NOZOMI NETWORKS

Threat Intelligence Feed
Configuration Guide

TAXII v2.0 — 2024-09-09

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Chapter 1. Introduction

TAXII overview

TAXII standardizes the exchange of cyber threat intelligence (CTI) over the internet, enabling organizations to share security threat information more efficiently and effectively. This improves threat detection, analysis, and response.

Trusted Automated Exchange of Indicator Information (TAXII) is a protocol used for the exchange of *cyber threat intelligence (CTI)* over the internet. *TAXII* is designed to support the distribution of *CTI* using a standardized methodology, enabling organizations to share information about security threats more efficiently and effectively.

TAXII is often used in conjunction with *Structured Threat Information Expression (STIX)*, which is a language and serialization format used to exchange *CTI*. *STIX* enables organizations to convey the full range of potential threat information, from high-level attack patterns and technical indicators to detailed threat actor profiles and the *tactics, techniques, and procedures (TTPs)* that they use.

Together, *TAXII* and *STIX* facilitate the automated exchange, processing, and analysis of cyber threat information among various parties, including private sector organizations, government agencies, and other entities involved in cybersecurity defense. This leverages shared knowledge about existing and emerging threats to help improve the speed and accuracy of threat detection, analysis, and response.

Chapter 2. Requirements

Server information

Server information for Trusted Automated Exchange of Indicator Information (TAXII) services, highlighting uniform resource locators (URLs) for discovery and root access, server protocol and Structured Threat Information Expression (STIX) versions, along with collection IDs for threat types such as phishing and ransomware.

Table 1. Server information

Syntax	Description
TAXII Discovery *uniform resource locator (URL)*	https://ti-taxii.nws.nozominetworks.io/taxii/
TAXII Root *URL*	https://ti-taxii.nws.nozominetworks.io/root/
Server protocol	*TAXII* 2.0
STIX version	*STIX* 2.0

Table 2. Collection IDs

Operational Technology (OT)	`thw2k6rf-w130-zaiv-i606-rsm42fk4dwms`
Internet of Things (IoT)	`aq6odbpq-5tzs-zonm-yr2p-3djab10n5t6k`
Phishing	`24ml9vt0-vbi4-61td-a8l3-xhuxpwxeccha`
Ransomware	`sx76qzvj-bx02-vnrn-zsd7-k9fx4g8c2tqg`
Hacking Frameworks	`56a15872-9565-4f3a-9975-340416369a4d`
General (includes indicators from all other collections)	`y6bpc38c-bxvz-49ga-y96f-558drdq2x6s4`

Chapter 3. Configuration

taxii2client configuration

*Learn how to use the minimal Python library from OASIS to set up a **taxii2client** to interact with the TAXII server from Nozomi Networks. This includes integration for software that does not support the TAXII 2.0 protocol.*

The **taxii2client** is a minimal Python *TAXII* client from OASIS, which can be used to interact with the Nozomi Networks *TAXII* server. This library is useful if you want to integrate indicators that are pulled from the Nozomi Networks *TAXII* server with software which does not support the *TAXII* 2.0 protocol. For more detailed installation instructions and library documentation, see the OASIS TC Open Repository cti-taxii-client GitHub repository.

The code snippet below prints all indicator objects from the **Operational Technology (OT)** collection and calculates their total number:

```
from taxii2client.v20 import Collection, as_pages

COLLECTION_ID = 'thw2k6rf-w130-zaiv-i606-rsm42fk4dwms' # OT collection
TAXII_USER = 'REPLACE_WITH_PROVIDED_USERNAME_HERE'
TAXII_PASSWORD = 'REPLACE_WITH_PROVIDED_PASSWORD_HERE'

collection =
 Collection(f"https://
ti-taxii.nws.nozominetworks.io/root/collections/{COLLECTION_ID}/",
 user=TAXII_USER, password=TAXII_PASSWORD)
total_indicators = 0
for page in as_pages(collection.get_objects, per_request=99):
    for o in page['objects']:
        if 'type' in o and o['type'] == 'indicator':
            total_indicators += 1
            print(o)
print(f"total indicators: {total_indicators}")
```

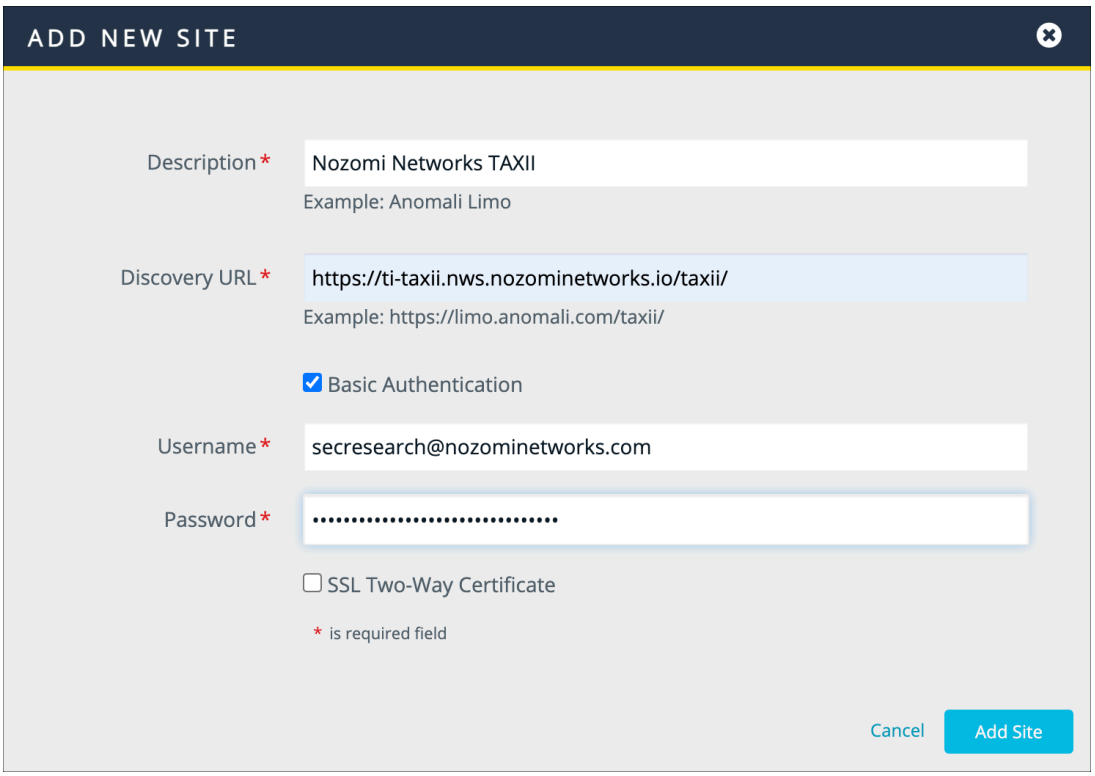
Configure Anomali STAXX

Do this procedure to configure the Anomali STAXX, a free TAXII/STIX solution, for integration with the Nozomi Networks TAXII server, including setting descriptions, uniform resource locators (URLs), and authentication details.

Procedure

1. Download Anomali STAXX from the Anomali website.
2. To install the downloaded *open virtual appliance (OVA)* file, follow the Anomali instructions.
3. Launch Anomali STAXX.
4. Select **Add New Site**.

   Result: A dialog shows.
5. In the **Description** field, enter a description.

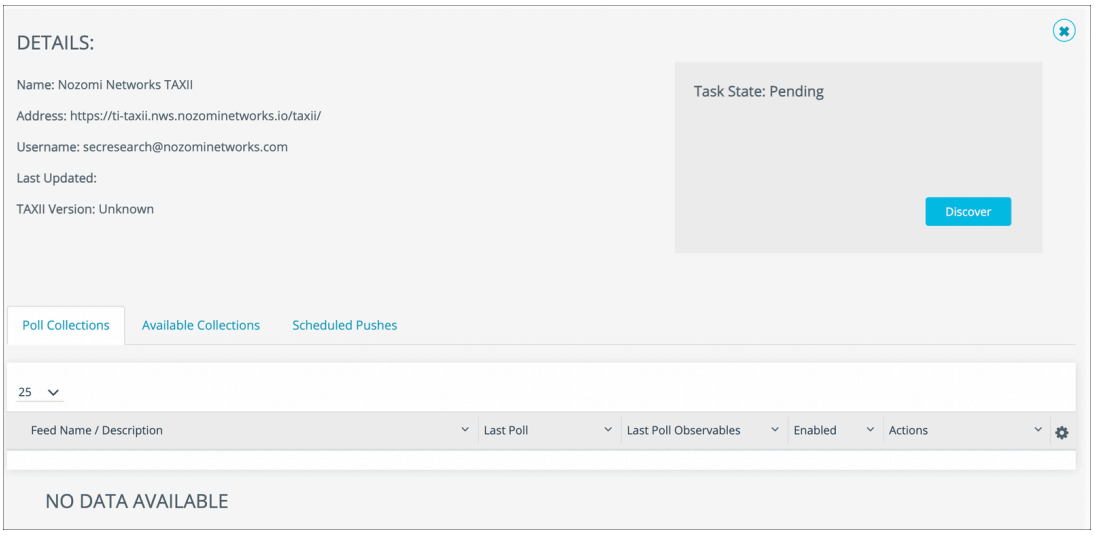


6. In the **Discovery URL** field, enter the **Discovery** *URL*:
   `https://ti-taxii.nws.nozominetworks.io/taxii/`
7. Select the **Basic Authentication** checkbox.
8. In the **Username** field, enter your username.
9. In the **Password** field, enter your password.
10. Do not select the **SSL Two-Way Certificate** checkbox.

