API Network Diagram

MITRE

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MITRE Segment Agenda

- Discuss Existing CWE Infrastructure
- Outline broad options for the API backing
- Requests for comments on alpha testing design choices
- Our desire for specification of required capabilities

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Current CWE/CAPEC Pipeline

- **Users/team submit entries/changes, leading to edits of individual CWE/CAPECs**
- **Commit individual CWE/CAPEC XML files to MITRE internal Gitlab**
- **Collate and process individual CWE/CAPEC's into the main XML file**
  - https://cwe.mitre.org/data/downloads.html for compressed collations
- **Generate HTML pages from CWE/CAPEC XML data through XSL transforms**
- **Reflect statically generated HTML to public web server**

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CWE/CAPEC Schema

- **This schema version number refers to the XML schema (not the CWE/CAPEC version)**
- **Changes in field names, possible options for enumerations, etc.**
- **Should we match version numbers in API?**

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Current List of Requests
(Accelera: Brent Sherman, Kathy Herring Hayashi)

	API/Get Request	Example
1	List of all matching categories and view (HW)	Members of the category – debugging, security flow issues (e.g. 1196)
2	List of all matching specific field(s)	
3	Record of parent CWE	CHILD-ID = 1195 and return PARENT_ID(s)
4	Meta data of all possible values for CWE field	For collection building, sorting (e.g. 8 possible technologies)
5	Return entry Version and Timestamp	Request current version
6	List of entries modified between version releases	startver=1; endver=2
7	Delta between Entry Dates	Startdate=01/22/22; enddate=today

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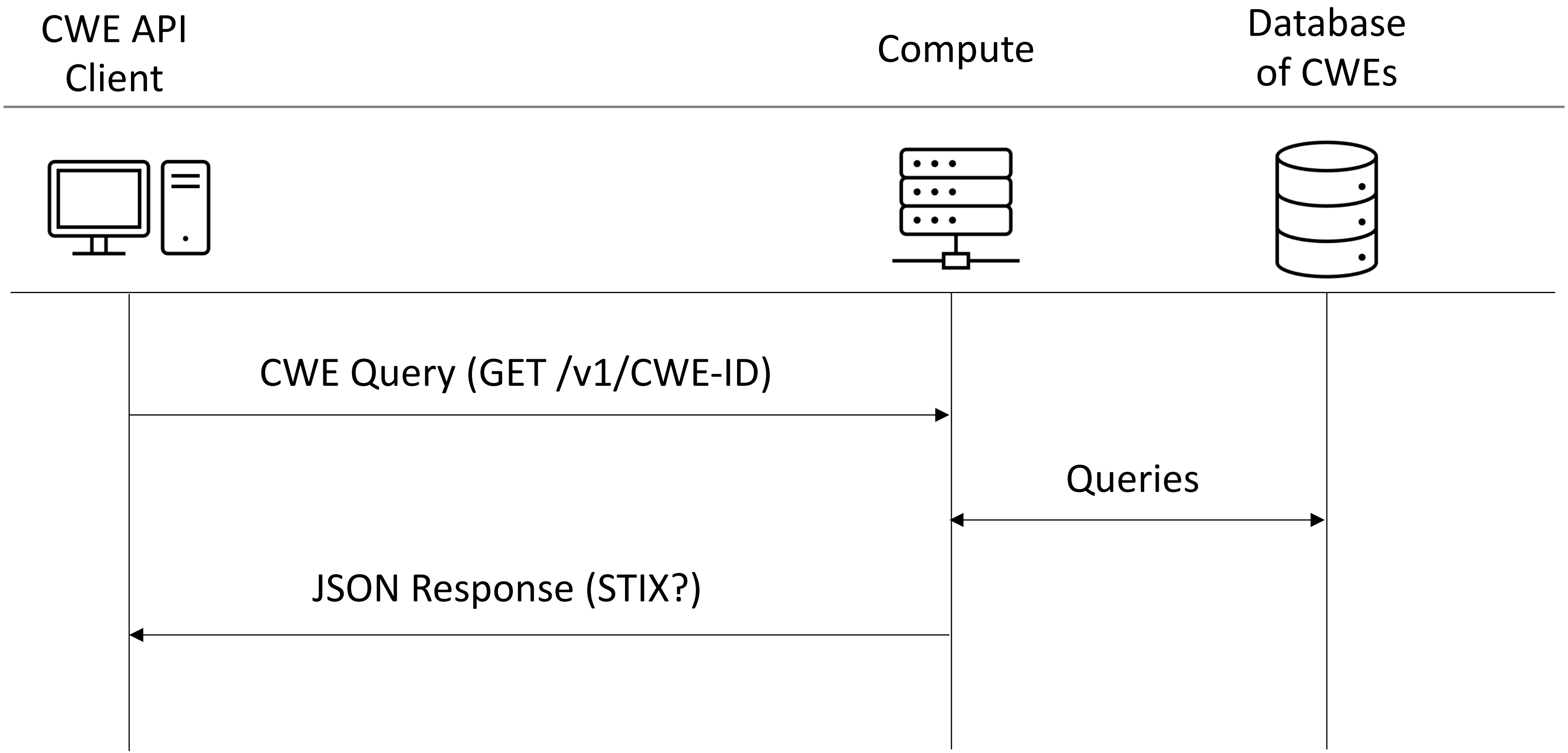

