`"Content-Type: application/json", "Accept: application/json", "Authorization: Bearer ${token}"`
API request	`GET + "Content-Type: application/json" + "Accept: application/json" + "Authorization: Bearer ${token}" + ${platform_host}/private/open-outgoing-feed-download/`
API response	`{ "data" : [ ${open_outgoing_feed_array} ] }`

API request outgoing feeds

cURL call

```
curl -X GET
       -v
       --insecure
       -i
       -H "Content-Type: application/json"
       -H "Accept: application/json"
       -H "Authorization: Bearer ${token}"
       https://${platform_host}/private/open-outgoing-feed-download/

# copy-paste version:
curl -X GET -v --insecure -i -H "Content-Type: application/json" -H "Accept: application/json" -H
"Authorization: Bearer ${token}"
```

papi script call

```
papi https://${platform_host}/ get /open-outgoing-feed-download/
```

API response outgoing feeds


```
{
  "data": [

    {
      "id": 1,
      "link": "/private/open-outgoing-feed-download/1",
      "name": "Default outgoing feed"
    },

    {
      "id": 16,
      "link": "/private/open-outgoing-feed-download/18",
      "name": "Public feed with electrolytes"
    },

    {
      "id": 25,
      "link": "/private/open-outgoing-feed-download/25",
      "name": "XYZ"
    }

  ]
}
```


Download a specific outgoing feed

Download the details of a specific outgoing feed
This call returns a JSON object containing the details of a specific public outgoing feed with HTTP transport type.
To select the public outgoing feed whose details you want to retrieve, include the feed ID in the API request endpoint.

API endpoint	`/open-outgoing-feed-download/${feed-id}/`
API method	`GET`
HTTP headers	`"Content-Type: application/json", "Accept: application/json", "Authorization: Bearer ${token}"`
API request	`GET` **+** `"Content-Type: application/json"` **+** `"Accept: application/json"` **+** `"Authorization: Bearer ${token}"` **+** `${platform_host}/private/open-outgoing-feed-download/${feed-id}/`
API response	`{ "data" : { ${specific_feed_details} } }`

API request specific outgoing feed

cURL call

```
$ curl -X GET
       -v
       --insecure
       -i
       -H "Content-Type: application/json"
       -H "Accept: application/json"
       -H "Authorization: Bearer ${token}"
       https://${platform_host}/private/open-outgoing-feed-download/18

# copy-paste version:
$ curl -X GET -v --insecure -i -H "Content-Type: application/json" -H "Accept: application/json"
-H "Authorization: Bearer ${token}" https://${platform_host}/private/open-outgoing-feed-
download/18
```

papi script call

```
$ papi https://${platform_host}/ get /open-outgoing-feed-download/18
```

API response specific outgoing feed

The response details include an array listing the successful feed executions.

The paths in the `content_blocks` array have the following format:
`/private/open-outgoing-feed-download/${feed-id}/runs/${run-id}/content-blocks/${content-block-id}`

- A *run* is a feed execution to publish the feed content.
- A *content block* is a data blob whose format depends on the content type defined for the feed. For example, JSON, CSV or STIX.

```
{
  "data": {

    "content_blocks": [
      "/private/open-outgoing-feed-download/18/runs/0ad2edd4-8a7b-4894-b8b3-aee90a22ebaa/content-blocks/32",
      "/private/open-outgoing-feed-download/18/runs/5fdeff71-93af-43a5-b94e-c4ab857a749c/content-blocks/33",
      "/private/open-outgoing-feed-download/18/runs/40e31ada-06e6-4647-a287-4c9b54841619/content-blocks/34",
      "/private/open-outgoing-feed-download/18/runs/0f56ec9c-cc1e-4aae-afd0-f693f412ad55/content-blocks/35",
      "/private/open-outgoing-feed-download/18/runs/d842dd68-8ecf-4ecf-b073-a591d361cf26/content-blocks/36",
      "/private/open-outgoing-feed-download/18/runs/eed28e1e-4352-42a5-8b1f-cfc918b0e0ab/content-blocks/37",
      "/private/open-outgoing-feed-download/18/runs/f830aa7b-4ddc-4725-b13c-7cbe445f306d/content-blocks/40",
      "/private/open-outgoing-feed-download/18/runs/a11bb585-720a-4c56-b650-90cb9d6a69e5/content-blocks/41",
      "/private/open-outgoing-feed-download/18/runs/6e677f4b-c91d-49dd-9c39-70266987b863/content-blocks/42"
    ],

    "id": 18,
    "name": "Public feed with electrolytes"
  }
}
```


Download the latest run

Download the latest successful run of a specific outgoing feed

This call returns a JSON object containing the details of the latest execution (run) of a specific public outgoing feed with HTTP transport type.

To select the public outgoing feed whose details you want to retrieve, include the feed ID in the API request endpoint.

API endpoint	`/open-outgoing-feed-download/${feed-id}/runs/latest`
API method	`GET`
HTTP headers	`"Content-Type: application/json"`, `"Accept: application/json"`, `"Authorization: Bearer ${token}"`
API request	`GET` **+** `"Content-Type: application/json"` **+** `"Accept: application/json"` **+** `"Authorization: Bearer ${token}"` **+** `${platform_host}/private/open-outgoing-feed-download/${feed-id}/runs/latest`
API response	`{ "data" : { ${specific_feed_latest_run_details} } }`

API request latest run

cURL call

```
$ curl -X GET
       -v
       --insecure
       -i
       -H "Content-Type: application/json"
       -H "Accept: application/json"
       -H "Authorization: Bearer ${token}"
       https://${platform_host}/private/open-outgoing-feed-download/18/runs/latest

# copy-paste version:
$ curl -X GET -v --insecure -i -H "Content-Type: application/json" -H "Accept: application/json"
-H "Authorization: Bearer ${token}" https://${platform_host}/private/open-outgoing-feed-
download/18/runs/latest
```

papi script call

```
$ papi https://${platform_host}/ get /open-outgoing-feed-download/18/runs/latest
```

API response latest run

The response details include an array with the content blocks belonging to the most recent successful execution of the specified feed.

The paths in the `content_blocks` array have the following format:
`/private/open-outgoing-feed-download/${feed-id}/runs/${run-id}/content-blocks/${content-block-id}`

- A *run* is a feed execution to publish the feed content.
- A *content block* is a data blob whose format depends on the content type defined for the feed. For example, JSON, CSV or STIX.

```
{
  "data": {

    "content_blocks": [
      "/private/open-outgoing-feed-download/18/runs/6e677f4b-c91d-49dd-9c39-70266987b863/content-
blocks/42"
    ],

    "id": 18,
    "name": "Public feed with electrolytes"
  }
}
```

Download the latest content

Download the latest content from a specific run of a specific outgoing feed
This call returns the details of the latest content block belonging to a specific execution (run) of a specific public outgoing feed with HTTP transport type. To select the public outgoing feed and the execution whose details you want to retrieve, include the feed ID and the execution (run) ID in the API request endpoint.

API endpoint	`/open-outgoing-feed-download/${feed-id}/runs/${run-id}/content-blocks/latest`
Create method	`GET`
HTTP headers	`"Content-Type: application/json", "Accept: application/json", "Authorization: Bearer ${token}"`
API request	`GET + "Content-Type: application/json" + "Accept: application/json" + "Authorization: Bearer ${token}" + ${platform_host}/private/open-outgoing-feed-download/${feed-id}/runs/${run-id}/content-blocks/latest`
API response	`${content_block_blob}`

API request latest content

cURL call

```
$ curl -X GET
       -v
       --insecure
       -i
       -H "Content-Type: application/json"
       -H "Authorization: Bearer ${token}"
       https://${platform_host}/private/open-outgoing-feed-download/18/runs/6e677f4b-c91d-49dd-9c39-70266987b863/content-blocks/latest

# copy-paste version:
$ curl -X GET -v --insecure -i -H "Content-Type: application/json" -H "Authorization: Bearer ${token}" https://${platform_host}/private/open-outgoing-feed-download/18/runs/6e677f4b-c91d-49dd-9c39-70266987b863/content-blocks/latest
```

papi script call

```
$ papi https://${platform_host}/ get /open-outgoing-feed-download/18/runs/6e677f4b-c91d-49dd-9c39-70266987b863/content-blocks/latest
```

API response latest content

The response returns the lastest content block that was generated and distributed with the specific execution of a specific public outgoing feed, as specified in the API request endpoint.