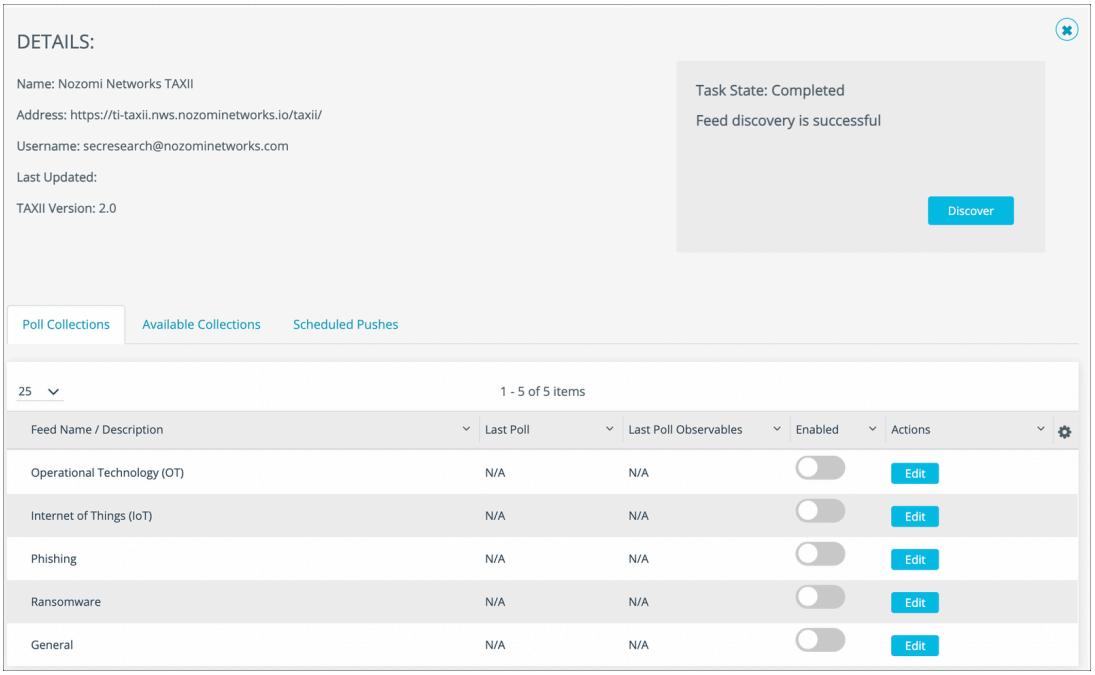
11. Select **Add Site**.

    The site will be added.

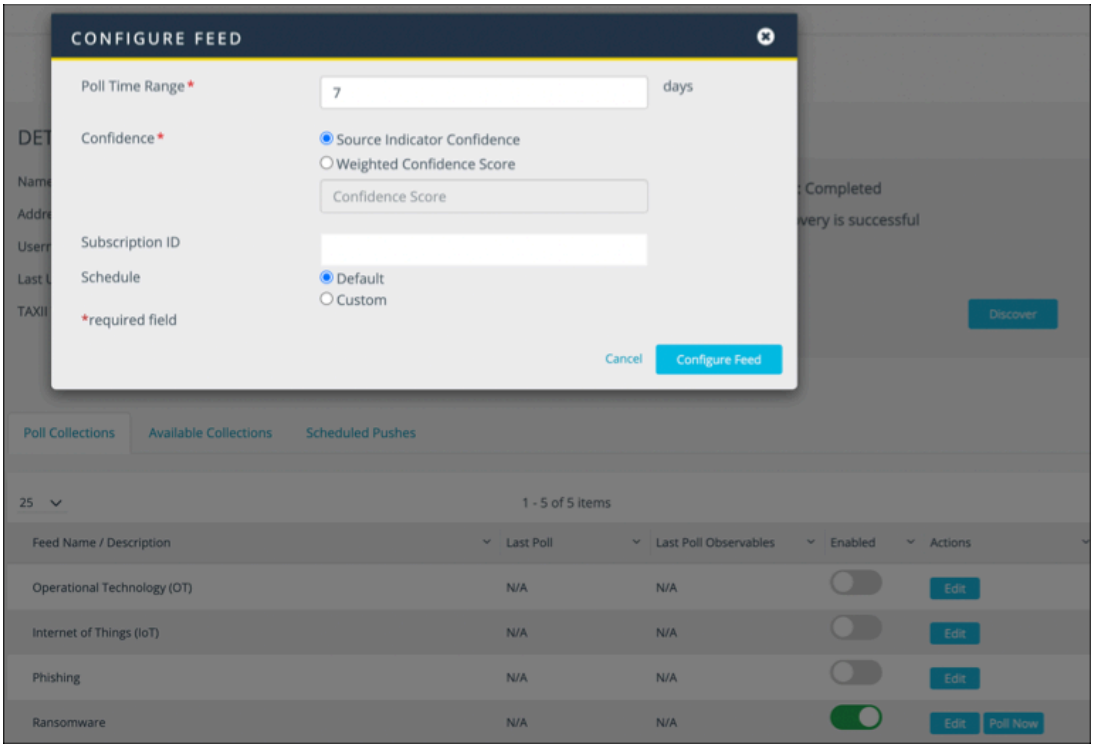
12. In the section on the right, select **Discover**.



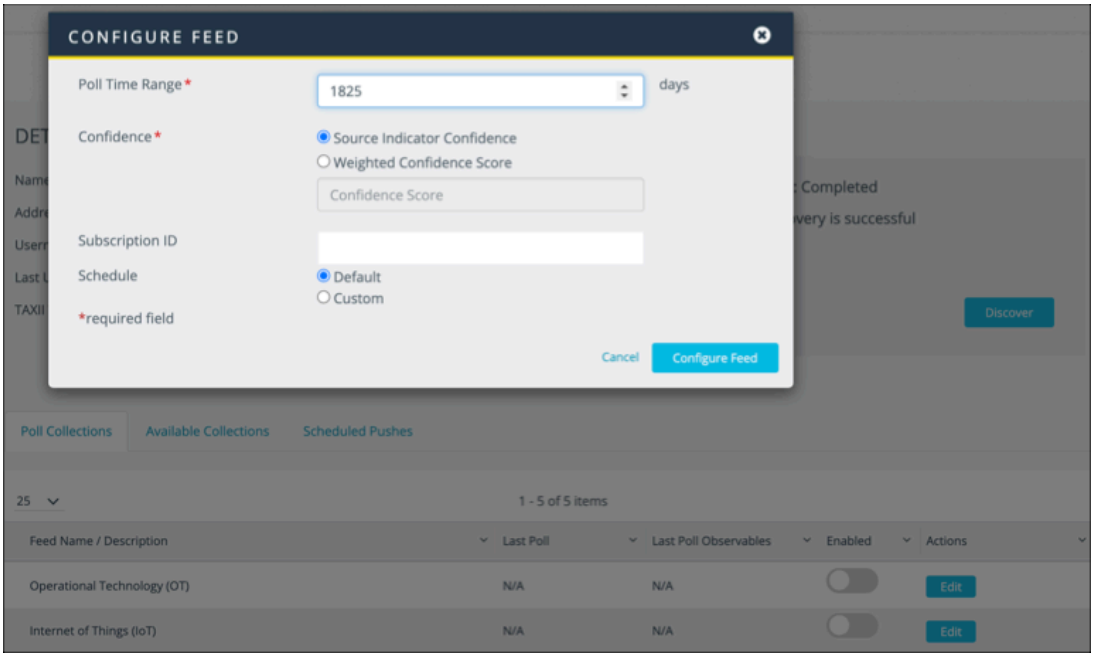
13. Select **Enable** for each item as necessary.