CWE API Client

Compute

Database of CWEs

CWE Query (GET /v1/CWE-ID)

Queries

JSON Response (STIX?)

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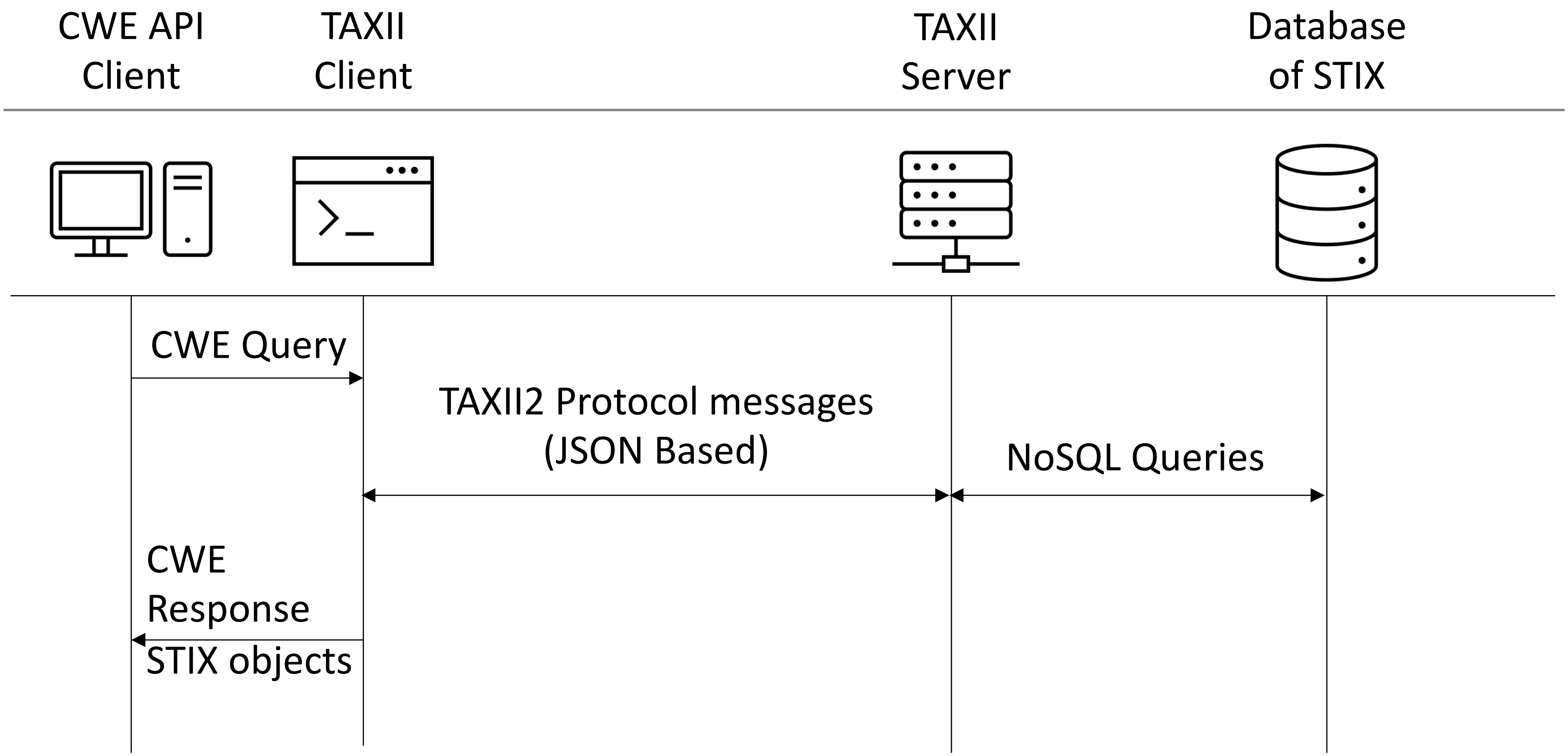

