User Guide

FortiNDR Cloud 25.3.b

FORTINET DOCUMENT LIBRARY
https://docs.fortinet.com

FORTINET VIDEO LIBRARY
https://video.fortinet.com

FORTINET BLOG
https://blog.fortinet.com

CUSTOMER SERVICE & SUPPORT
https://support.fortinet.com

FORTINET TRAINING & CERTIFICATION PROGRAM
https://www.fortinet.com/training-certification

FORTINET TRAINING INSTITUTE
https://training.fortinet.com

FORTIGUARD LABS
https://www.fortiguard.com

END USER LICENSE AGREEMENT
https://www.fortinet.com/doc/legal/EULA.pdf

FEEDBACK
Email: techdoc@fortinet.com

September 9, 2025
FortiNDR Cloud 25.3.b User Guide
78-253-880837-20250910

TABLE OF CONTENTS

Change Log

Date	Change Description
2025-09-10	Updated Key terms and concepts on page 15 and Reports on page 112.
2025-09-08	Added NetFlow on page 155
2025-09-05	Updated Sensor settings on page 132.
2025-09-03	Initial release of 25.3.a.
2025-08-15	Updated Reports on page 112.
2025-07-31	Updated FortiNDR Cloud Integrations on page 172.
2025-07-25	Updated Fields and field types on page 183.
2025-07-21	Updated Account management on page 135.
2025-07-14	Initial release of 25.3.a.
2025-07-08	Initial release of 25.3.0.
2025-06-26	Initial release of 25.2.c.
2025-06-12	Updated IQL reference guide on page 174.
2025-06-10	Updated Common fields on page 188 and .
2025-05-22	Initial release of version 25.2.b.
2025-05-08	Initial release of version 25.2.a.
2025-04-30	Initial release of version 25.2.0.
2025-03-31	Added Response configuration on page 67 and updated Account management settings on page 141.
2025-03-27	Initial release of version 25.1.e.
2025-03-12	Initial release of version 25.1.d.
2025-02-27	Initial release of version 25.1.c.
2025-02-12	Initial release of version 25.1.b.
2025-01-29	Initial release of version 25.1.a.
2025-01-08	Initial release of version 25.1.0.

Getting started

The following table provides a list of tasks to help you get started with FortiNDR Cloud:

Enable Multi-Factor Authentication (MFA)	Require all users to enter an MFA token when they log into the FortiNDR Cloud portal. To enable MFA, see Multi-factor authentication.
Configure email notifications	By default you will receive an email notification for every detection in your account and a daily digest summarizing all of the detections from the past 24 hours. To customize your email notifications, go to *Settings > Email Notifications*. For more information, see Email notifications on page 118.
Review the data available to you	• Network entity on page 14 • Network events on page 14 • Enriched object field types on page 184
Perform an Entity Lookup	An *Entity Lookup* is the starting point for an investigation. For more information, see Entity lookup on page 71.
View the Entity Panel	The *Entity Panel* displays the contextual information collected for an entity from within and outside the network. For more information, see Entity Panel on page 43.

Logging into the portal

Users can log into the FortiNDR Cloud portal using either a FortiNDR Cloud account or Single Sign-On (SSO).

The following table provides an overview of how user accounts are managed in FortiNDR Cloud, including user creation, multi-factor authentication, and permission management.

Account	User creation	Multi-Factor Authentication	Permission management
FortiNDR Cloud	Admin creates user in FortiNDR Cloud	Managed by FortiNDR Cloud	• Admin assigns permissions • Training access included automatically
SSO enabled	Admin creates user, or user logs in with SSO	• Managed by SSO provider if logging in with SSO	• Managed at the time the user is created in the portal (or later)

Account	User creation	Multi-Factor Authentication	Permission management
		• Manged by FortiNDR Cloud if logging in with FortiNDR Cloud username and password.	• Training access included automatically
SSO enabled with SSO only	User logs in with SSO	Managed by SSO provider	• May be added only after user logs in once • Training access only when first logged in
SSO not enabled	Admin creates user	Managed by FortiNDR Cloud	• Managed at time user is created (or later) • Training access included automatically

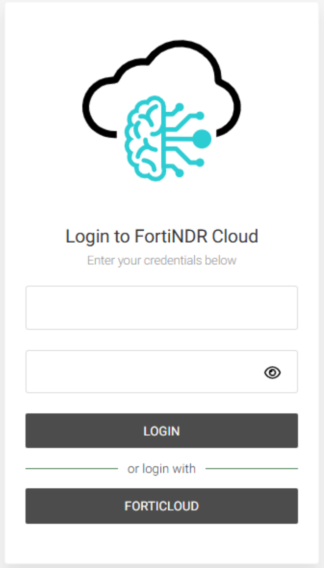
- FortiNDR Cloud only supports IdP initiated SAML.
- Assertions must always be signed.

You can log into the FortiNDR Cloud portal with an email address or with a FortiCloud sub-user account.

To log into the portal:

1. Go to https://portal.fortindr.forticloud.com/.
2. Do one of the following:

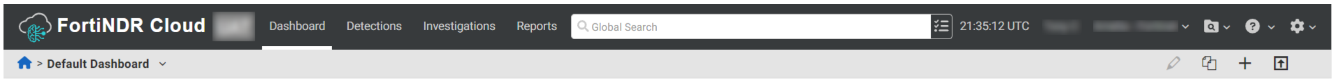
Log in with	Description
Email	Enter your email address and password, then click *Login*.
FortiCloud	**1.** Click *FortiCloud*. The FortiCloud login page opens. **2.** Enter your FortiCloud email address, password and token to login. You can only login in with a FortiCloud sub-user account. The FortiNDR Cloud portal does not support IAM users at this time. For information, see *User permissions* in the FortiCloud Services Guide.