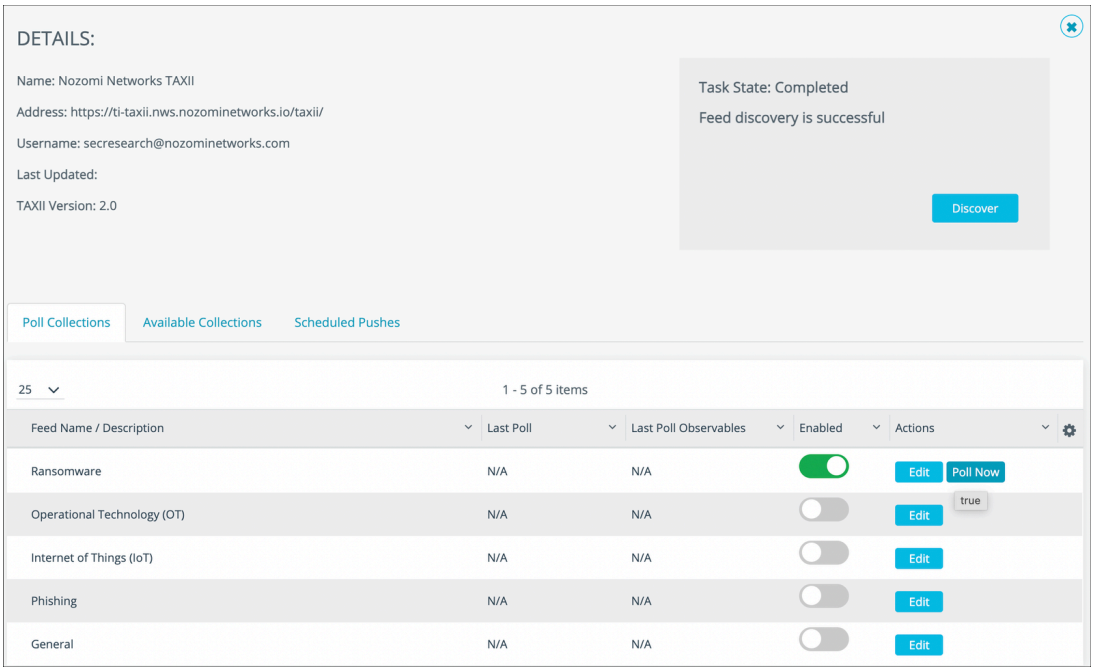
14. To select the time range to poll indicators from, select **Edit** for the applicable collection.



In order to receive historical indicators, this value should be high for the initial poll. You can then decrease it based on how often the server will be polled. For example, if polling daily, only poll for indicators that have been added within the last 24 hours.



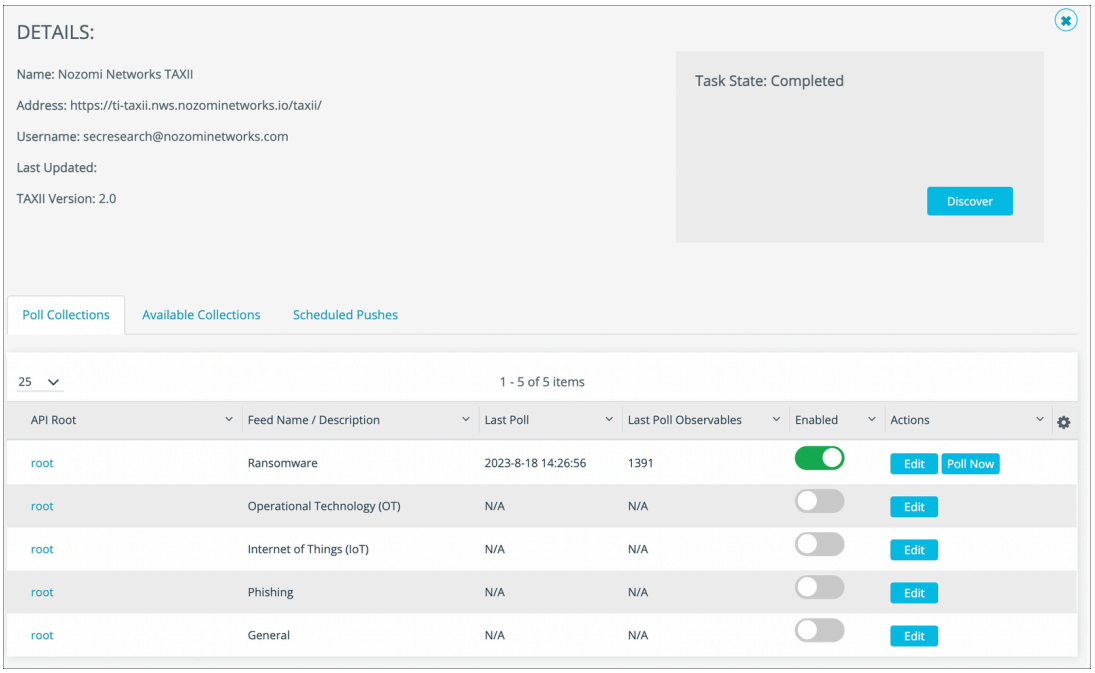
15. To poll indicators, select **Poll Now**.



Note:

This can take some minutes depending on how large a collection is.

Once this process completes, the number of **Last Poll Observables** will show a value.



Results

The indicators can be accessed from the **Dashboard** menu.

Configure Microsoft Sentinel

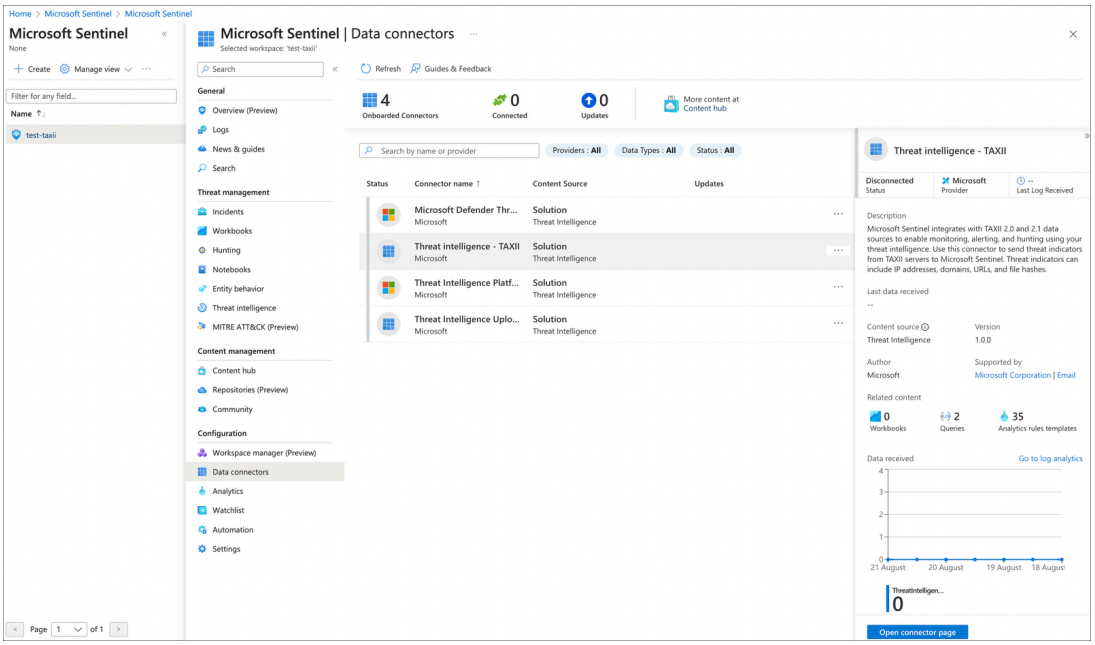
Once the Threat Intelligence - TAXII data connector is installed, you need to configure the TAXII server.

About this task

Microsoft Sentinel is a cloud-native *security information and event management (SIEM)* solution that provides intelligent security analytics. **Microsoft Sentinel** can interact with *TAXII* servers using the Threat Intelligence - TAXII data connector. For more details on Microsoft TAXII configuration, see the Microsoft documentation.