The paths in the `content_blocks` array have the following format:
`/private/open-outgoing-feed-download/${feed-id}/runs/${run-id}/content-blocks/${content-block-id}`

- A *run* is a feed execution to publish the feed content.

- A *content block* is a data blob whose format depends on the content type defined for the feed. For example, JSON, CSV or STIX.

```
<stix:STIX_Package xmlns:cybox="http://cybox.mitre.org/cybox-2"
xmlns:indicator="http://stix.mitre.org/Indicator-2" xmlns:stix="http://stix.mitre.org/stix-1"
xmlns:id-1="http://hailataxii.com"
xmlns:DomainNameObj="http://cybox.mitre.org/objects#DomainNameObject-1"
xmlns:stixCommon="http://stix.mitre.org/common-1" xmlns:not-yet-configured="http://not-yet-
configured.example.org/" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" id="not-yet-
configured:package-39de53f4-cbe4-4755-8274-1f6f825639cb" timestamp="2016-01-29T10:42:19+00:00"
version="1.2">
  <stix:STIX_Header>
    <stix:Title>Entities package</stix:Title>
  </stix:STIX_Header>
    <stix:Indicators>
      <stix:Indicator id="not-yet-configured:indicator-153e9285-c99f-412e-9f88-1f883765d897"
xsi:type="indicator:IndicatorType">
        <indicator:Observable id="id-1:Observable-9f042056-7ba1-433a-b67f-467982412fe0"
sighting_count="1">
          <cybox:Title>Domain:Edited</cybox:Title>
          <cybox:Description>Domain: xn----8sbafbb5baamcbp7aadbi1bi6e2bygua.xn--p1ai | isFQDN:
True | </cybox:Description>
          <cybox:Object id="id-1:DomainName-3cfb1c45-debd-421c-92de-5aa5b7a447bc">
            <cybox:Properties xsi:type="DomainNameObj:DomainNameObjectType">
              <DomainNameObj:Value condition="Equals">xn----8sbafbb5baamcbp7aadbi1bi6e2bygua.xn--
p1ai</DomainNameObj:Value>
            </cybox:Properties>
          </cybox:Object>
        </indicator:Observable>
        <indicator:Kill_Chain_Phases>
          <stixComsuccemon:Kill_Chain_Phase phase_id="stix:TTP-786ca8f9-2d9a-4213-b38e-
399af4a2e5d6"/>
        </indicator:Kill_Chain_Phases>
      </stix:Indicator>
    </stix:Indicators>
</stix:STIX_Package>
```

Download specific content

Download specific content from a specific run of a specific outgoing feed

This call returns the details of the specific content belonging to the specified run of a specific public outgoing feed with HTTP transport type. You select the feed, the run, and the content block you want the call to return by adding the feed ID, the run ID, and the content block ID to the API endpoint of the request.

API endpoint	`/open-outgoing-feed-download/${feed-id}/runs/${run-id}/content-blocks/${content-block-id}`
Create method	`GET`
HTTP headers	`"Content-Type: application/json", "Accept: application/json", "Authorization: Bearer ${token}"`
API request	`GET` + `"Content-Type: application/json"` + `"Accept: application/json"` + `"Authorization: Bearer ${token}"` + `${platform_host}/private/open-outgoing-feed-download/${feed-id}/runs/${run-id}/content-blocks/${content-block-id}`

API response	`${content_block_blob}`

API request specific content

cURL call

```
$ curl -X GET
       -v
       --insecure
       -i
       -H "Content-Type: application/json"
       -H "Authorization: Bearer ${token}"
       https://${platform_host}/private/open-outgoing-feed-download/33/runs/2fbcc01f-6553-4a92-
ac3d-456049a198f7/content-blocks/84
```

```
# copy-paste version
$ curl -X GET -v --insecure -i -H "Content-Type: application/json" -H "Authorization: Bearer
${token}" https://${platform_host}/private/open-outgoing-feed-download/33/runs/2fbcc01f-6553-
4a92-ac3d-456049a198f7/content-blocks/84
```

papi script call

```
$ papi https://${platform_host}/ get /open-outgoing-feed-download/33/runs/2fbcc01f-6553-4a92-
ac3d-456049a198f7/content-blocks/84
```

API response specific content

The response returns the specific content block that was generated and distributed with the specific execution of a specific public outgoing feed, as per corresponding feed, run, and content block IDs defined in the API request endpoint.

The paths in the `content_blocks` array have the following format:
`/private/open-outgoing-feed-download/${feed-id}/runs/${run-id}/content-blocks/${content-block-id}`

- A *run* is a feed execution to publish the feed content.
- A *content block* is a data blob whose format depends on the content type defined for the feed. For example, JSON, CSV or STIX.

```
CEF:0|EclecticIQ|EclecticIQ Platform|0.15.0|ttp|EclecticIQ Platform \|
ttp|verylow|ad.incomingFeedSourceId=e8815882-d610-47d4-991c-e0cde68445e8
deviceReceiptTime=1453662154657 cs1Label=title cs1=Targeting: TD Ameritrade cat=ttp cs3=name
cn2=0 start=1441379114127 cs4=td ameritrade cs3Label=extractType cs2=WHITE modelConfidence=0
cn1Label=halfLifeDays priority=2 severity=verylow cs4Label=extractValue externalId=
{http://www.hailataxii.com}ttp-6730e2ef-9e9a-4eeb-a6f4-d741f1a6cb4a relevancy=4
ad.incomingFeedName=guest.phishtank_com cn1=182 cs2Label=tlpColor cn2Label=sightingsCount
attackerUserName=td ameritrade
CEF:0|EclecticIQ|EclecticIQ Platform|0.15.0|ttp|EclecticIQ Platform \|
ttp|veryhigh|ad.incomingFeedSourceId=bd74b8c9-b0cc-4fa4-8de5-6bba538fad63
deviceReceiptTime=1455630435950 cs1Label=title cs1=testt2 cat=ttp cn2=1 start=1455630435950
cs4=cirque du soleil cs3Label=extractType cs3=name modelConfidence=9 cn1Label=halfLifeDays
priority=10 severity=veryhigh cs4Label=extractValue relevancy=8 msg=
<p>asdf</p> ad.incomingFeedName=Testing Group cn1=182 cs2Label=tlpColor cn2Label=sightingsCount
attackerUserName=cirque du soleil
```

HTTP status codes

This is how you can read HTTP status codes for HTTP download outgoing feeds retrieved through the API:

HTTP status code	Description
404	*Not found*. Error. The request did not execute. Check the error message or the console/terminal for more details.
200	*OK*. This status code is returned when a request is executed correctly, and an empty list is returned. It can mean that no HTTP download outgoing feeds are configured, or they may not be working correctly, or they have no content blocks to return yet.
200	*OK*. This status code is returned when a request is executed correctly, and a populated list with content blocks is returned. Make a happy dance and have a beer.

Error handling

When an error occurs, the API handles it by returning a **4xx (input/client error) or 5xx (server issue) HTTP response code** (`https://httpstatuses.com/`), and by including a short explanatory message in the JSON response body.

The key/value pairs in the `errors` JSON object provide more details about the possible cause of the error, which should help you solve it.

- `status`: the HTTP response code.
- `title`: the name of the error.
- `detail`: a short explanation of the issue with more context, when available.