Navigating the portal

This topic provides an overview of the navigation tabs and menus in the FortiNDR Cloud portal.

The portal is organized into tabs located in the navigation menu at the top of the portal. Links to the product documentation and *Settings* pages are located in the top-right corner of the page.



Dashboard	This is the landing page for the FortiNDR Cloud portal and provides high-level summary information. For more information, see Dashboard on page 17.
Detections	This tab shows detections that have fired in your account. For more information, see Detections on page 25.
Investigations	This is where you perform queries or run guided queries for forensic analysis and hunting over your network data. For more information, see Investigations on page 71.
Reports	Use this tab to run the *FortiNDR Cloud Network Security Posture Report* and the *FortiNDR Cloud Detections Report*. For more information, see Reports on page 112.

Global Search	Use the Global Search function to search FortiNDR Cloud with a text string, IP address or domain. Search results are organized by *Detections*, *Detections Coverage*, *Investigations*, *Search Timeline* and *Entity Lookup*. You can enter multiple IPs or domains separated by a comma or a space. However, if you are performing a bulk search for IPs FortiNDR Cloud will stop the search after it finds the first IP in the list.
Settings	This icon located in the top-right provides access to auxiliary pages related to user and account settings and management. For more information, see Settings on page 116.

Configuring global search

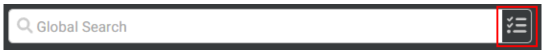
The Global Search function allows you to search FortiNDR Cloud using a text string, IP address, or domain. You can enter multiple IPs and domains, separated by a comma or space.

You can configure Global Search to:

- Show or hide categories
- Limit the number of results
- Arrange the order of results on the page

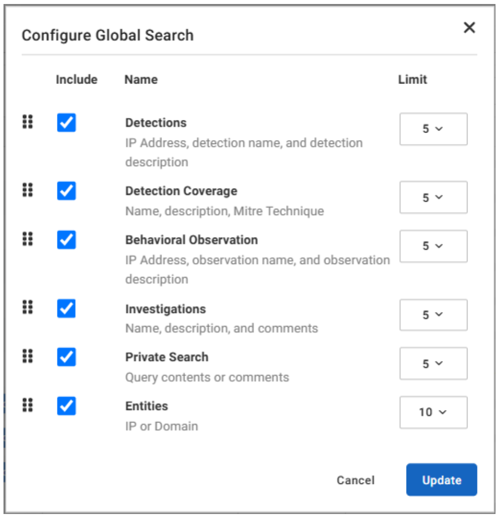
To configure global search:

1. Click the dropdown menu at the right side of the search field. The *Configure Global Search* dialog opens.



2. Configure the search settings.

Include	Select/Deselect the categories to appear in the results.
Limit	Select 5, 10, or 50 results to be displayed.



Configure Global Search

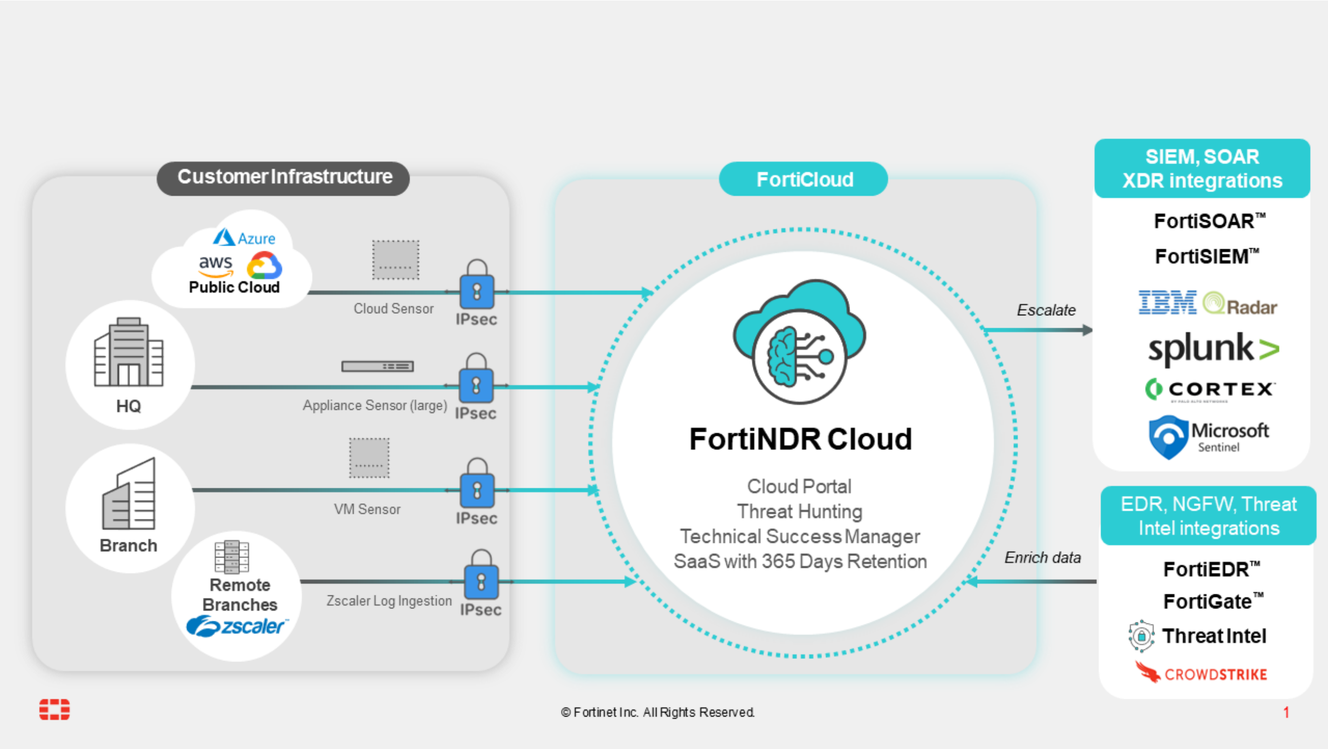
Include	Name	Limit
☑	**Detections** IP Address, detection name, and detection description	5
☑	**Detection Coverage** Name, description, Mitre Technique	5
☑	**Behavioral Observation** IP Address, observation name, and observation description	5
☑	**Investigations** Name, description, and comments	5
☑	**Private Search** Query contents or comments	5
☑	**Entities** IP or Domain	10

3. To arrange the order the results are displayed, drag a heading up or down in the dialog.
4. Click *Update*.

Overview

FortiNDR Cloud is a cloud-native network detection and response solution built for the rapid detection of threat activity, investigation of suspicious behavior, proactive hunting for potential risks, and directing a fast and effective response to active threats.