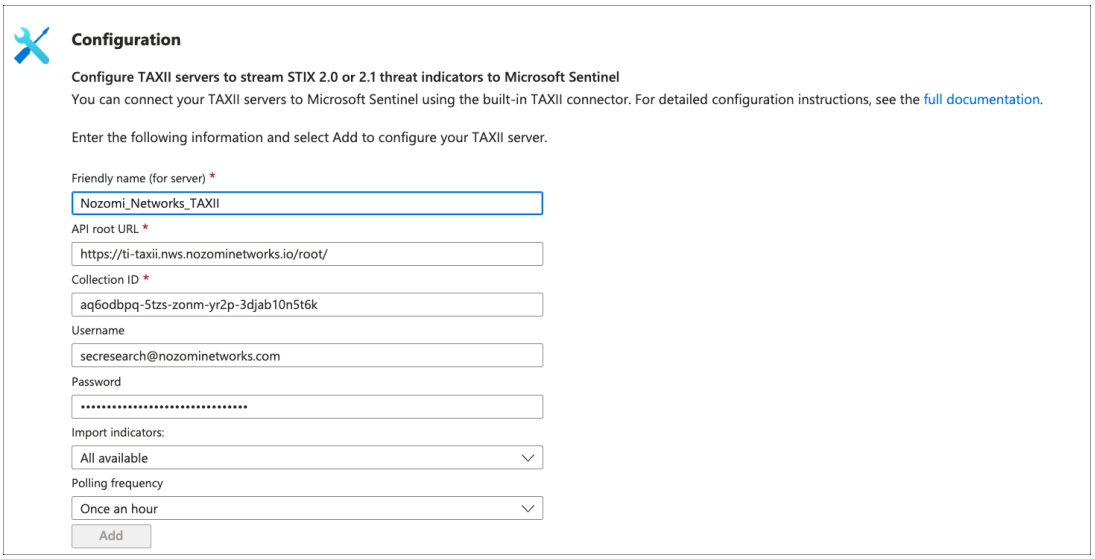
Procedure

1. Open **Microsoft Sentinel**.
2. Select the **Threat Intelligence - TAXII** data connector for **Microsoft Sentinel**.
3. In the bottom right section, select **Open connector page**.



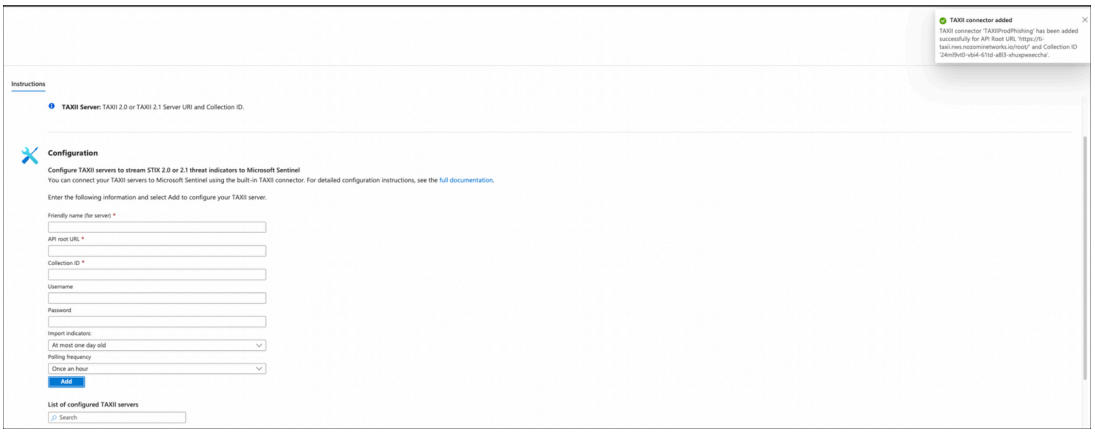
The connector settings for **Microsoft Sentinel** show.

4. Use the `/root/` endpoint to add each collection individually for **Microsoft Sentinel**.

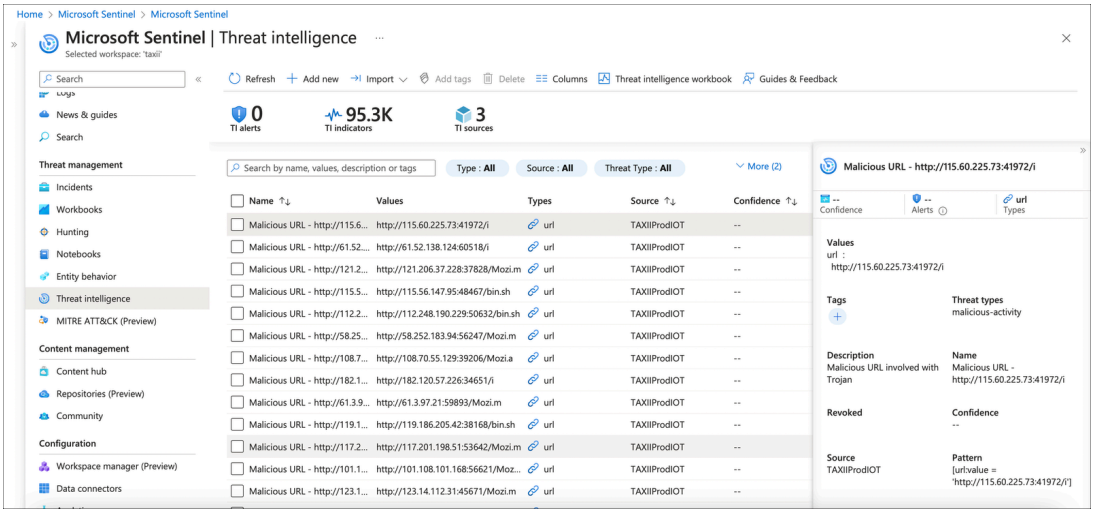


Note:
Make sure that you use the `/root/` endpoint instead of the discovery endpoint `/taxii/`.

5. To verify that the operation was successful, make sure that you can see a message on the right.



You can now access the indicators from the **Threat Intelligence** page.



Results

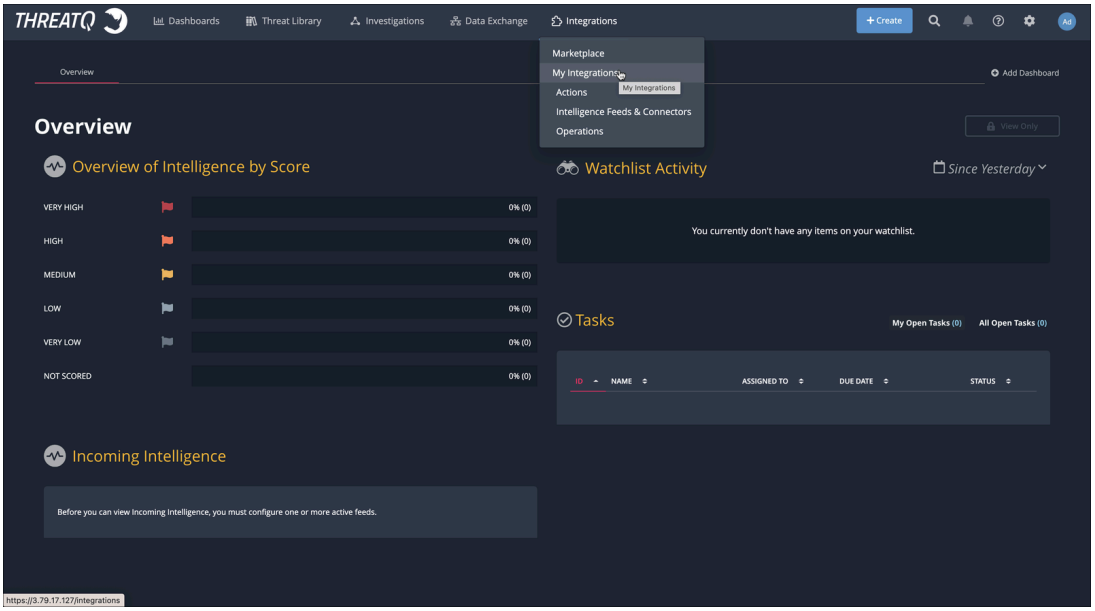
Microsoft Sentinel has now been configured.

Configure ThreatQ

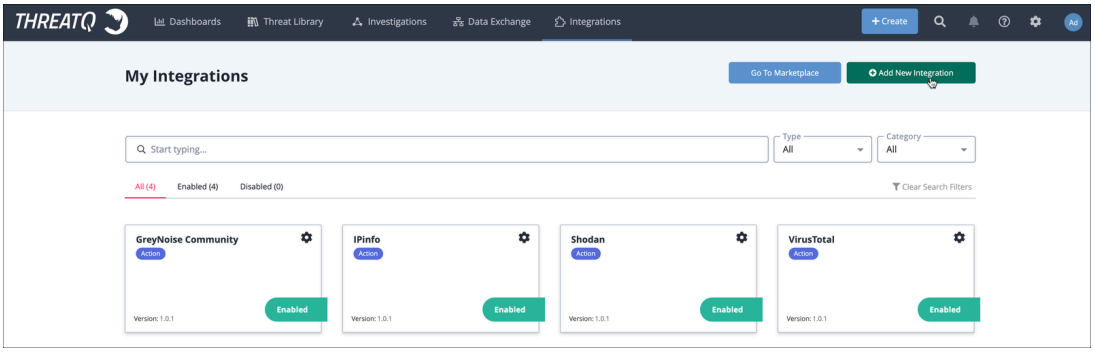
Follow these steps to add and enable a new TAXII feed integration in ThreatQ, verify indicator ingestion, and monitor the integration's status through the Activity Log.