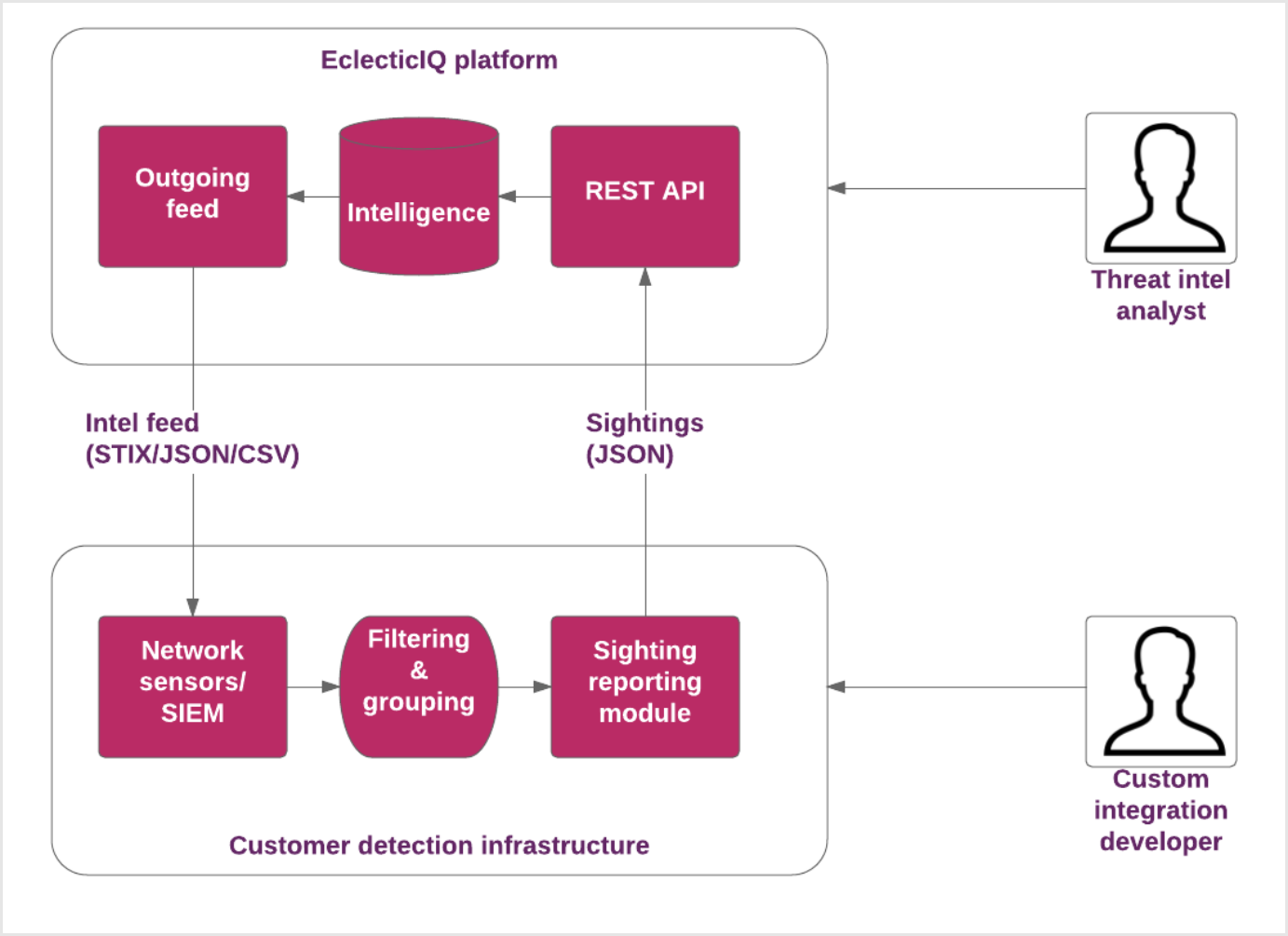
```
{
  "errors" : [

    {
      "detail" : "The requested URL was not found on the server. If you entered the URL manually
please check your spelling and try again.",
      "status" : 404,
      "title"  : "Not Found"
    }

  ]
}
```

How to report sightings through the API

Create and update sighting entities programmatically by making calls to the EclecticIQ API.

Architecture overview

- A matching engine identifies hits in the outgoing feed data stream.
- The matching engine pushes the hits to a message broker.
- A grouping engine listens to events triggered by the message broker. The engine uses entity IDs to group hits into sightings.
- Sightings are then passed on to the EclecticIQ Platform.



Before you start

It is a good idea to have one or more dedicated users and user groups, as necessary, to handle automation tasks that interact with external products or components of your system.
Automation groups bring together automation users, and they act as global controllers of the permissions the automation users require to operate.
Automation users handle automation and integration tasks such as authentication, data transmission through feeds and enrichers, or automatic entity creation as a follow-up action on a specific event.

Create an automation user group

> The automation group should include all the data sources — incoming feeds, enrichers, and groups — the automation users in the group need to access.

To add an automation user group, do the following:

- On the left-hand navigation sidebar click ⚙ **> User management**
- Under **User management > Groups**, click ✚ *(Create group)*
  The user group editor is displayed.

> Input fields marked with an asterisk are required.

- Under **Create group**, define the following configuration settings:
  - **Name**: a descriptive name for the automation user group.
    Example: *Integration automation group*
  - **Description**: a short description of the automation user group and its purpose.
    Example: *Automation group for integrations with external systems and services through incoming and/or outgoing feeds*
  - **Allowed sources**: click ✚ **Add** or ✚ **More** to add new rows as needed, where you can enter additional criteria.
    - **Sources**: from the drop-down menu select one or more data sources the automation user group and its members can access to fetch data from.
      Data sources can be existing incoming feeds, enrichers, as well as other user groups.

      Whereas role-based permissions define what *actions* users are allowed to perform, group-based **Allowed sources** define what platform *data*, *assets*, and *resources* users are allowed to access.
    - **TLP**: from the drop-down menu select a **Traffic Light Protocol** `(https://www.us-cert.gov/tlp)` color to filter data accordingly.
    - Click ✚ **Add** or ✚ **More** to add new rows as needed, where you can enter additional criteria.
  - **Source reliability**: from the drop-down menu select a value to filter data source reliability, so as to allow access only to data whose sources meet the specified reliability criteria.
  - Click **Save** to store your changes, or **Cancel** to discard them.

Create an automation user role

To add a new automation role, do the following:

- On the left-hand navigation sidebar click ⚙ **> User management**
- Under **User management > Roles**, click ✚ *(Create role)*
  The role editor is displayed.

> ✔ Input fields marked with an asterisk are required.

- Under **Create role**, define the following configuration settings:
  - **Name**: a descriptive name for the automation role.
    Example: *Systems integrator*
  - **Description**: a short description of the automation role and its purpose.
    Example: *Allows implementing data exchange interoperability between the platform and an external system.*
  - **Permissions**: from the drop-down menu select the actions the role is allowed to perform.

    Alternatively:
    - Start typing a permission name in the autocomplete text input field.
    - Select one or more filtered permissions from the list.
  - To revoke one or more permissions for the role, click the ✖ icon corresponding to the permission you want to remove, or the ✖ icon next to the drop-down arrow in the input field to remove all permissions at once.
  - Click **Save** to store your changes, or **Cancel** to discard them.

About permissions

- Permissions are associated with roles. Roles act as containers for sets of permissions defining the scope of the actions roles are authorized to perform.
- Permissions are predefined in the platform, and they are not editable or configurable. You can either grant them to roles, or revoke them.
- Permission names strive to be self-explanatory:
  Format: *${type of action} ${object of the action}*
  Example: *modify entities*
- Permissions allow two types of action:
  - **modify**: a modification permission that allows write operations.
  - **read**: a read permission that grants access to data without allowing any modifications.