The following diagram illustrates the components and benefits of the solution at a high level:



Key notes relating to architecture and securing customer data:

- Data from customer and/or public cloud sensors encrypts network meta data collected to SaaS solution with strong IPSEC encryption. This encryption is end-to-end to ensure customer network metadata is not compromised (data in transit).
- Network data from customers is encrypted at rest in FortiNDR Cloud.
- Customers will have a portal which enable access to illustrate detection, conduct investigations, and threat hunting.
- Third-party integrations such as EDR, NGFW, SIEM and SOAR products are enabled via APIs available from FortiNDR Cloud.
- FortiNDR Cloud data are enriched with different threat and network feeds to make data useful to comprehend.
- Network metadata collected do not contain PCAPS (despite it being possible to collect PCAPS on sensors for forensic analysis), please see further chapters on enabling PCAPs
- Fortinet data security and privacy practices are documented here: Data Privacy Practices

Network entity

An *Entity* is a unique identifier on the network. At this time, IP addresses and domains are supported entities. Entities are extracted from the event data and catalogued in their own data store. Contextual information is then added to the entities when applicable such as:

- First seen / last seen timestamps
- Associated hostnames and usernames from DNS, DHCP, Kerberos, and NTLM events
- WHOIS and Registration information
- VirusTotal intelligence
- Associated software

Entities observed in your account are stored indefinitely. This allows analysts to determine who is interacting with the network and answer questions such as:

- Which / how many of my hosts are interacting with this entity?
- Who is responsible for this entity?
- What other entities are associated with this entity?
- What does everyone else know about this entity?

Working with entity information

You can perform an *Entity Search* (or Lookup) by simply entering an IP address or domain in the *Search* field at the top navigation menu. An Entity Search is an excellent starting point for an investigation if you have very little information to work with, because the entity record may contain important contextual information. For more information about entity searches, see Entity lookup on page 71

The *Entity Panel* displays all of the information collected for an entity from both within and outside of the network. You can access the *Entity Panel* for an entity by left-clicking any entity anywhere in the portal. For more information, see Entity Panel on page 43

Network events

FortiNDR Cloud network sensors perform deep packet inspection of all observed network traffic and extract key protocol metadata for processing by the FortiNDR Cloud data pipeline. This metadata is organized into records called *Events*.

Flow

A *flow* is how FortiNDR Cloud organizes traffic for parsing and tying together events. A flow is a unique session between two hosts. Specifically, a flow is a collection of continuous packets having the same unique five-tuple (source IP, source port, destination IP, destination port, transport protocol) within a short time frame.

Every flow is identified with a unique `flow_id`. Multiple events can be produced from a single flow and are assigned the same `flow_id`.

There three categories of events:

- *Flow events*: The *Flow* event type, contains metadata from the lower layers of the OSI model (IPs, ports, byte counts, transport protocol, etc).
- *Protocol events*: Most event types such as DNS, HTTP, and SSL, contains metadata from the upper layers of the OSI model.
- *Synthetic events*: The *Suricata* and *Software* event types, contains metadata produced by processes that scan or analyze traffic rather than metadata taken directly from network traffic.

Every flow will have exactly one *Flow* event, zero or more protocol events, and zero or more synthetic events. There can only be one *Flow* event because FortiNDR Cloud can summarize all the networking/flow data in one record. There can be zero or more protocol events because the flow could be a raw network socket with no known application, an HTTP connection with numerous HTTP requests over the same connection, an RDP connection over SSL with an X.509 certificate exchanged, or anything else. Similarly, one flow could trigger twelve Suricata queries just as easily as zero queries.

Regardless of how many events are produced from a single flow, FortiNDR Cloud assigns them the same unique `flow_id`, which provides a bigger picture surrounding other events in the session.

Working with events and flows

Running a query will return a list of events. If an event in the list stands out for some reason, you can run a separate query for that event's `flow_id` to see what other events were produced during that session/connection/conversations/flow.

Protocols are parsed regardless of port or service. Events are normalized for time and enriched with Geo-IP information and Threat Intelligence for additional context. Once this processing and enrichment is finished, events are surfaced through the FortiNDR Cloud portal and APIs.

For a complete list of supported field types, go to *IQL reference guide* > *Fields and field types on page 183*.