Procedure

1. Open **ThreatQ**.
2. Go to **Integrations > My Integrations**.

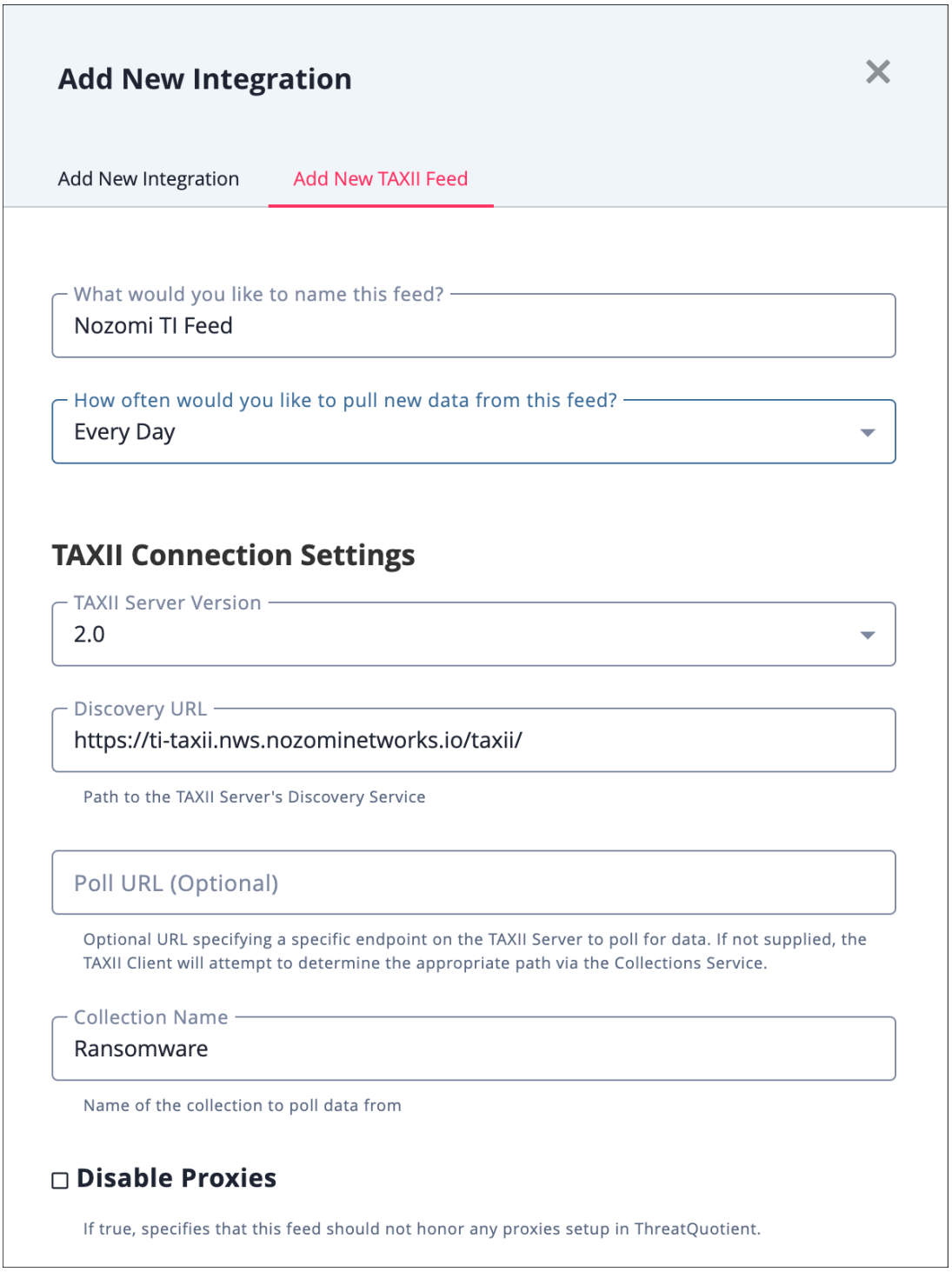


3. In the top right section, select **Add New Integration**.

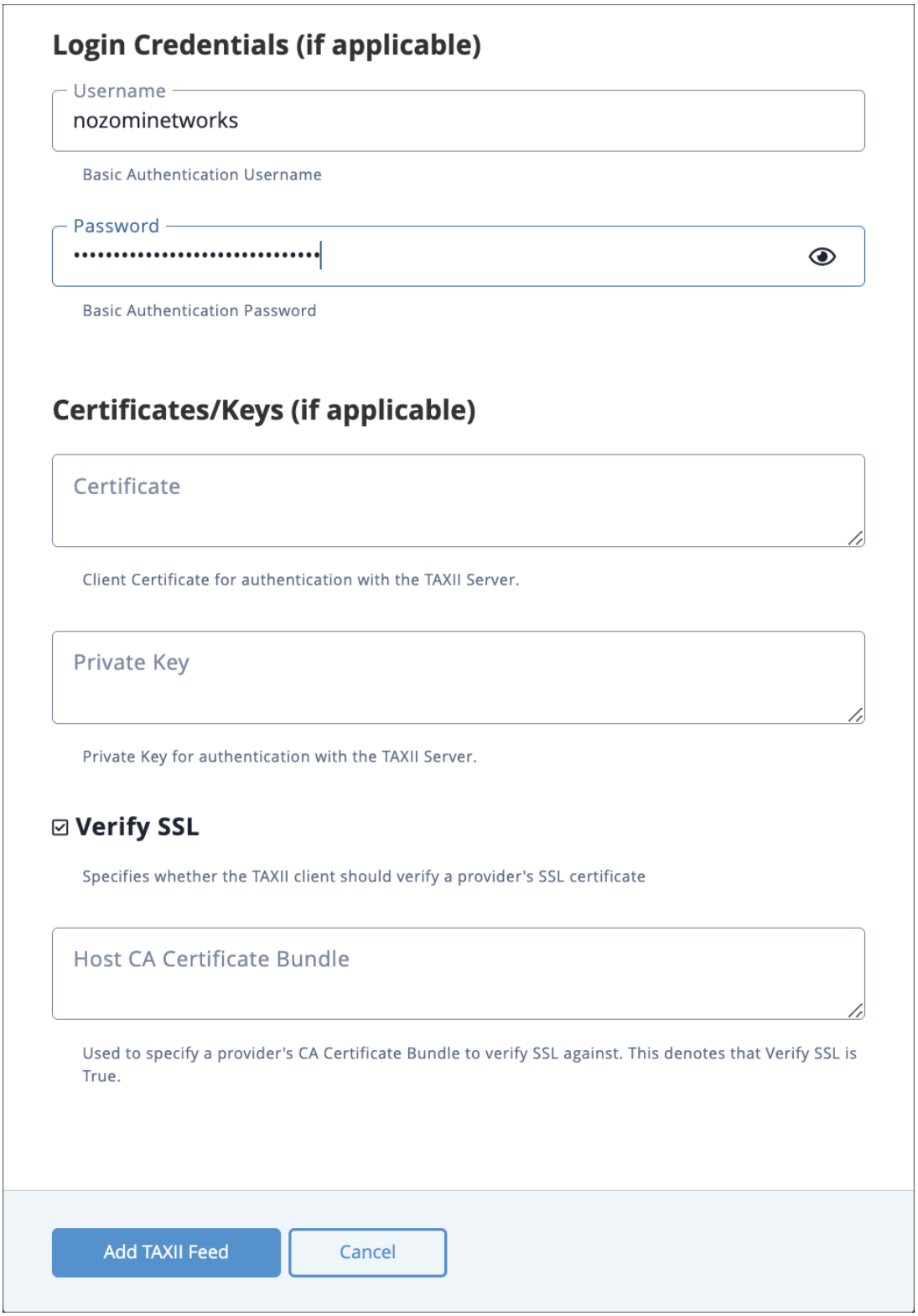


Result: A dialog shows.