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Client side library for querying

- **To what extent are people willing to process CWE/CAPEC through an open-source library we develop?**
  - Distribute library which leverages the API or can operate on CWE/CAPEC XML
  - negatives being which language to use and maintenance

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Potential Simplification for v1

- **Deploy baseline API**
  - GET /cwe/id -> json of cwe-id
  - GET /view/id -> json of [cwe-id, cwe-id, cwe-id] if all in view
  - GET /all -> all CWEs with reduced set of fields
- **Implications:**
  - no search functionality to start with
  - standard API design considerations and performance not accounted for
  - Can be deployed now in an “as-is” state through the current CWE website
    - This server doesn’t have a ton of resources so it would be untenable in the long run

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TAXII Starting Point (TAXII API Endpoints)

URL	Methods	Resource Type
/taxii2/	GET	discovery
{api-root}/	GET	api
{api-root}/status/**{status-id}**/	GET	status
{api-root}/collections/	GET	collections
{api-root}/collections/**{id}**/	GET	collection
{api-root}/collections/**{id}**/manifest/	GET	manifest
{api-root}/collections/**{id}**/objects/	GET, POST	envelope
{api-root}/collections/**{id}**/objects/**{object-id}**/	GET, DELETE	envelope
{api-root}/collections/**{id}**/objects/**{object-id}**/versions/	GET	versions

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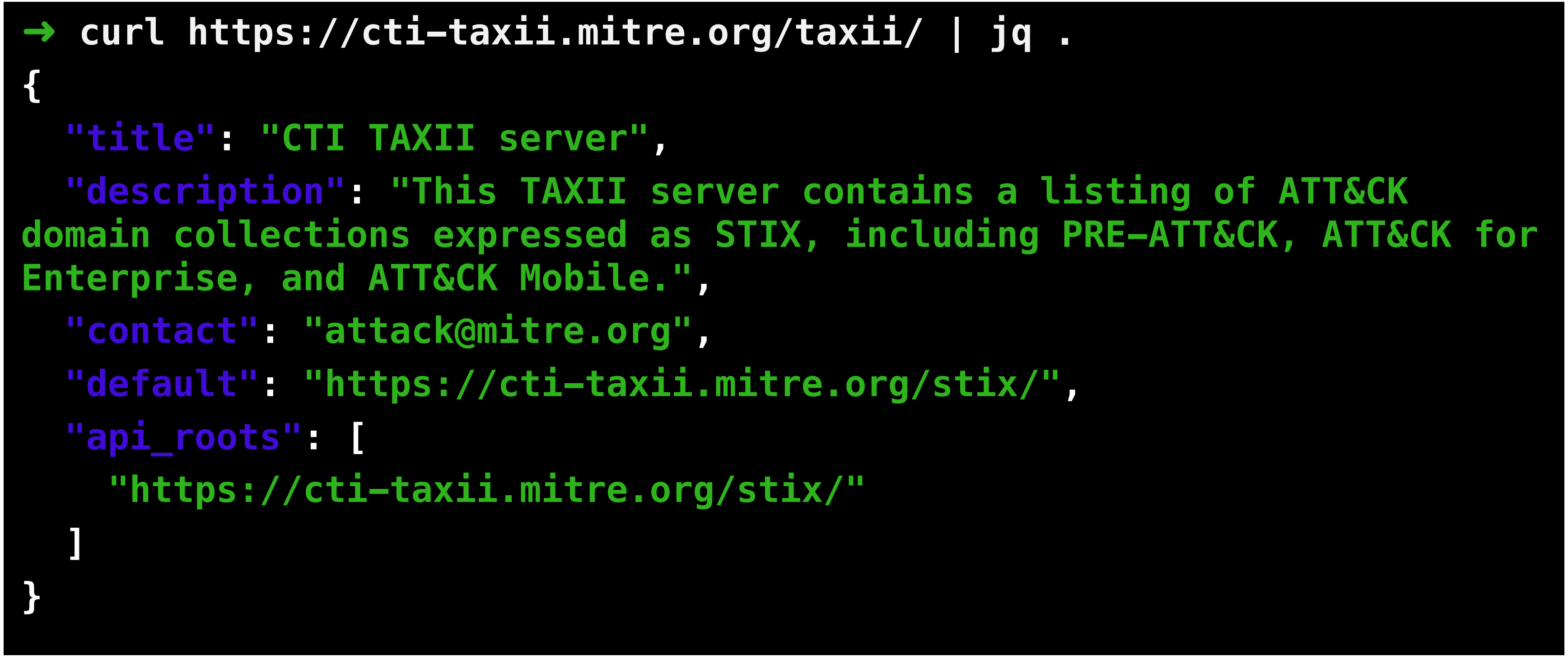
Discovery



```
→ curl https://cti-taxii.mitre.org/taxii/ | jq .
{
  "title": "CTI TAXII server",
  "description": "This TAXII server contains a listing of ATT&CK
domain collections expressed as STIX, including PRE-ATT&CK, ATT&CK for
Enterprise, and ATT&CK Mobile.",
  "contact": "attack@mitre.org",
  "default": "https://cti-taxii.mitre.org/stix/",
  "api_roots": [
    "https://cti-taxii.mitre.org/stix/"
  ]
}
```