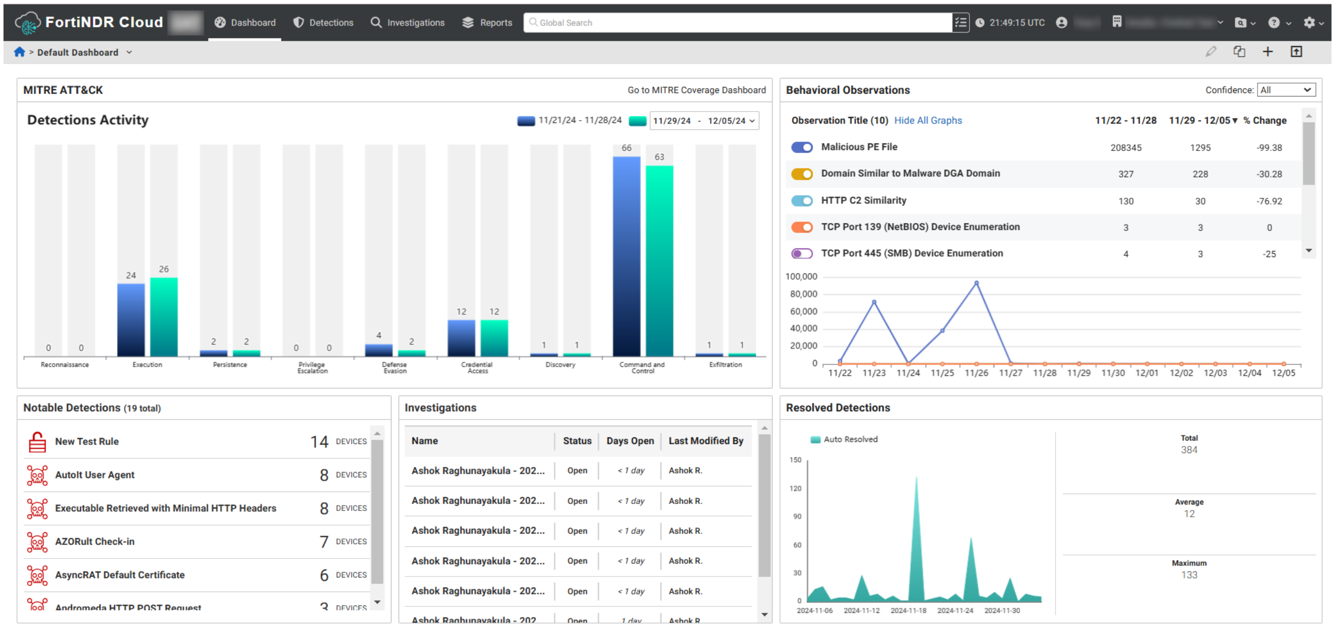
Key terms and concepts

Term	Definition
ATR	FortiGuard Applied Threat Research
Behavioral Observation	A *Behavioral Observation* is an output from a system that analyzes events and behaviors to identify potentially malicious activity (e.g., *Domain Similar to Malware DGA Domain* and *Malicious PE File*). Depending on your environment, not all Behavioral Observations indicate malicious activity. For example, if you recently created a new SSH server, then the *New SSH Server* observation is not malicious. See, Behavioral observations on page 57.
Detection	An alert mechanism that notifies you when a unique pair of events satisfy a detector. Detections allow you to quickly identify and respond to suspicious or known malicious activity in your network.

Term	Definition
Detection lifecycle	The status states of a detection (*Active*, *Muted*, or *Resolved*).
Detector	A query and other parameters used to detect something.
Dwell	Average time (in seconds) between when an incident was first seen and when it was resolved. See the *FortiNDR Cloud Detections Report* section in FortiNDR Cloud Detections Report on page 113.
Example	Example dashboards are custom dashboards created by Fortinet and shared with all customers, allowing users to view and use them within their own environments.
Five-tuple (5-tuple)	The source IP, source port, destination IP, destination port, and transport protocol. For more information, see Network events.
Flow	A collection of continuous packets having the same unique five-tuple (source IP, source port, destination IP, destination port, transport protocol) within a short time frame.
Indicators	An *indicator* is a field value extracted from a detection's event(s) as defined by the detector. This information is useful for identifying related activity and tracking indicators over time. Detectors can define up to five fields to extract indicators from, and each detection can store up to five unique indicators for each indicator field.
Mean Time To Detect (MTTD)	Average time (in seconds) between when an incident was first seen and when it was created in the system. See the *FortiNDR Cloud Detections Report* section in FortiNDR Cloud Detections Report on page 113.
Mean Time To Resolve (MTTR)	Average time (in seconds) between when an incident was created and when it was resolved. See the *FortiNDR Cloud Detections Report* section in FortiNDR Cloud Detections Report on page 113.
MITRE ATT&CK	*MITRE ATT&CK* is a knowledge base of threat behaviors relied upon by security professionals worldwide. You can map FortiGuard Lab detectors to MITRE ATT&CK, to enable visibility into the threat coverage provided by FortiNDR Cloud.
Tuning	The process of hiding known behaviors in a detector using one of the following three mechanisms: • *Muting*: Hides a detection but allows it to be created. Muted detections can be reviewed in bulk on a recurring basis. See Muting detectors. • *Excluding*: Prevents detections from ever being created. Excluded detections cannot be reviewed in bulk on a recurring basis. See Excluding devices. • *Filtering*: Tuned out everything else, (such as external entities and non-entity fields) by adding your own logic to detectors authored by FortiGuard Labs to customize the detector to your network. See Adding filters to detectors.

Dashboard

The *Default Dashboard* provides visibility into detection activity and investigation status. The widgets display recent observations, detection trends, severe threats, investigation updates, and resolved issues over time. Each widget includes interactive features for filtering data and exploring details.



Behavioral Observations

Confidence: All

Observation Title (10) Hide All Graphs	11/22 - 11/28	11/29 - 12/05 ▾	% Change
Malicious PE File	208345	1295	-99.38
Domain Similar to Malware DGA Domain	327	228	-30.28
HTTP C2 Similarity	130	30	-76.92
TCP Port 139 (NetBIOS) Device Enumeration	3	3	0
TCP Port 445 (SMB) Device Enumeration	4	3	-25

Notable Detections (19 total)

New Test Rule	14 DEVICES
AutoIt User Agent	8 DEVICES
Executable Retrieved with Minimal HTTP Headers	8 DEVICES
AZORult Check-in	7 DEVICES
AsyncRAT Default Certificate	6 DEVICES
Andromeda HTTP POST Request	3 DEVICES

Investigations

Name	Status	Days Open	Last Modified By
Ashok Raghunayakula - 202...	Open	< 1 day	Ashok R.
Ashok Raghunayakula - 202...	Open	< 1 day	Ashok R.
Ashok Raghunayakula - 202...	Open	< 1 day	Ashok R.
Ashok Raghunayakula - 202...	Open	< 1 day	Ashok R.
Ashok Raghunayakula - 202...	Open	< 1 day	Ashok R.
Ashok Raghunayakula - 202	Open	1 day	Ashok R.