4. Select **Add New TAXII Feed**.



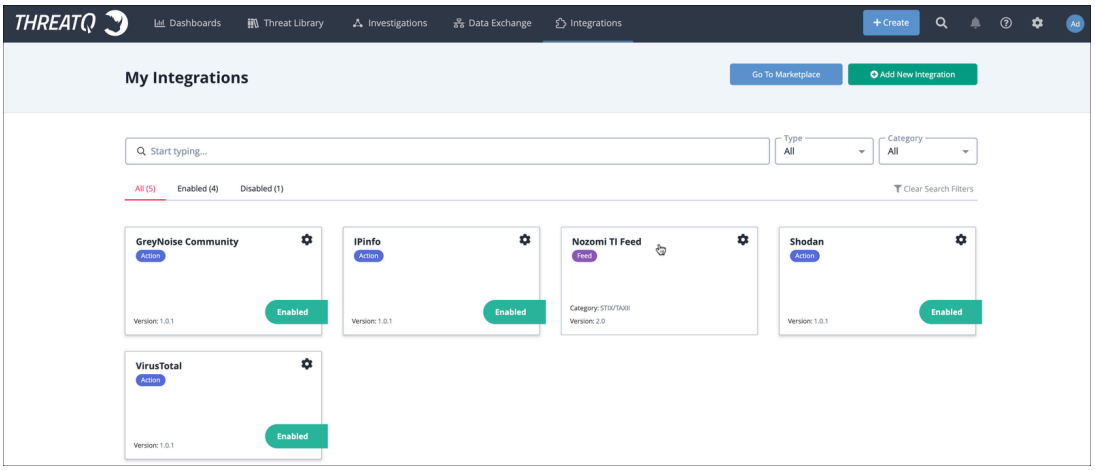
5. Enter the details in each field.



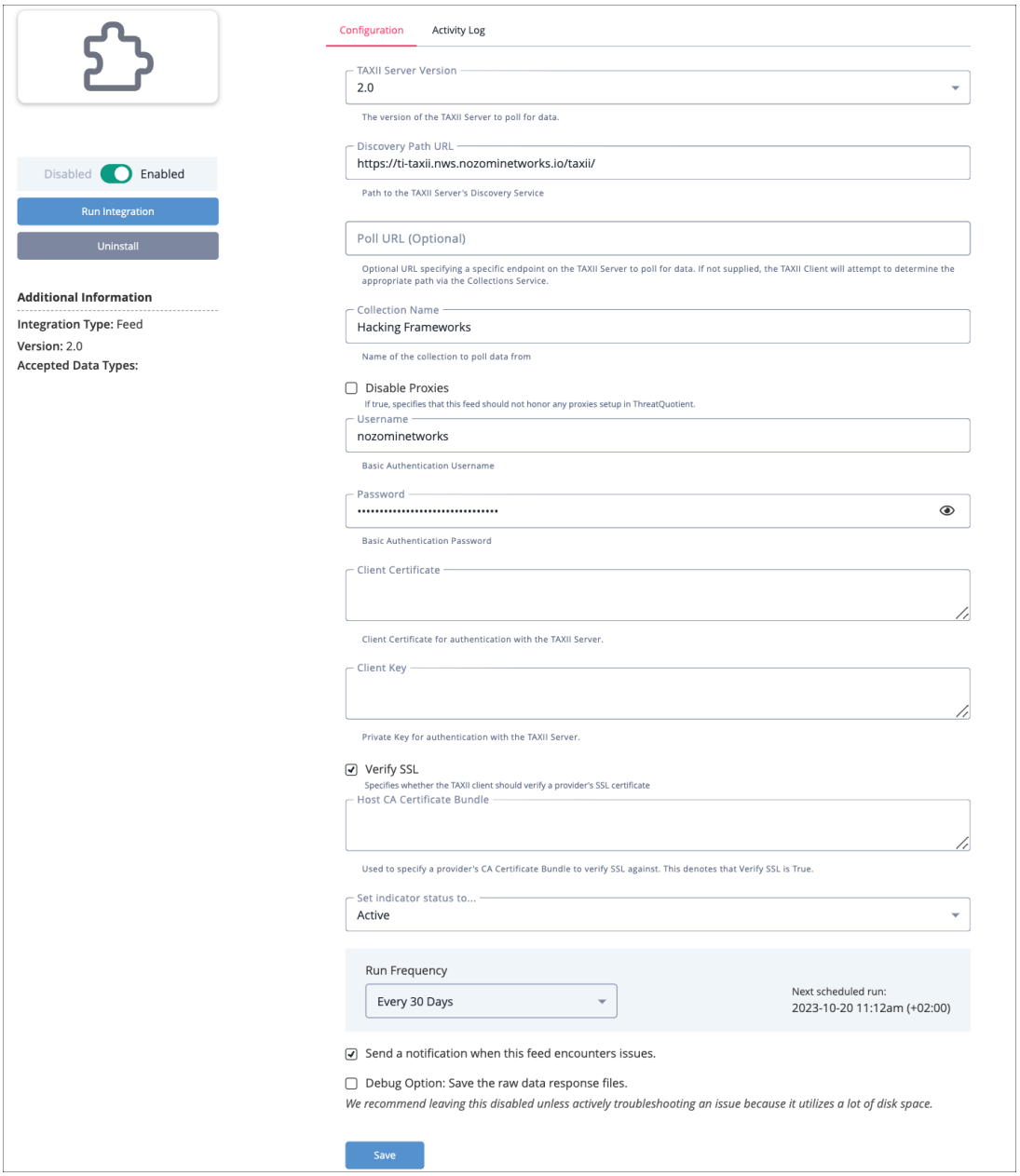
Do not use Collection *identifier (ID)*s, use Collection names.

6. Select **Add TAXII Feed**.

7. In the **My Integrations** page, select the integration that you just created.

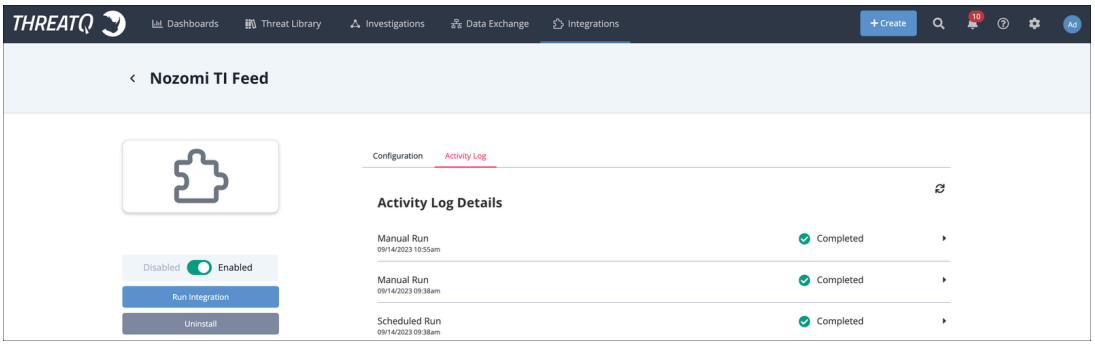


8. In the top left section, select the toggle to **Enabled**.

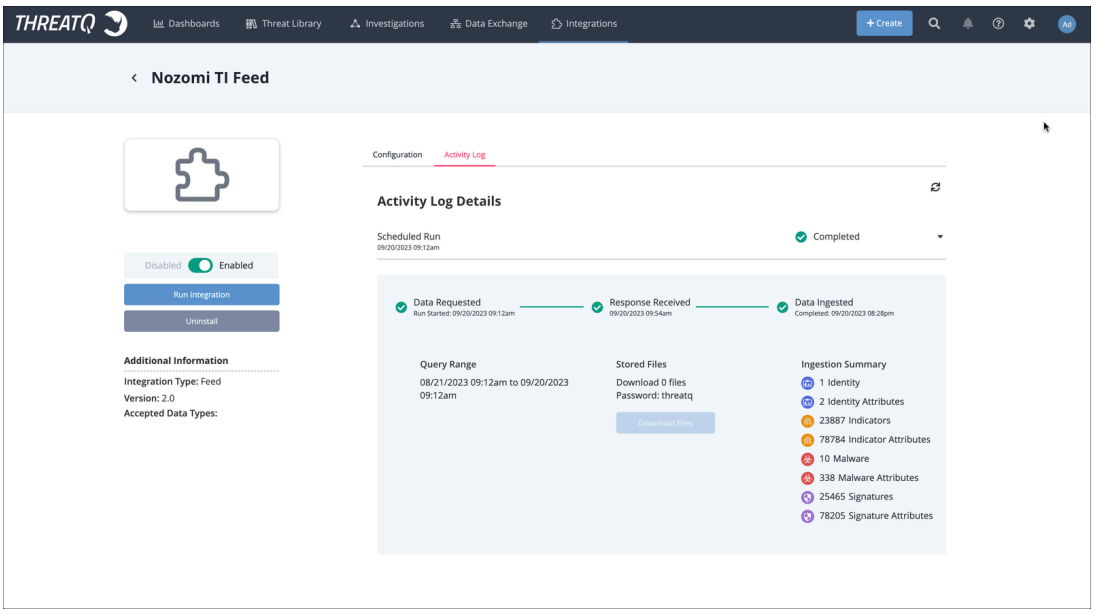


9. Select **Save**.
10. Select **Activity Log**.

11. In the **Activity Log Details** section, make sure that the first manual, or scheduled, run shows as **Completed**.



12. Make sure that the indicators have been ingested correctly.



Results

ThreatQ has been configured.