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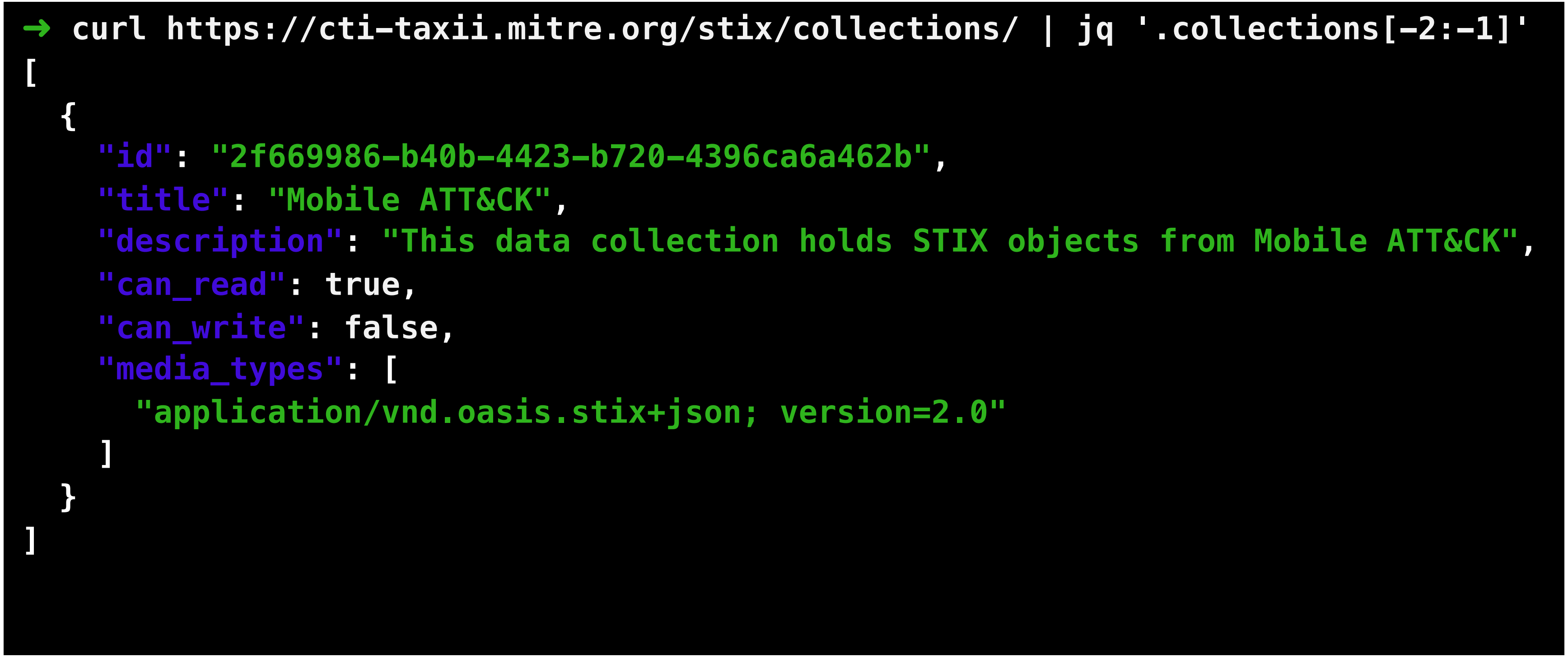
Collections



```
➜ curl https://cti-taxii.mitre.org/stix/collections/ | jq '.collections[-2:-1]'
[
  {
    "id": "2f669986-b40b-4423-b720-4396ca6a462b",
    "title": "Mobile ATT&CK",
    "description": "This data collection holds STIX objects from Mobile ATT&CK",
    "can_read": true,
    "can_write": false,
    "media_types": [
      "application/vnd.oasis.stix+json; version=2.0"
    ]
  }
]
```