Total
384

Average
12

Maximum
133

Widget	Description
MITRE ATT&CK	Displays detections organized by the MITRE ATT&CK® framework. Each detection activity includes two bars: the left shows the previous time period, and the right shows the current. • Click the dates at the top to filter by previous and current weeks • Hover over bars to view detection counts • Click bars to open the Detections Table Column names may vary depending on account coverage.
Behavioral Observations	Shows a scrollable table of behavioral observations from the past two weeks. • Click the widget title to open the *Behavioral Observations* page • Click an observation title to view details • Click column headers to sort • Hover over graph data points for details • Use *Hide All Graphs* and toggles to filter observations • Use the *Confidence* dropdown to filter by level (*All*, *High*, *Moderate*, *Low*) • Use the date picker to view data for any 90-day period in the past year

Widget	Description
Notable Detections	Displays active detections with the highest severity and detection count. The *New* and *Spike* labels highlight new detections and spikes in detection activity. • *New* indicates that there were no active detections during the baseline period (defined as 30 to 7 days ago), but at least one detection has occurred in the past 7 days. • *Spike* indicates that the number of active detections in the past 7 days is more than three times higher than the baseline count.
Investigations	Lists investigations with the most recent activity, sorted by *Last Modified*. • Click *Investigations* to open the *Investigations* page • Click an investigation name to view its details • Hover over *Last Modified By* or *Name* for more information
Resolved Detections	Shows daily counts of resolved detections over time, including *Total*, *Average*, and *Maximum*. • Click a data point or the *Total* count to view resolved detections in the *Detections Table*

IQL dashboards are only visible on accounts where users can run investigations.

Shared dashboards

When a user opens a shared dashboard with query charts, a new investigation is created in their own account. This ensures that:

- The query results shown are based on the current account's data, not the dashboard creator's.
- Clicking the chart title also opens the query inside the investigation specific to the current account.

When a user clones a dashboard that contains query charts, a new investigation is automatically created in the user's account for each query chart widget. This ensures that the cloned dashboard runs fresh queries and displays results based on the current account data. The investigation is independent of the original dashboard and tailored to the account.

Users with only the *Admin* role (and no additional roles like *User*) will not see dashboards that contain query charts. This ensures that only users with the appropriate permissions can access dashboards with query-based data.

Observation details

The *Observation Details* page provides detailed information about a selected observation. It includes a graph showing the frequency of occurrences and a table listing up to 1,000 recent instances.

- Use the date picker to view behavioral observations for any 90-day period within the past year.
- To view observation details for a device, enter the IP in the *Device to search* field.
- To filter the page by *Confidence*, select *All*, *H*, *M*, or *L* (Low, Moderate, or High).

Frequency of observation graph

The *Frequency of Observation* graph shows how often a specific observation has occurred over time, categorized by confidence level.

- Hover over the graph to view the number of instances by confidence level.
- To filter the table, click a confidence level (Low, Moderate, or High).
- Click on a bar in the graph to apply its time range and confidence filter to the page.
- Hover over a confidence level at the top of the graph to isolate it.