Configure QRadar

Do this procedure to integrate a new TAXII feed into QRadar to enhance threat intelligence capabilities. This procedure covers adding the feed, ensuring full indicator ingestion, and monitoring the integration via the Activity Log for optimal security posture.

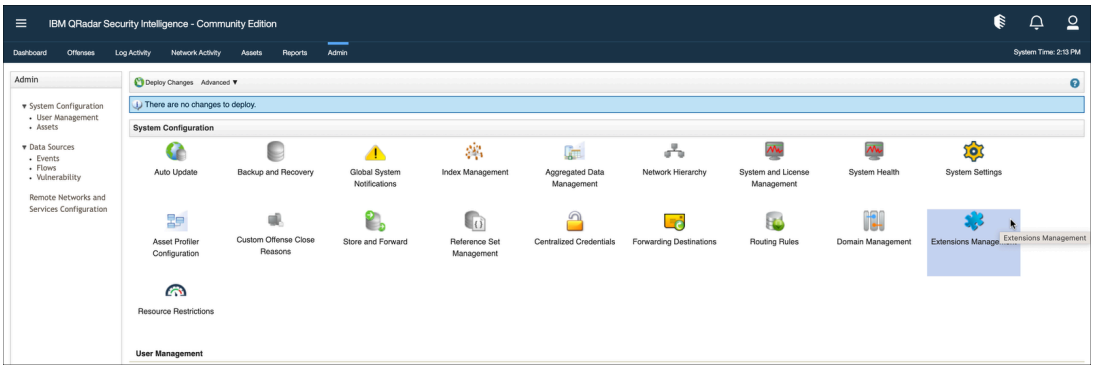
About this task

Note:

The Threat Intelligence application version 2.4.2, and earlier, has a bug that can lead to only partial ingestion of the *TAXII* data. IBM is aware of the bug.

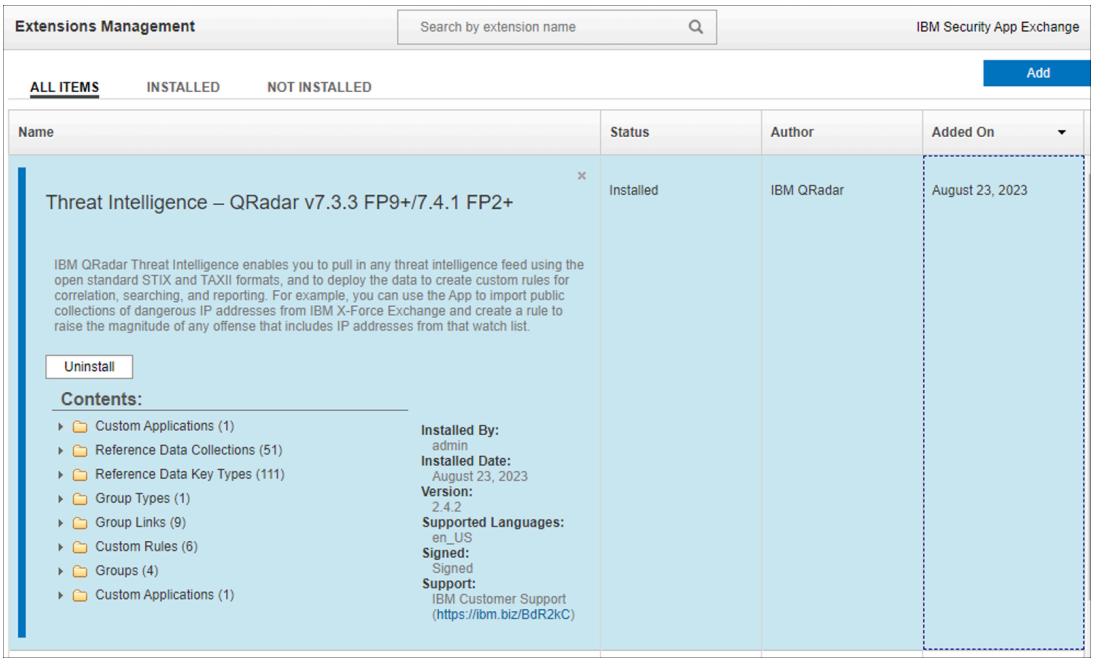
Procedure

1. Download QRadar from the IBM website.
2. Go to **Admin > Extensions Management**.

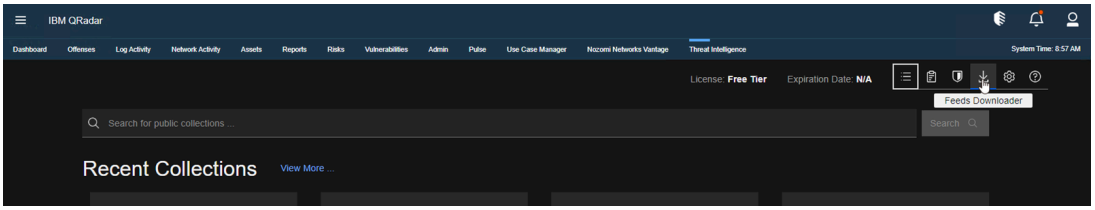


3. Select **All items**.

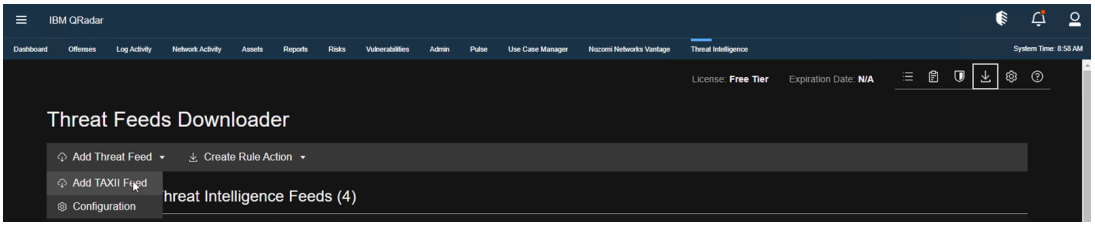
4. Make sure that you have the latest version of the Threat Intelligence app installed.



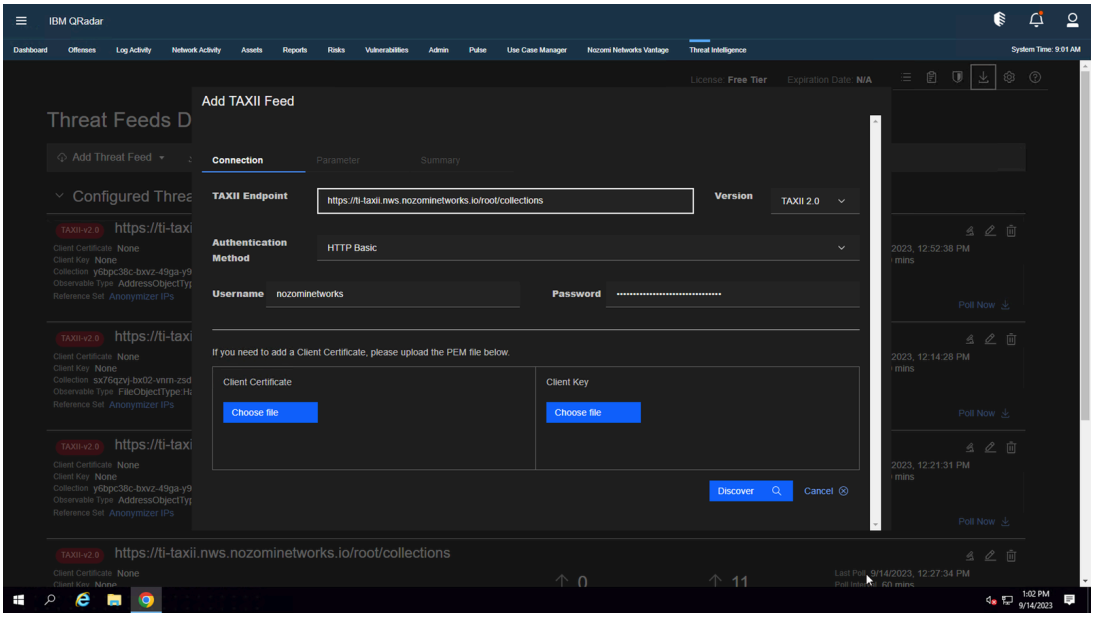
5. Select **Threat Intelligence**.