To get an overview of the available permissions available on the platform, do the following:

- On the left-hand navigation sidebar click ⚙ **> User management**
- Under **User management > Permissions**, the permission overview is displayed as a table, where each permission is assigned a row.
  You can sort the items on the view by column header. To do so, click the column header you want to base the data sorting on. An upward-pointing ▲ or a downward-pointing ▼ arrow in the header indicates ascending and descending sort order, respectively.

Whereas role-based permissions define what *actions* users are allowed to perform, group-based **Allowed sources** define what platform *data*, *assets*, and *resources* users are allowed to access.

Create an automation user

To add an automation user, do the following:

- On the left-hand navigation sidebar click ⚙ **> User management**
- Under **User management > User**, click ✚ *(Create user)*
  The user editor is displayed.

> ✔ Input fields marked with an asterisk are required.

In the user editor define the following configuration settings:

- **First name**: enter a name that provides a short description of the automation user and its purpose.
- **Last name**: enter a name that provides a short description of the automation user and its purpose.
- **User name**: enter the designated user name to identify the user, when signed in to the platform.
  Choose a name that helps understand what the automation user does.
  Example: *platform-to-platform connector*; *platform-splunk connector*
- **Email**: an email address associated with the automation user. You can use this address to send and to receive automated notifications.
- **Active**: select this checkbox to enable the user immediately after saving the newly created user profile.
  Active users can sign in to the platform and carry out actions, based on their permissions.
- **Administrator**: select this checkbox to elevate the user's role to administrator.
  When the checkbox is selected, the user has full administrator rights and permissions.
- **Contact info**: n/a
- **PGP public key**: the user's **PGP public key** `(https://ssd.eff.org/en/module/introduction-public-key-cryptography-and-pgp)`, if available.
- **Locale**: from the drop-down menu select the appropriate **locale** `(https://en.wikipedia.org/wiki/locale_(computer_software))` settings for the user interface.
- **Use system timezone**: select this checkbox to override any locale-specific time zone setting with the system-defined time zone.
  When this setting is enabled, the platform retrieves the time from the host server, and it displays it in the format defined in the host server configuration.
- **Preferred timezone**: this option is available when **Use system timezone** is deselected. From the drop-down menu select the preferred time zone you want to use as a reference to display date and time in the platform for the current user profile.
- **Groups**: from the drop-down menu select one or more groups to assign the new user to.
  Alternatively, search for a group by starting typing a group name in the autocomplete text input field.
  Groups allow managing user access to platform data, assets, and resources.
- To remove the user from one or more groups, remove the relevant entries by clicking the ✖ corresponding to the group you want to remove the user from.

- **Roles**: it works like **Groups**, the only difference being that instead of adding the user to one or more groups, this option assigns one or more roles to the user.
  Roles allow managing what users are authorized to do in the platform.
- Click **Save** to store your changes, or **Cancel** to discard them.

Get the automation user group ID

Platform entities include a `meta.source` property key/value pair to identify the platform group as a data source.
If you want to programmatically create entities in the platform, you need to pass a group `meta.source` ID value when you make the corresponding calls to the platform API.
Likewise, if you want to identify the platform source group an entity comes from when the platform transmits data to an external product or system, you can retrieve the `meta.source` property key/value pair.

To retrieve the correct `meta.source` ID value related to an automation group, do the following:

- Get the automation group ID.
- Pass the automation group ID to get the `meta.source` ID.

Step 1 of 2: get the group ID

To retrieve the automation group ID value you need, so that you can retrieve the `meta.source` ID you pass in the calls to the platform API, do the following:

- On the left-hand navigation sidebar click ⚙ **> User management**.
- Under **User management**, click **Groups**.
- On the platform group overview page, click the row corresponding to the automation group associated with the data source(s) you want to use as input *and* to the automation user making the API calls.
- The action returns a URL with the following format:
  https://${platform_host}/user-management/groups?detail=${int}
  Example: *https://${platform_host}/user-management/groups?detail=30*

In the example, the `detail` value is `30`. This is the group ID.
You need to pass this value in a call to a specific platform API endpoint to retrieve the `meta.source` ID.

Step 2 of 2: get the group source ID

To retrieve the `meta.source` ID to make calls to the platform API to programmatically create entities, do the following:

- Make an authentication call to the platform API to validate your user credentials and to receive a Bearer token.
- Make a call to the `/private/groups/${group_ID}` endpoint:
  - Include the Bearer token in a `Bearer` header in the call.
  - Include the group ID you previously retrieved as a trailing element in the URL.
    Example: `https://${platform_host}/private/groups/30`
- In the JSON response, look for the group object with the `"id" : ${int}` key/value pair matching the group ID you previously retrieved.
  Example: `"id" : 30,`
- In the same group object, look for the `"source" : "${UUID_string}"` key/value pair.
  This is the group `meta.source` ID you need to pass in API calls to programmatically create entities.

Get the automation user group ID example

cURL API request — fetches all user groups

```
$ curl -X GET
       -v
       --insecure
       -i
       -H "Content-Type: application/json"
       -H "Accept: application/json"
       -H "Authorization: Bearer ${token}"
       https://${platform_host}/private/groups/30

# copy-paste version:
$ curl -X GET -v --insecure -i -H "Content-Type: application/json" -H "Accept: application/json"
-H "Authorization: Bearer ${token}" https://${platform_host}/private/groups/30
```

API response — returns user group list

```
{
  // Number of returned user groups
  "count": 18,

  "data": [

    ...

    {
      "allowed_sources": [

        // Lists all allowed data sources configured in the group editor
        ...

      ],

      // Group id, same value as the 'detail=' URL param for the group
      "id": 30,

      // Group 'meta.source' ID you need to pass in API calls
      "source": "42c051f8-9f5b-4696-a629-b86c2ead955f",

      // Group 'meta.source_name', the group name defined in the group editor
      "name": "DomainTools automation group",

      "type": "groups",
      "users": [

      // Lists all users that are part of the group
      ...

      ]
    },

    ...

  ]
}
```

Authentication

The authentication mechanism is based on **JSON web tokens** `(http://jwt.io/)`.

By default, the token expires 30 minutes after successfully signing in to a platform user session. When the token expires, the corresponding session is terminated, and you need to sign back in to the platform.

When human interaction is detected — for example, keystrokes or mouse activity — the token is automatically refreshed every 60 seconds. This prevents the system from signing out users who may be working or saving data at that time.

Therefore, the default maximum amount of idle time without any human interaction before being automatically signed out equals to *session token validity - 1 minute* .

To authenticate and access the platform, do the following:

- Make a `POST` call.
- In the call, pass your authentication credentials as a JSON object to the `/auth` endpoint. The credential data is used to generate a bearer token that is returned with the response.

Include the generated bearer token in the `Authorization` HTTP header with each subsequent API call.
The `Authorization` HTTP header has the following format: `Authorization: Bearer ${token}`

Auth request

API endpoint	`/auth`
Auth method	`POST`
HTTP headers	`"Content-Type: application/json"`, `"Accept: application/json"`
API request	`POST` + `"Content-Type: application/json"` + `"Accept: application/json"` + `{ "username": "${username}", "password": "${password}" }` + `${platform_host}/api/auth`
API response	`{ "expires_at": "${expiration_timestamp}", "token": "${token}" }`

The following example uses cURL to authenticate:

```
# Public API auth endpoint
$ curl -X POST
       --insecure
       -H "Content-Type: application/json"
       -d '{ "username" : "${username}", "password" : "${password}" }'
       https://${platform_host}/api/auth
```

```
# copy-paste version:
$ curl -X POST --insecure -H "Content-Type: application/json" -d '{ "username" : "${username}",
"password" : "${password}" }' https://${platform_host}/api/auth
```

```
# Private API auth endpoint
$ curl -X POST
       --insecure
       -H "Content-Type: application/json"
       -d '{ "username" : "${username}", "password" : "${password}" }'
       https://${platform_host}/private/auth
```

```
# copy-paste version:
$ curl -X POST --insecure -H "Content-Type: application/json" -d '{ "username" : "${username}",
"password" : "${password}" }' https://${platform_host}/private/auth
```