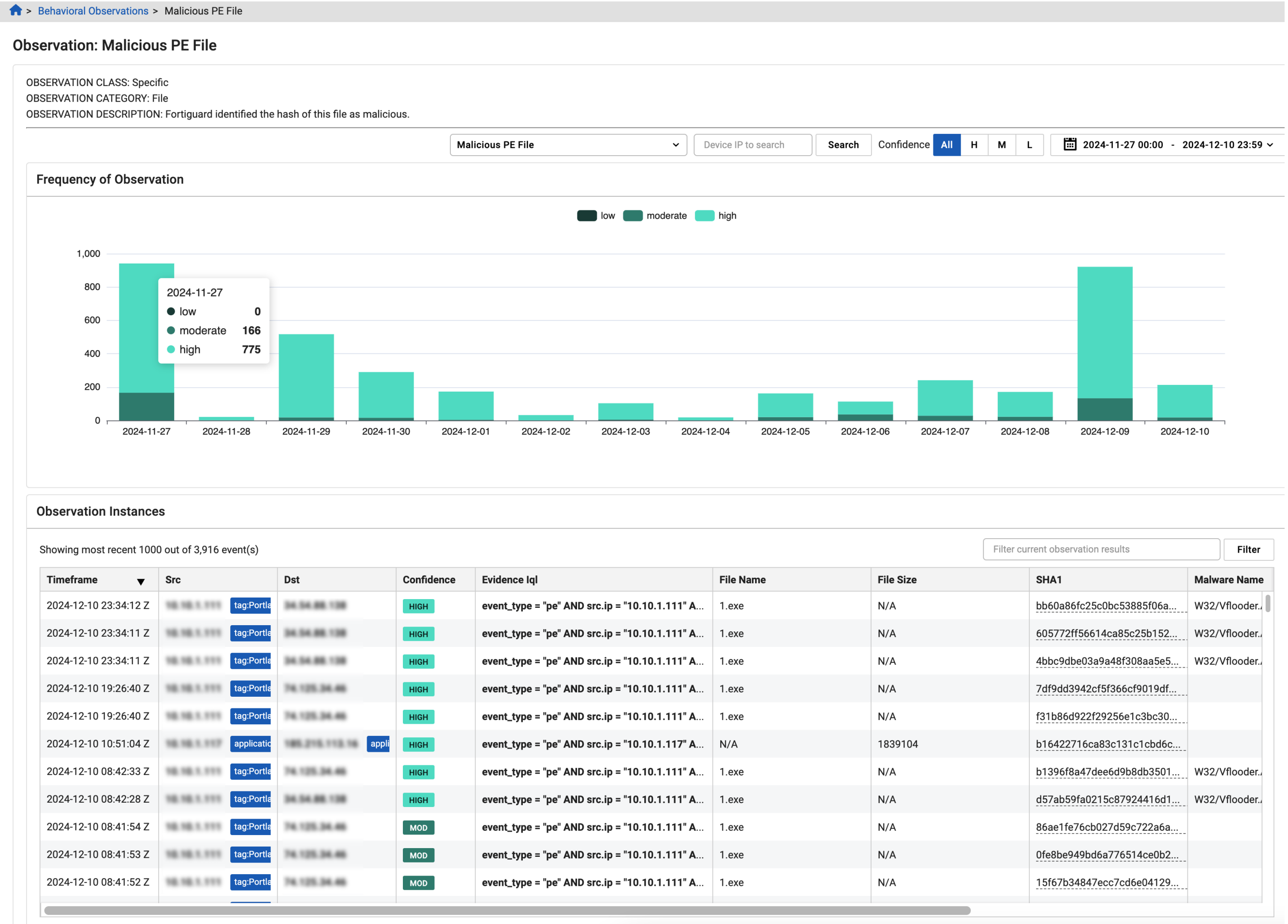
Observation instances table

The *Observation Instances* table displays the most recent instances for the selected observation, up to 1,000 entries.

- Click any column header to sort the table by that column.
- To refine the table, enter a search term in the *Filter current observation results* field and click *Filter*.

Observation selector

Use the observation selector at the top-center of the page to switch between different observations available for your account.



Observation: Malicious PE File

OBSERVATION CLASS: Specific
OBSERVATION CATEGORY: File
OBSERVATION DESCRIPTION: Fortiguard identified the hash of this file as malicious.

Frequency of Observation

Observation Instances

Showing most recent 1000 out of 3,916 event(s)

Timeframe ▼	Src	Dst	Confidence	Evidence Iql	File Name	File Size	SHA1	Malware Name
2024-12-10 23:34:12 Z	[redacted] tag:Portla	[redacted]	HIGH	event_type = "pe" AND src.ip = "10.10.1.111" A...	1.exe	N/A	bb60a86fc25c0bc53885f06a...	W32/Vflooder.
2024-12-10 23:34:11 Z	[redacted] tag:Portla	[redacted]	HIGH	event_type = "pe" AND src.ip = "10.10.1.111" A...	1.exe	N/A	605772ff56614ca85c25b152...	W32/Vflooder.
2024-12-10 23:34:11 Z	[redacted] tag:Portla	[redacted]	HIGH	event_type = "pe" AND src.ip = "10.10.1.111" A...	1.exe	N/A	4bbc9dbe03a9a48f308aa5e5...	W32/Vflooder.
2024-12-10 19:26:40 Z	[redacted] tag:Portla	[redacted]	HIGH	event_type = "pe" AND src.ip = "10.10.1.111" A...	1.exe	N/A	7df9dd3942cf5f366cf9019df...	
2024-12-10 19:26:40 Z	[redacted] tag:Portla	[redacted]	HIGH	event_type = "pe" AND src.ip = "10.10.1.111" A...	1.exe	N/A	f31b86d922f29256e1c3bc30...	
2024-12-10 10:51:04 Z	[redacted] applicatic	[redacted] appli	HIGH	event_type = "pe" AND src.ip = "10.10.1.117" A...	N/A	1839104	b16422716ca83c131c1cbd6c...	
2024-12-10 08:42:33 Z	[redacted] tag:Portla	[redacted]	HIGH	event_type = "pe" AND src.ip = "10.10.1.111" A...	1.exe	N/A	b1396f8a47dee6d9b8db3501...	W32/Vflooder.
2024-12-10 08:42:28 Z	[redacted] tag:Portla	[redacted]	HIGH	event_type = "pe" AND src.ip = "10.10.1.111" A...	1.exe	N/A	d57ab59fa0215c87924416d1...	W32/Vflooder.
2024-12-10 08:41:54 Z	[redacted] tag:Portla	[redacted]	MOD	event_type = "pe" AND src.ip = "10.10.1.111" A...	1.exe	N/A	86ae1fe76cb027d59c722a6a...	
2024-12-10 08:41:53 Z	[redacted] tag:Portla	[redacted]	MOD	event_type = "pe" AND src.ip = "10.10.1.111" A...	1.exe	N/A	0fe8be949bd6a776514ce0b2...	
2024-12-10 08:41:52 Z	[redacted] tag:Portla	[redacted]	MOD	event_type = "pe" AND src.ip = "10.10.1.111" A...	1.exe	N/A	15f67b34847ecc7cd6e04129...	

MITRE ATT&CK

The *MITRE ATT&CK Matrix* dashboard displays detection coverage based on detectors developed by FortiGuard Labs.