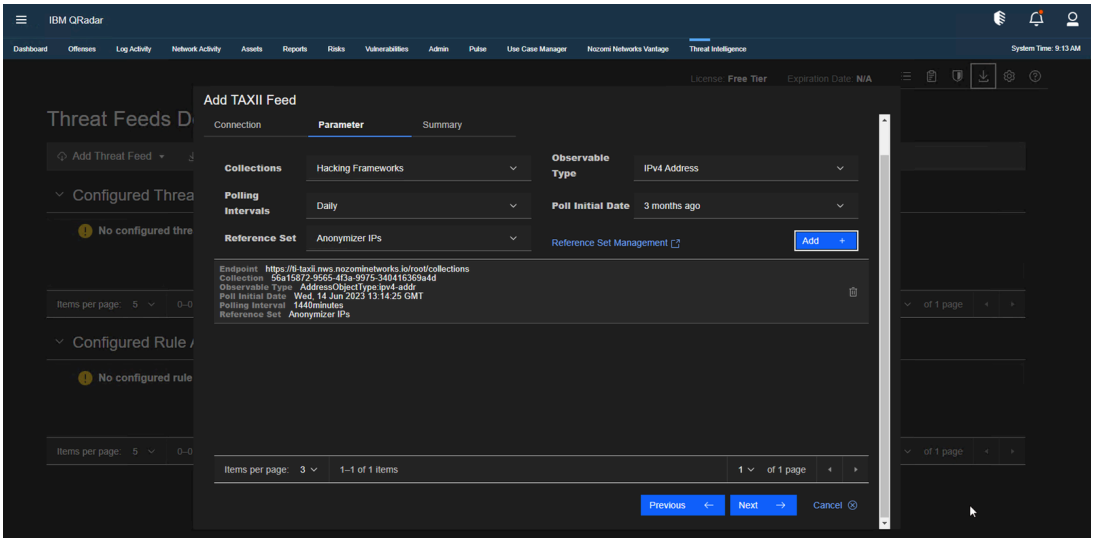
6. Select **Feeds Downloader**.
7. Select **Add Threat Feed > Add TAXII Feed**.



8. In the **Connection** page, in the **Version** dropdown, select **TAXII 2.0**.

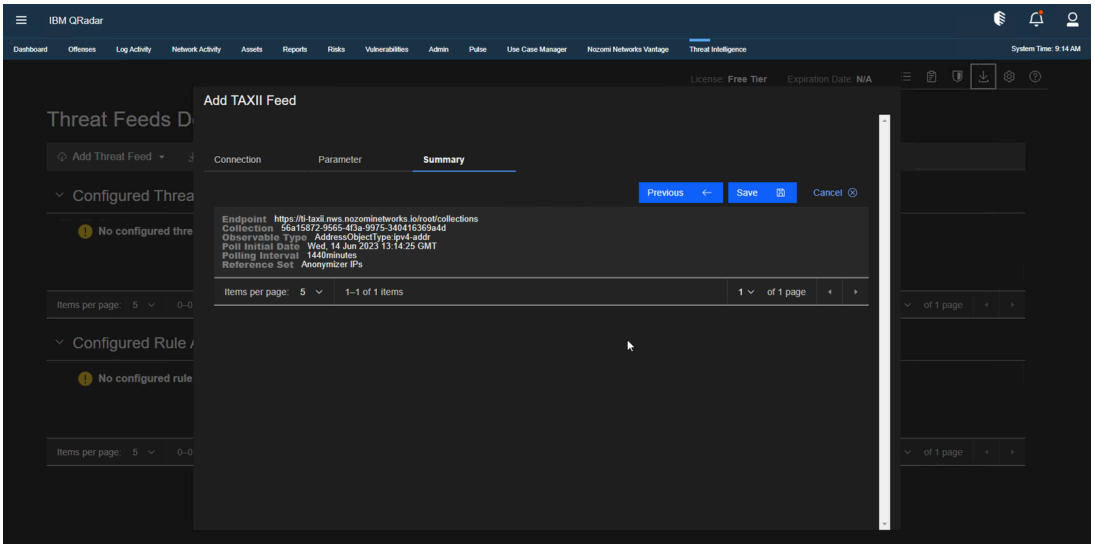


9. Enter the details as necessary in the other fields. Make sure the endpoint string has `/root/collections` at the end.
10. Select **Discover**.
11. Select **Parameter**.
12. From the **Collections** dropdown, select the applicable option.

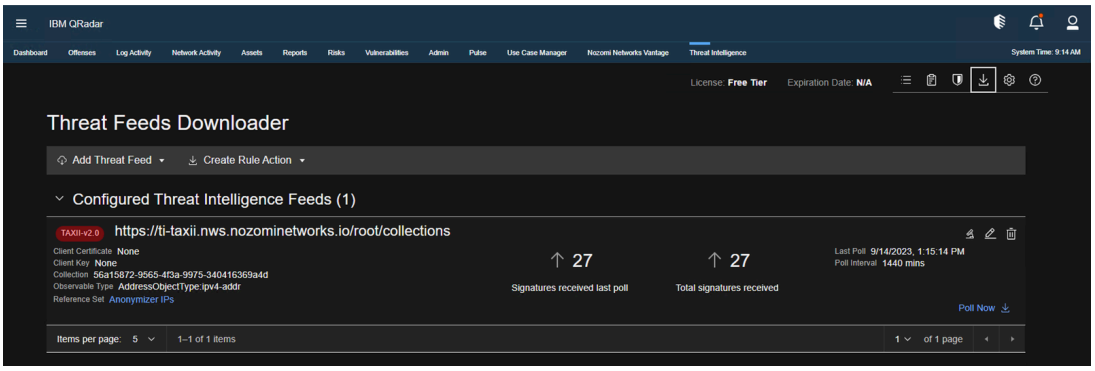


13. From the **Observable Type** dropdown, select the applicable indicator type.
14. To the right of **Reference Set Management**, select **Add**.
15. In the bottom right section, select **Next**.

16. In the **Summary** page, select **Save**.



17. You can now select **Poll Now** to force the indicator collection.



Results

QRadar has been configured.

Chapter 4. Troubleshooting

Error message: HTTP 401 Unauthorized

Possible cause

This error will show if the incorrect credentials were used.

Procedure

Make sure that the user is using the correct credentials that were provided to them.

If none of the previous solutions work, please contact our Customer Support team.

Error message: HTTP 404 Not found

Possible cause

The incorrect discovery, or root, *URL* has been used.

Procedure

Make sure that the discovery *URL* used in the configuration is correct.

Procedure

Make sure that the root *URL* used in the configuration is correct.

If none of the previous solutions work, please contact our Customer Support team.

Error message: HTTP 406 Not Acceptable

Possible cause

This error will show if the client sent a *hypertext transfer protocol (HTTP)* header, which the server cannot accept. The expected header can be found in the official TAXII 2.0 specification. This might happen if the client is not correctly configured to use TAXII 2.0 as its protocol, and instead uses TAXII 1.x or TAXII 2.1.

Procedure

1. Make sure that you specify that the server is TAXII 2.0.
2. If this does not solve the problem, contact our Customer Support team with this information:
   - The name of the client
   - The version of the client
   - All logs that you can export
   - A timestamp of when the error occurred

> **Note:**
> This information will be extremely valuable for further debugging.

Glossary

Cyber threat intelligence

CTI collects and analyzes information on cyber threats and vulnerabilities, providing insights for organizations to proactively understand, prevent, and mitigate cyberattacks. To do this, it learns about the tactics, techniques, and procedures of attackers.

Hypertext Transfer Protocol

HTTP is an application layer protocol in the Internet protocol suite model for distributed, collaborative, hypermedia information systems. HTTP is the foundation of data communication for the World Wide Web, where hypertext documents include hyperlinks to other resources that the user can easily access, for example by a mouse click or by tapping the screen in a web browser.

Identifier

A label that identifies the related item.

Internet of Things

The IoT describes devices that connect and exchange information through the internet or other communication devices.

Open Virtual Appliance

An OVA file is an open virtualization format (OVF) directory that is saved as an archive using the .tar archiving format. It contains files for distribution of software that runs on a virtual machine. An OVA package contains a .ovf descriptor file, certificate files, an optional .mf file along with other related files.

Operational Technology

OT is the software and hardware that controls and/or monitors industrial assets, devices and processes.

Security Information and Event Management

SIEM is a field within the computer security industry, where software products and services combine security event management (SEM) and security information management (SIM). SIEMs provide real-time analysis of security alerts.

Structured Threat Information Expression

STIX™ is a language and serialization format for the exchange of cyber threat intelligence (CTI). STIX is free and open source.

Tactics, techniques, and procedures

TTPs are the patterns of behavior that describe how cyber adversaries operate, encompassing their strategies (tactics), tools and methods (techniques), and specific procedures for executing attacks. Understanding TTPs aids in predicting and defending against future cyber threats.

Trusted Automated Exchange of Indicator Information

TAXII is a protocol for the exchange of cyber threat intelligence (CTI) online. It is often used with Structured Threat Information Expression (STIX) to share detailed threat information.

Uniform Resource Locator

An URL is a reference to a resource on the web that gives its location on a computer network and a mechanism to retrieving it.