Auth response

When the user name and password credential are valid, the `POST` call returns a JSON web token:

```
{
  "expires_at": "2016-03-30T12:11:40.078219+00:00",
  "token"     :
"abHpYXQiOjE0NTkzMzI3MDAsIm4TcCI6MTQ1OTMzOTkwMCwiYWxnIjoiSFMyNTYifQ.oyY1c2VyX2lkIjo1fQ.LQQ3NdUHp4s-
QCXsxq3feI0Dy6tf5XQX9DOML1RNIzQ"
}
```

You need to include the bearer token value in each subsequent API call. You pass the token by including an `Authorization` HTTP header in the API request.
The `Authorization` HTTP header has the following format: `Authorization: Bearer ${token}`

In the following example, you make a `GET` request to the `/api/` or the the `/private/` endpoint to retrieve a list of the available API endpoints and the corresponding methods for the public or the private API, respectively:

```
# GET list of public API endpoints
$ curl -X GET
       -v
       --insecure
       -i
       -H "Content-Type: application/json"
       -H "Accept: application/json"
       -H "Authorization: Bearer ${token}"
       https://${platform_host}/api/
```

```
# copy-paste version:
$ curl -X GET -v --insecure -i -H "Content-Type: application/json" -H "Accept: application/json"
-H "Authorization: Bearer ${token}" https://${platform_host}/api/
```

```
# GET list of private API endpoints
$ curl -X GET
       -v
       --insecure
       -i
       -H "Content-Type: application/json"
       -H "Accept: application/json"
       -H "Authorization: Bearer ${token}"
       https://${platform_host}/private/
```

```
# copy-paste version:
$ curl -X GET -v --insecure -i -H "Content-Type: application/json" -H "Accept: application/json"
-H "Authorization: Bearer ${token}" https://${platform_host}/private/
```

Warning:
About cURL calls

- If you make HTTPs cURL calls to the API *and* you have a self-signed or an invalid certificate, include the `-k` or the `--insecure` parameter in the cURL call to skip the SSL connection CA certificate check.
- Always append a `/` trailing slash at the end of an API URL endpoint. The only exception is `/auth`, which does not take a trailing forward slash.
- In the cURL call, the `-d` data payload with the entity information always needs to be flat JSON, not hierarchical JSON.
  If you want to pass a hierarchical JSON object, include the `--data-binary` parameter, followed by the path to the JSON file, for example `@/path/to/entity_file.json`.

Create a sighting

API endpoint	`/entities/`
Create method	`POST`
HTTP headers	`"Content-Type: application/json"`, `"Accept: application/json"`, `"Authorization: Bearer ${token}"`
API request	`POST` + `"Content-Type: application/json"` + `"Accept: application/json"` + `"Authorization: Bearer ${token}"` + `{ "data" : { ${entity} } }` + `${platform_host}/api/entities/`
API response	`{ "data" : { ${entity} } }`

When you make a `GET` request and obtain a JSON object with entity data in the response, the entity object is wrapped in a data wrapper: `{ "data" : { ... } }`

When you pass a JSON object with entity data in the body of your API request, you always need to wrap it in a data wrapper: `{ "data" : { ... } }`

Creation request

To create a new sighting with an API call, do the following:

- Make a `POST` call to the `/entities/` API endpoint. The request should include the following HTTP headers:
  - `"Authorization: Bearer ${token}"` — *Required*
  - `"Content-Type: application/json"` — *Required*
  - `"Accept: application/json"` — *Optional*
- In the request message body, pass the JSON object containing the data defining the new sighting you want to create. Make sure the sighting data is wrapped inside the `{ "data" : }` wrapper.

Creation response

When the API request payload successfully passes validation:

- A new sighting is created with the specified data.
- The API returns a JSON object containing the newly created sighting data, including a new unique `id` for the sighting.
- The sighting data is wrapped inside the `{ "data" : }` wrapper. The wrapper needs to include at least the following required information:
  - `data`: a nested JSON object holding the information that describes the sighting, like name, short description, any extra details like kill chain phase or TLP color, and so on.
    - `type`: it is inside `data`. It identifies the entity type being created. For sightings, it is always `eclecticiq-sighting`.
    - `title`: it is inside `data`. The name you assign to the new sighting.
  - `meta`: a nested JSON object holding information about the data being posted through the API call, like source and tags, if any.
    - `source`: it is inside `meta`. Its value corresponds to the group ID referring to the source of the information used to create the sighting, for example an incoming feed or a user group who in turn can have a dataset or an incoming feed as its source. This value is automatically generated when a new source is created in the platform.

Creation examples

cURL API request — creates new sighting

```
$ curl -X POST
       -v
       --insecure
       -i
       -H "Content-Type: application/json"
       -H "Accept: application/json"
       -H "Authorization: Bearer ${token}"
       -d '{ "data": { ${entity} } }'
       https://${platform_host}/api/entities/
```

```
# copy-paste version:
$ curl -X POST -v --insecure -i -H "Content-Type: application/json" -H "Accept: application/json"
-H "Authorization: Bearer ${token}" -d '{ "data": { ${entity} } }'
https://${platform_host}/api/entities/
```

HTTP request message body

It contains the data for the new sighting entity you want to create.

```
{
  "data": {

    "data": {
      "type": "eclecticiq-sighting",
      "title": "test-eclecticiq-sighting"
    },

    "meta": {
      "source": "091bde3a-4a07-4e0f-b834-4038d2041932"
    }

  }
}
```

API response — successful sighting creation

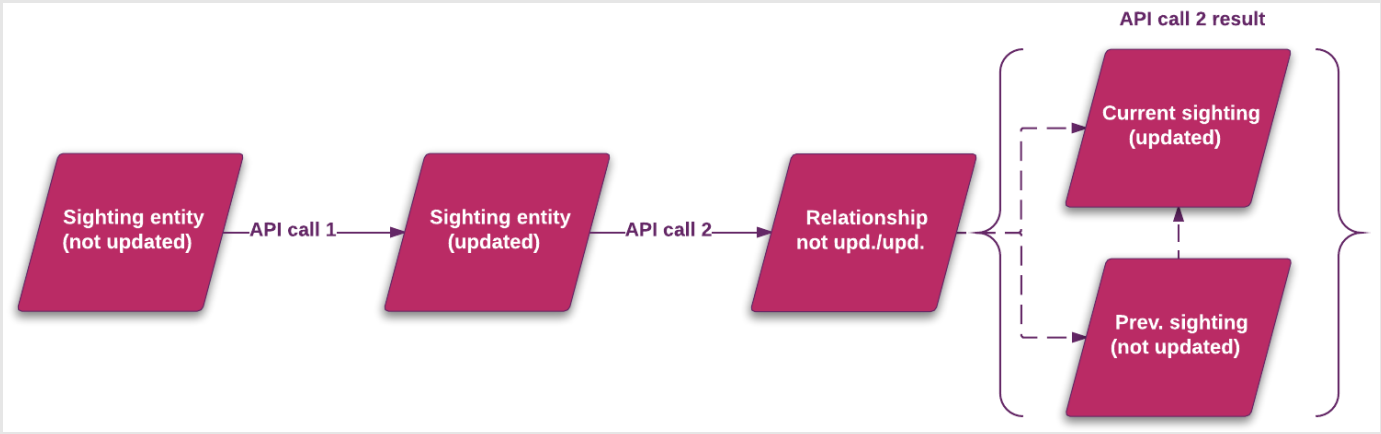
```
HTTP 201 OK CREATED
```

The response body contains the data for the newly created sighting.
Among the fields included in the sighting, you can notice a group ID and an entity ID:

- `group_id`: the entity group the new sighting is assigned to.
- `id`: a unique identifier for the sighting entity.

```
{
  "data": {

    "data": {
      "title": "test-eclecticiq-sighting",
      "type": "eclecticiq-sighting"
    },

    "group_id": "b4585e35-c8a9-478e-a31d-ef7e2ec72aaf",
    "id": "d80da575-4788-4ef5-b0a5-cc0e9b506298",

    "meta": {
      "estimated_observed_time": "2016-03-30T14:22:02.929028+00:00",
      "estimated_threat_start_time": "2016-03-30T14:22:02.929028+00:00",
      "ingest_time": "2016-03-30T14:22:02.929028+00:00",
      "is_outdated_version": false,
      "source": "091bde3a-4a07-4e0f-b834-4038d2041932",
      "source_name": "test",
      "source_type": "group",
      "title": "test-eclecticiq-sighting"
    },

    "source": "091bde3a-4a07-4e0f-b834-4038d2041932",
    "type": "entities"
  }
}
```


Update a sighting



- *API call 1* creates a new version of the sighting containing the updated information.
- *API call 2* relates the previous, not updated version of the sighting, with the new, updated one.