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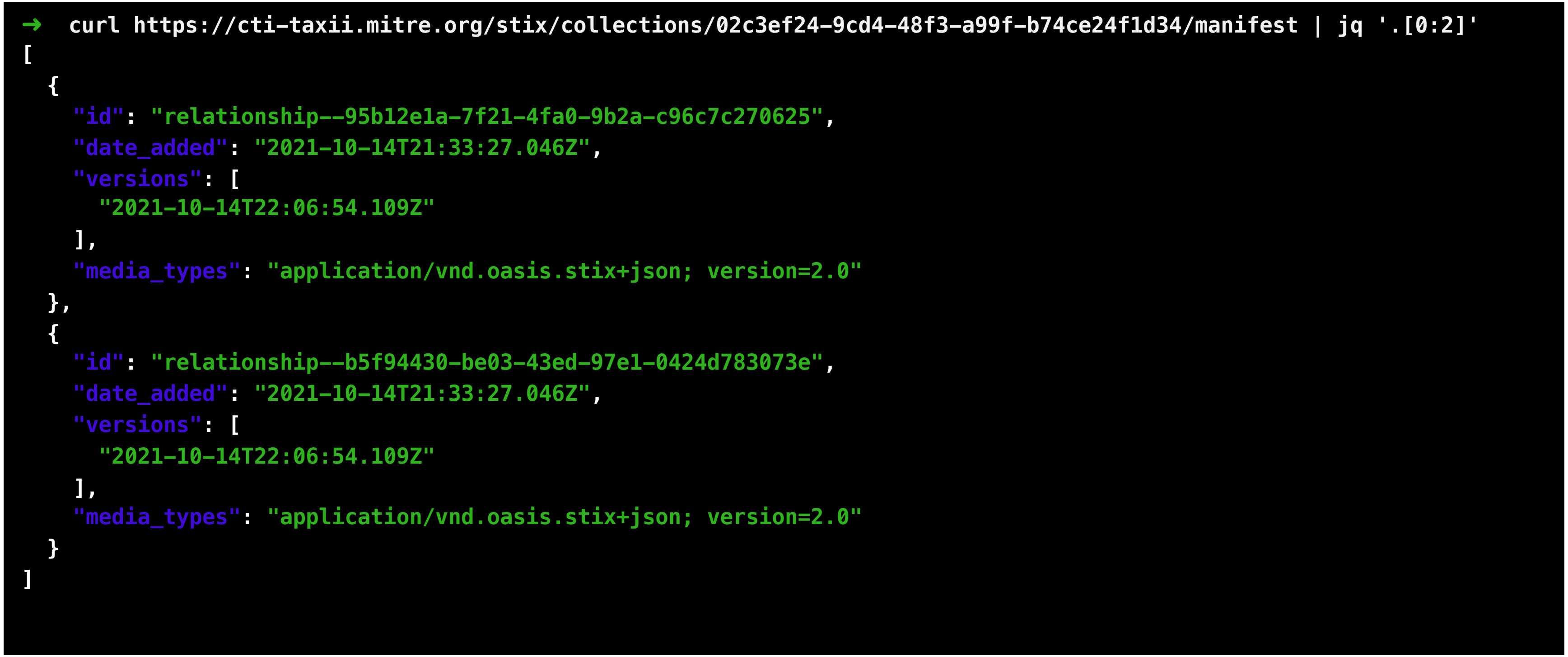
Manifest for a Collection



```
➜  curl https://cti-taxii.mitre.org/stix/collections/02c3ef24-9cd4-48f3-a99f-b74ce24f1d34/manifest | jq '.[0:2]'
[
  {
    "id": "relationship--95b12e1a-7f21-4fa0-9b2a-c96c7c270625",
    "date_added": "2021-10-14T21:33:27.046Z",
    "versions": [
      "2021-10-14T22:06:54.109Z"
    ],
    "media_types": "application/vnd.oasis.stix+json; version=2.0"
  },
  {
    "id": "relationship--b5f94430-be03-43ed-97e1-0424d783073e",
    "date_added": "2021-10-14T21:33:27.046Z",
    "versions": [
      "2021-10-14T22:06:54.109Z"
    ],
    "media_types": "application/vnd.oasis.stix+json; version=2.0"
  }
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