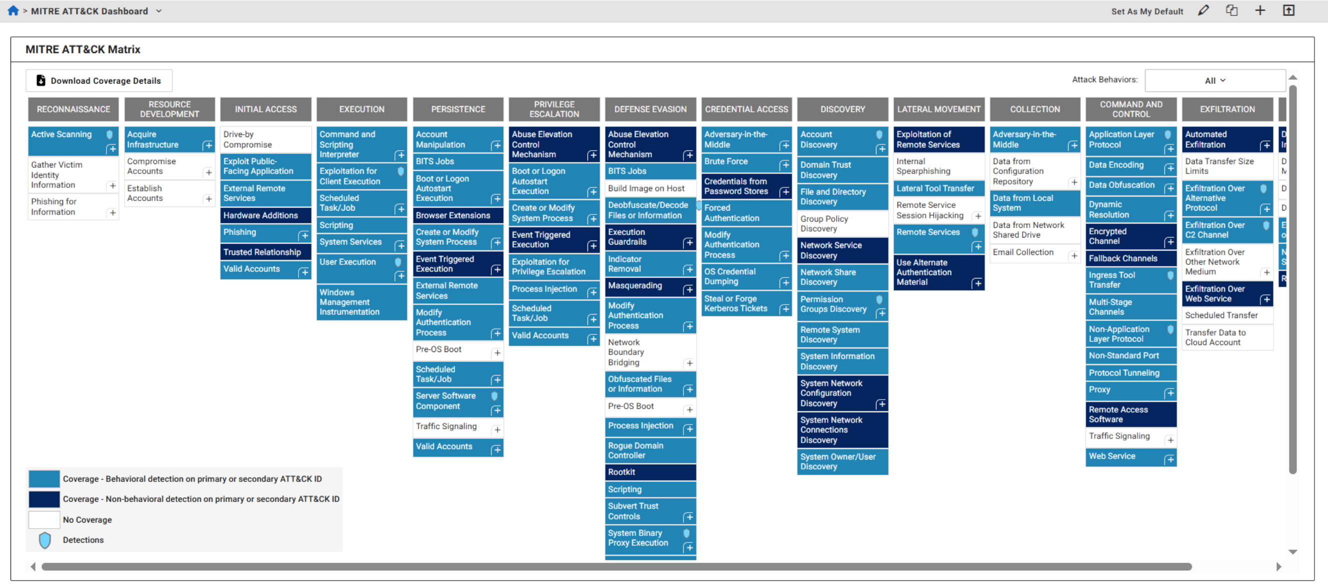
MITRE ATT&CK is a globally recognized knowledge base of threat behaviors and techniques used by security professionals to understand and respond to threats. FortiGuard Lab detectors can be mapped to MITRE ATT&CK to provide visibility into the threat coverage offered by FortiNDR Cloud.

The dashboard presents detections by behavior type (behavioral and non-behavioral) and by technique type (primary and secondary):

- *Primary Technique*: The main technique used to detect the behavior.
- *Secondary Technique*: A related technique that may not be directly observed on the network but is associated with the threat. This is not displayed in most cases.
  To view the secondary technique, click the plus (**+**) symbol in the bottom-right corner of a Primary Technique box.

Detection indicators

- A blue shield icon indicates active detections for a technique or sub-technique, and that you have permission to view them on the *Detections* page.
- An empty shield icon indicates that detections are resolved, but still viewable.
- Techniques shown as plain text either have no detections or you lack permission to view them.



RECONNAISSANCE	RESOURCE DEVELOPMENT	INITIAL ACCESS	EXECUTION	PERSISTENCE	PRIVILEGE ESCALATION	DEFENSE EVASION	CREDENTIAL ACCESS	DISCOVERY	LATERAL MOVEMENT	COLLECTION	COMMAND AND CONTROL	EXFILTRATION
Active Scanning	Acquire Infrastructure	Drive-by Compromise	Command and Scripting Interpreter	Account Manipulation	Abuse Elevation Control Mechanism	Abuse Elevation Control Mechanism	Adversary-in-the-Middle	Account Discovery	Exploitation of Remote Services	Adversary-in-the-Middle	Application Layer Protocol	Automated Exfiltration
Gather Victim Identity Information	Compromise Accounts	Exploit Public-Facing Application	Exploitation for Client Execution	BITS Jobs	Boot or Logon Autostart Execution	BITS Jobs	Brute Force	Domain Trust Discovery	Internal Spearphishing	Data from Configuration Repository	Data Encoding	Data Transfer Size Limits
Phishing for Information	Establish Accounts	External Remote Services	Scheduled Task/Job	Boot or Logon Autostart Execution	Create or Modify System Process	Build Image on Host	Credentials from Password Stores	File and Directory Discovery	Lateral Tool Transfer	Data from Local System	Data Obfuscation	Exfiltration Over Alternative Protocol
		Hardware Additions	Scripting	Browser Extensions	Event Triggered Execution	Deobfuscate/Decode Files or Information	Forced Authentication	Group Policy Discovery	Remote Service Session Hijacking	Data from Network Shared Drive	Dynamic Resolution	Exfiltration Over C2 Channel
		Phishing	System Services	Create or Modify System Process	Exploitation for Privilege Escalation	Execution Guardrails	Modify Authentication Process	Network Service Discovery	Remote Services	Email Collection	Encrypted Channel	Exfiltration Over Other Network Medium
		Trusted Relationship	User Execution	Event Triggered Execution	Process Injection	Indicator Removal	OS Credential Dumping	Network Share Discovery	Use Alternate Authentication Material		Fallback Channels	Exfiltration Over Web Service
		Valid Accounts	Windows Management Instrumentation	External Remote Services	Scheduled Task/Job	Masquerading	Steal or Forge Kerberos Tickets	Permission Groups Discovery			Ingress Tool Transfer	Scheduled Transfer
				Modify Authentication Process	Valid Accounts	Modify Authentication Process		Remote System Discovery			Multi-Stage Channels	Transfer Data to Cloud Account
				Pre-OS Boot		Network Boundary Bridging		System Information Discovery			Non-Application Layer Protocol	
				Scheduled Task/Job		Obfuscated Files or Information		System Network Configuration Discovery			Non-Standard Port	
				Server Software Component		Pre-OS Boot		System Network Connections Discovery			Protocol Tunneling	
				Traffic Signaling		Process Injection		System Owner/User Discovery			Proxy	
				Valid Accounts		Rogue Domain Controller					Remote Access Software	
						Rootkit					Traffic Signaling	
						Scripting					Web Service	
						Subvert Trust Controls						
						System Binary Proxy Execution						