To keep data in sync with the outside world and to avoid inconsistencies, updating an entity is more similar to versioning than to a simple edit-to-update process.

A JSON entity includes two main nested objects:

- `{ "data" : { } }`
  `data` contains the non-modifiable information describing the sighting entity. This data cannot be edited, because it needs to be in sync with the same entity data in the outside world.

- `{ "meta' : { } }`
  `meta` contains the editable entity metadata. You can modify this data at any time.

When you pass a JSON object with entity data in the body of your API request, you always need to wrap it in a data wrapper: `{ "data" : { ... } }`

API endpoint	`/entities/`
Update method	`POST`
HTTP headers	`"Content-Type: application/json", "Accept: application/json", "Authorization: Bearer ${token}"`
API call 1	`POST` + `"Content-Type: application/json"` + `"Accept: application/json"` + `"Authorization: Bearer ${token}"` + `{ "data" : { ${new_entity} } }` + `${platform_host}/api/entities/`
API response 1	`{ "data" : { ${new_entity} } }`
API call 2	`POST` + `"Content-Type: application/json"` + `"Accept: application/json"` + `"Authorization: Bearer ${token}"` + `{ "data": { "data": { "source": "${new_entity_id}", "source_type": "${entity_type}", "target": "${superseded_entity_id}", "target_type": "${entity_type_same_as_source}", "type": "relation", "subtype": "stix_update_of" } } }` + `${platform_host}/api/entities/`
API response 2	`{ "data": { "data": { "source": "${new_entity_id}", "source_type": "${entity_type}", "target": "${superseded_entity_id}", "target_type": "${entity_type_same_as_source}", "type": "relation", "subtype": "stix_update_of" } } }`

Update request

To update an existing entity, you need to make two consecutive API calls to perform the following actions:

- Create a new version of the entity containing any changed information you want to store in the updated entity.
- Create a relationship between the new version of the entity you just created and the previous, superseded version of the same entity.

The keys holding entity version information for the update are inside the nested `data` JSON object:

- `source`: holds the `id` value of the new, *updated* entity.
- `target`: holds the `id` value of the *previous*, superseded entity.
- `type`: when updating entities, its value is always `relation`.
- `subtype`: when updating entities, its value is always `stix_update_of`.

At the end of the process, the updated `source` entity has a `stix_update_of` `relation` with the previous/superseded `target` entity.

Update response

A successful update operation returns two responses:

- The first call returns a JSON object containing the newly created entity with the updated information.
- The second call returns a JSON object that defines a `stix_update_of` relationship between the updated entity (`source`) and the superseded one (`target`).

Update examples

cURL API request — updates existing sighting — update 1/2

The first call you make to update an existing entity creates a new entity of the same type, which is an updated version with changed details of the existing entity.

```
$ curl -X POST
       -v
       --insecure
       -i
       -H "Content-Type: application/json"
       -H "Accept: application/json"
       -H "Authorization: Bearer ${token}"
       -d '{ "data": { ${entity} } }'
       https://${platform_host}/api/entities/
```

```
# copy-paste version:
$ curl -X POST -v --insecure -i -H "Content-Type: application/json" -H "Accept: application/json"
-H "Authorization: Bearer ${token}" -d '{ "data": { ${entity} } }'
https://${platform_host}/api/entities/
```

HTTP request message body

The message body of the first call contains the new version of the sighting entity with updated/changed data.

```
{
  "data": {

    "data": {
      "type": "eclecticiq-sighting",
      "title": "test-eclecticiq-sighting",

      "confidence": {
        "type": "confidence",
        "value": "Medium"
      },

      "description": "<p>This is a very scary sighting for test purposes, which I am updating to
add even more evil to it.</p>",
      "description_structuring_format": "html",

      "handling": [{
        "type": "marking-specification",

        "marking_structures": [{
          "type": "marking-structure",
          "marking_structure_type": "tlp",
          "color": "AMBER"
        }]
      }]
    },

    "meta": {
      "source": "091bde3a-4a07-4e0f-b834-4038d2041932"
    }
  }
}
```

API response — successful sighting creation — update 1/2

```
HTTP 201 OK CREATED
```

The response body contains the new, updated sighting data.

```
{
  "data": {

    "data": {

      "confidence": {
        "type": "confidence",
        "value": "Medium"
      },

      "description": "<p>this is a very scary sighting for test purposes, which I am updating to
add more evil</p>",
      "description_structuring_format": "html",

      "handling": [{

        "marking_structures": [{
          "color": "AMBER",
          "marking_structure_type": "tlp",
          "type": "marking-structure"
        }],

        "type": "marking-specification"
      }],

      "title": "test-eclecticiq-sighting",
      "type": "eclecticiq-sighting"
    },

    "group_id": "72525f33-cfab-44fb-a46a-b1bd37675b0b",
    "id": "c38b51d0-ce71-49f6-918e-13b6b299f4ee",

    "meta": {
      "estimated_observed_time": "2016-03-30T16:12:43.499083+00:00",
      "estimated_threat_start_time": "2016-03-30T16:12:43.499083+00:00",
      "ingest_time": "2016-03-30T16:12:43.499083+00:00",
      "is_outdated_version": false,
      "source": "091bde3a-4a07-4e0f-b834-4038d2041932",
      "source_name": "test",
      "source_type": "group",
      "title": "test-eclecticiq-sighting"
    },

    "source": "091bde3a-4a07-4e0f-b834-4038d2041932",
    "type": "entities"
  }
}
```


cURL API request — updates existing sighting — update 2/2

The second call creates a relationshiop between the updated sighting entity (`source`) and the superseded one (`target`).

```
$ curl -X POST
       -v
       --insecure
       -i
       -H "Content-Type: application/json"
       -H "Accept: application/json"
       -H "Authorization: Bearer ${token}"
       -d '{ "data": { "data": { "source": "<updated_entity_id>", "source_type": "eclecticiq-
sighting", "target": "${superseded_entity_id}", "target_type": "eclecticiq-sighting", "type":
"relation", "subtype": "stix_update_of" } } }'
       https://${platform_host}/api/entities/
```

```
# copy-paste version:
$ curl -X POST -v --insecure -i -H "Content-Type: application/json" -H "Accept: application/json"
-H "Authorization: Bearer ${token}" -d '{ "data": { "data": { "source": "<updated_entity_id>",
"source_type": "eclecticiq-sighting", "target": "${superseded_entity_id}", "target_type":
"eclecticiq-sighting", "type": "relation", "subtype": "stix_update_of" } } }'
https://${platform_host}/api/entities/
```

HTTP request message body

The request message body of the relationship creation call to link the updated and the superseded entities is a `data` JSON object with the following format:

```
{
  "data" : {
    "source"      : "<updated_entity_id>",
    "source_type" : "eclecticiq-sighting",
    "target"      : "${superseded_entity_id}",
    "target_type" : "eclecticiq-sighting",
    "type"        : "relation",
    "subtype"     : "stix_update_of"
  }
}
```

In your API request, make sure you wrap the `data` object in the `{ "data" : { ... } }` wrapper.

```
{
  "data": {

    "data": {
      "source": "c38b51d0-ce71-49f6-918e-13b6b299f4ee",
      "source_type": "eclecticiq-sighting",
      "target": "d80da575-4788-4ef5-b0a5-cc0e9b506298",
      "target_type": "eclecticiq-sighting",
      "type": "relation",
      "subtype": "stix_update_of"
    }

  }
}
```

API response — successful sighting update — update 2/2

```
HTTP 201 OK CREATED
```

The response to the relationship creation call to link the superseded and the updated entities is a `data` JSON object describing the established relationship between the older (`target`) and the newer (`source`) versions of the same entity.


```
{
  "data": {

    "data": {
      "source": "c38b51d0-ce71-49f6-918e-13b6b299f4ee",
      "source_type": "eclecticiq-sighting",
      "target": "d80da575-4788-4ef5-b0a5-cc0e9b506298",
      "target_type": "eclecticiq-sighting",
      "type": "relation",
      "subtype": "stix_update_of"
    },

    "group_id": "6768f516-627d-4d9e-916c-1db63622321a",
    "id": "f7c04e61-6086-45a0-bebb-8cd31581a476",

    "meta": {},

    "source": null,
    "type": "entities"
  }
}
```

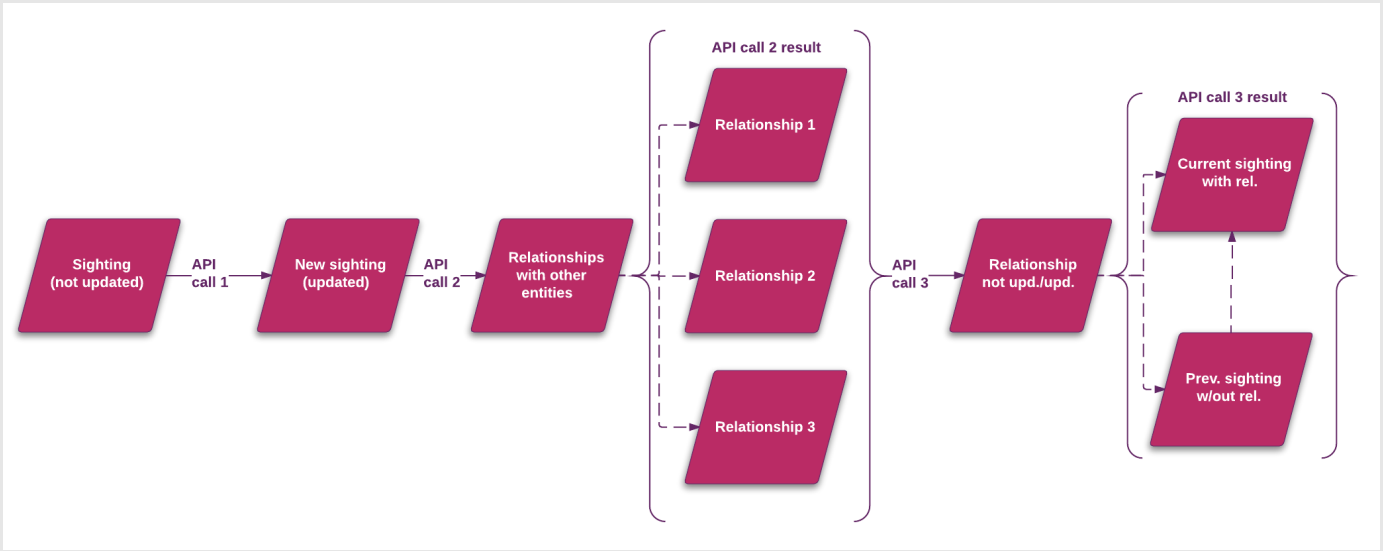

To avoid unnecessary duplication, if you pass the same update data for an entity more than once, the redundant update that would cause data duplication is ignored.

In this case, the HTTP response code notifies that no new data was created:

```
HTTP 200 OK
```

In the `data` JSON object containing the relationship details, the `subtype` JSON key holds the `stix_duplicate_of` value to notify that the update was ignored because it was a duplicate.

Create relationships



- *API call 1* creates a new version of the sighting.
- *API call 2* adds relationships to the new version of the sighting.
- *API call 3* updates the previous version of the sighting without a relationship to the new one with a relationship.

API endpoint	`/entities/`
Update method	`POST`
HTTP headers	`"Content-Type: application/json", "Accept: application/json", "Authorization: Bearer ${token}"`
API call 1	`POST + "Content-Type: application/json" + "Accept: application/json" + "Authorization: Bearer ${token}" + { "data" : { ${new_entity} } } + ${platform_host}/api/entities/`
API response 1	`{ "data" : { ${new_entity} } }`
API call 2	`POST + "Content-Type: application/json" + "Accept: application/json" + "Authorization: Bearer ${token}" + { "data": { "data": { "source": "${new_entity_id}", "source_type": "${entity_type}", "target": "${entity_id_to_relate}", "target_type": "${entity_type_to_relate}", "type": "relation" } } } + ${platform_host}/api/entities/`
API response 2	`{ "data": { "data": { "source": "${new_entity_id}", "source_type": "${entity_type}", "target": "${entity_id_to_relate}", "target_type": "${entity_type_to_relate}", "type": "relation" } } }`
API call 3	`POST + "Content-Type: application/json" + "Accept: application/json" + "Authorization: Bearer ${token}" + { "data": { "data": { "source": "${new_entity_id}", "source_type": "${entity_type}", "target": "${superseded_entity_id}", "target_type": "${entity_type_same_as_source}", "type": "relation", "subtype": "stix_update_of" } } } + ${platform_host}/api/entities/`
API response 3	`{ "data": { "data": { "source": "${new_entity_id}", "source_type": "${entity_type}", "target": "${superseded_entity_id}", "target_type": "${entity_type_same_as_source}", "type": "relation", "subtype": "stix_update_of" } } }`

Relationship request

To create a relationship between two entities, for example between a sighting and an incident, you need to make three consecutive API calls to perform the following actions:

- Create a new version of the sighting. Adding a relationship updates the sighting, and therefore it is necessary to create a new version of this entity to reflect the change.
- Create a relationship between the new version of the sighting and the incident.
- Create a relationship between the new version of the sighting, i.e. the one that is now related to the incident, and the previous one, i.e. the one that is not related to the incident. This updates the sighting to the new version.

The keys holding entity version information for the process are inside the nested `data` JSON object:

- `source`: holds the `id` value of the *new* sighting you want to add a relationship to.
- `target`: holds the `id` value of the target entity of the relationship. In other words, this is the entity you want to relate the sighting to. In this example, it is an incident.
- `type`: when creating relationships, its value is always `relation`.

Relationship response

A successful relationship creation returns three responses:

- *API call 1* returns a JSON object with the new version of the sighting.
- *API call 2* returns a JSON object containing the data about the relationship between the sighting and the incident. This object represents the relationship between the entities.
- *API call 3* relates the previous version of the sighting without a relationship to the new one with a relationship. This call updates the sighting to include the relationship information.

Relationship examples

cURL API request — creates new version of sighting — relationship 1/3

The first API call creates a new version of the sighting.

```
$ curl -X POST
       -v
       --insecure
       -i
       -H "Content-Type: application/json"
       -H "Accept: application/json"
       -H "Authorization: Bearer ${token}"
       -d '{ "data": { ${new_entity} } }'
       https://${platform_host}/api/entities/
```

```
# copy-paste version:
$ curl -X POST -v --insecure -i -H "Content-Type: application/json" -H "Accept: application/json"
-H "Authorization: Bearer ${token}" -d '{ "data": { ${new_entity} } }'
https://${platform_host}/api/entities/
```

HTTP request message body

It contains the data of the sighting you want to relate to another entity (for example, to an incident).

```
{
  "data": {

    "meta": {
      "source_name": "test",
      "source_type": "group",
      "source": "091bde3a-4a07-4e0f-b834-4038d2041932",
      "title": "test-eclecticiq-sighting"
    },

    "data": {
      "type": "eclecticiq-sighting",
      "title": "test-eclecticiq-sighting"
    }

  }
}
```

API response — successful sighting creation — relationship 1/3

```
HTTP 201 OK CREATED
```

It returns a new version of the sighting, with a new `id`. You are using this `id` to relate the sighting to another entity.

```
{
  "data": {

    "data": {
      "title": "test-eclecticiq-sighting",
      "type": "eclecticiq-sighting"
    },

    "group_id": "7ae5bfcb-5a20-4fc9-9b2d-ad655a3d5408",
    "id": "85939e81-99b3-4476-b9b5-5b8e17cea2b5",

    "meta": {
      "estimated_observed_time": "2016-03-31T12:14:04.398700+00:00",
      "estimated_threat_start_time": "2016-03-31T12:14:04.398700+00:00",
      "ingest_time": "2016-03-31T12:14:04.398700+00:00",
      "is_outdated_version": false,
      "source": "091bde3a-4a07-4e0f-b834-4038d2041932",
      "source_name": "test",
      "source_type": "group",
      "title": "test-eclecticiq-sighting"
    },

    "source": "091bde3a-4a07-4e0f-b834-4038d2041932",
    "type": "entities"
  }
}
```

cURL API request — creates relationship — relationship 2/3

The second call establishes a relationship between the new version of the sighting you just created with the previous call, and another, different entity; for example, an incident.

```
$ curl -X POST
       -v
       --insecure
       -i
       -H "Content-Type: application/json"
       -H "Accept: application/json"
       -H "Authorization: Bearer ${token}"
       -d '{ "data": { "data": { "source": "<updated_sighting_id>", "source_type": "eclecticiq-
sighting", "target": "<incident_id>", "target_type": "incident", "type": "relation" } } }'
       https://${platform_host}/api/entities/
```

```
# copy-paste version:
$ curl -X POST -v --insecure -i -H "Content-Type: application/json" -H "Accept: application/json"
-H "Authorization: Bearer ${token}" -d '{ "data": { "data": { "source": "<updated_sighting_id>",
"source_type": "eclecticiq-sighting", "target": "<incident_id>", "target_type": "incident",
"type": "relation" } } }' https://${platform_host}/api/entities/
```

HTTP request message body

The request message body of the relationship creation call is a `data` JSON object with the following format:

```
{
  "data" : {
    "source"      : "<id_of_the_entity_you_want_to_create_a_relationship_for>",
    "source_type" : "eclecticiq-sighting",
    "target"      : "<id_of_the_entity_you_want_to_relate_to_the_source>",
    "target_type" : "incident",
    "type"        : "relation"
  }
}
```

In your API request, make sure you wrap the `data` object in the `{ "data" : { ... } }` wrapper.

```
{
  "data" : {

    "data": {
      "source": "85939e81-99b3-4476-b9b5-5b8e17cea2b5",
      "source_type": "eclecticiq-sighting",
      "target": "dcb550e7-4178-4d1f-ad59-072e6d7aa1c7",
      "target_type": "incident",
      "type": "relation"
    }

  }
}
```

API response — successful relationship creation — relationship 2/3

```
HTTP 201 OK CREATED
```

A successful response returns a JSON object containing the details of the newly established relationship between the two different entities.

```
{
  "data": {

    "data": {
      "source": "85939e81-99b3-4476-b9b5-5b8e17cea2b5",
      "source_type": "eclecticiq-sighting",
      "target": "dcb550e7-4178-4d1f-ad59-072e6d7aa1c7",
      "target_type": "incident",
      "type": "relation"
    },

    "group_id": "decde301-d4c4-4387-a8fd-7f423cb6ca2c",
    "id": "2522daa2-638d-4e11-bac0-b4c18bf2f394",

    "meta": {
      "is_outdated_version": false
    },

    "source": null,
    "type": "entities"
  }
}
```

cURL API request — updates sighting — relationship 3/3

The third call updates the sighting, in this example the source entity, by creating a `stix_update_of` relationship between the previous version — the one without a relationship to the incident — and the new one — the one that bears a relationship to the incident.

```
$ curl -X POST
       -v
       --insecure
       -i
       -H "Content-Type: application/json"
       -H "Accept: application/json"
       -H "Authorization: Bearer ${token}"
       -d '{ "data": { "data": { "source": "<updated_entity_id_with_relationship>", "source_type":
"eclecticiq-sighting", "target": "<superdseded_entity_id_no_relationship>", "target_type":
"eclecticiq-sighting", "type": "relation", "subtype": "stix_update_of" } } }'
     https://${platform_host}/api/entities/
```

```
# copy-paste version:
$ curl -X POST -v --insecure -i -H "Content-Type: application/json" -H "Accept: application/json"
-H "Authorization: Bearer ${token}" -d '{ "data": { "data": { "source": "
<updated_entity_id_with_relationship>", "source_type": "eclecticiq-sighting", "target": "
<superdseded_entity_id_no_relationship>", "target_type": "eclecticiq-sighting", "type":
"relation", "subtype": "stix_update_of" } } }' https://${platform_host}/api/entities/
```

HTTP request message body

The request message body of the update call is a `data` JSON object with the following format:

```
{
  "data" : {
    // new version of the sighting related to incident
    "source"      : "<updated_entity_id>",
    "source_type" : "eclecticiq-sighting",
    // previous version of the sighting not related to incident
    "target"      : "${superseded_entity_id}",
    "target_type" : "eclecticiq-sighting",
    "type"        : "relation",
    "subtype"     : "stix_update_of"
  }
}
```

In your API request, make sure you wrap the `data` object in the `{ "data" : { ... } }`wrapper.

```
{
  "data": {

    "data": {
      "source": "85939e81-99b3-4476-b9b5-5b8e17cea2b5",
      "source_type": "eclecticiq-sighting",
      "target": "c38b51d0-ce71-49f6-918e-13b6b299f4ee",
      "target_type": "eclecticiq-sighting",
      "type": "relation",
      "subtype": "stix_update_of"
    }

  }
}
```

API response — successful sighting update — relationship 3/3

```
HTTP 201 OK CREATED
```

A successful response returns a JSON object containing the details of the version relationship between the two versions of the same entity.

```
{
  "data": {

    "data": {
      "source": "85939e81-99b3-4476-b9b5-5b8e17cea2b5",
      "source_type": "eclecticiq-sighting",
      "subtype": "stix_update_of",
      "target": "c38b51d0-ce71-49f6-918e-13b6b299f4ee",
      "target_type": "eclecticiq-sighting",
      "type": "relation"
    },

    "group_id": "e73c48be-75ea-40ff-b478-890a9b8b1329",
    "id": "6e4ffcad-f62a-4d21-a20a-bc85a42be274",

    "meta": {},

    "source": null,
    "type": "entities"
  }
}
```


Error handling

When an error occurs, the API handles it by returning a **4xx (input/client error) or 5xx (server issue) HTTP response code** (https://httpstatuses.com/), and by including a short explanatory message in the JSON response body.

The key/value pairs in the `errors` JSON object provide more details about the possible cause of the error, which should help you solve it.

- `status`: the HTTP response code.
- `title`: the name of the error.
- `detail`: a short explanation of the issue with more context, when available.


```
{
  "errors" : [

    {
      "detail" : "The requested URL was not found on the server. If you entered the URL manually
please check your spelling and try again.",
      "status" : 404,
      "title"  : "Not Found"
    }

  ]
}
```