Coverage - Behavioral detection on primary or secondary ATT&CK ID
Coverage - Non-behavioral detection on primary or secondary ATT&CK ID
No Coverage
Detections

Viewing the MITRE ATT&CK Matrix

To view the MITRE ATT&CK Matrix:

1. Click the *Dashboard* tab. Do one of the following:
   - At the top left-side of the page, click *Default Dashboard > MITRE ATT&CK Dashboard*.
   - In the *MITRE ATT&CK* widget, click *Go to MITRE Coverage Dashboard*.
2. Click the *Attack Behaviors* drop-down at the top-right of the dashboard to filter the dashboard by behaviors:
   - *All*
   - *Ransomware*
   - *Insider Threat*
   - *Cyber Espionage*
3. Click a technique in the table. A summary of the technique is displayed.

Column	Description
Tactic	The tactic of the behavior.
Coverage	The coverage status of the technique and the sub-techniques.

Column	Description
Name	The behavior name.
ID	ID number of the technique and the sub-techniques. For techniques and sub-techniques with active detections (indicated by a blue shield icon), the ID number is a hyperlink that directs you to the *Detections* page.

To download the coverage details:

- Click the *Download Coverage Details* button to download the coverage details as a CSV file which contains the *Date Updated*, *Name*, *Primary Attack ID*, *Secondary Attack ID* and *Description*.

Creating custom dashboards

Combine widgets to build custom dashboards tailored to your needs. These dashboards automatically refresh approximately every five minutes.

You can also set a custom dashboard as your default view. To switch between dashboards, click the *Default Dashboard* dropdown in the toolbar at the top-left corner of the page.

To create a custom dashboard:

1. Click the *Dashboard* tab.
2. In the toolbar at the top- right corner of the page, click the plus symbol (+). The *Create Dashboard* dialog opens.
3. In the *Name* field, enter a name for the dashboard and click *Create*.
4. Drag and drop the widgets onto the dashboard.
5. Arrange the widgets on the dashboard and click *Save*.
    - To move a widget, use the handle at the top-left of the widget to drag it.
    - To change the widget name, click the pencil icon.
    - To remove the widget from the dashboard, click the delete icon.

    - Each widget uses a different amount of space on the dashboard. Some widgets may not fit onto one dashboard.
    - Each widget has a default size. Some widgets cannot be condensed smaller than their default size.

6. Click *Save*.

To edit a custom dashboard

1. Click the *Dashboard* tab.
2. Click the *Default Dashboard* dropdon at the top-left corner of the page and select a dashboard from the list.
3. In the toolbar, click the edit icon.

4. Edit the dashboard and click *Save*. The dashboard is added to the *Default Dashboard* drop down.

You cannot edit the default dashboard.

To copy a dashboard:

1. Click the *Dashboard* tab.
2. Click the *Default Dashboard* dropdown at the top-left corner of the page and select a dashboard from the list.
3. In the toolbar, click the copy icon. The *Copy Dashboard* dialog opens.
4. In the *Name* field, enter a new name for the dashboard.
5. In the *Account* drop down, select where the dashboard will appear in the menu.
6. Click *Copy*.

To set a custom dashboard as the default:

1. Click the *Dashboard* tab.
2. Click the *Default Dashboard* menu at the top-left corner of the page and select a dashboard from the list.
3. In the toolbar, click *Set as My Default*.

Customs dashboards

Dashboard	Description
Devices At Risk	Displays a list of device IPs in ascending order by Risk Score. For information about how the Risk Score is calculated, see Risk score calculation on page 69.
Detections By Category	Displays detections by category and attack as a bar chart.
Detections By Severity	Displays the number of active detections and the severity as a pie chart.
Detections Over Time	Displays the number of detectors, and a graph of the active detections over time.
Detections Summary	Displays the number detections as a graph by severity.
Devices	Displays the total number of devices, external and internal traffic as a percentage, and a graph of visible devices.
Investigations	Displays investigations as list by *Name*, *Status*, *Days Open*, and *Last Modified by*.
MITRE ATT&CK Detections	Displays the MITRE ATT&CK detections activity.
Mitre Attack	Displays the MITRE ATT&CK matrix.

Dashboard	Description
Notable Detections	Displays the notable detections and descending order by number of devices affected. The *New* and *Spike* labels highlight new detections and spikes in detection activity. • *New* indicates that there were no active detections during the baseline period (defined as 30 to 7 days ago), but at least one detection has occurred in the past 7 days. • *Spike* indicates that the number of active detections in the past 7 days is more than three times higher than the baseline count.
Observations	Displays a list of the observations for the previous two weeks as a scrollable table.
Query Chart	Displays data from saved *Group By* queries created in *Investigations*. You can customize the widget by selecting a time range, choosing a chart type or table view, and assigning a custom name. To update the data, click the *Refresh* button. You can also download the displayed data as a CSV file.
Sensors	Displays the number of online and offline sensors, as well the number of errors and degraded sensors. A graph displays the *Total Traffic Captured*, as well as the number of *Events Per Second*, *Visible Devices* and *Bandwidth Usage*.
Sensors Throughput	Displays the sensors throughput as bar chart that can be downloaded.
Traffic by Type	Displays the data in the *Events* tab in the *Sensor telemetry* page. You can click the widget header to pivot to the *Sensor telemetry* page.. All the filters applied to the widget will be transferred to the Sensor Telemetry page.

Detections

FortiNDR Cloud *Detections* is an alert mechanism that notifies you when events matching a specific criteria appear in your account. Detections allow you to quickly identify and respond to suspicious or known malicious activity in your network.

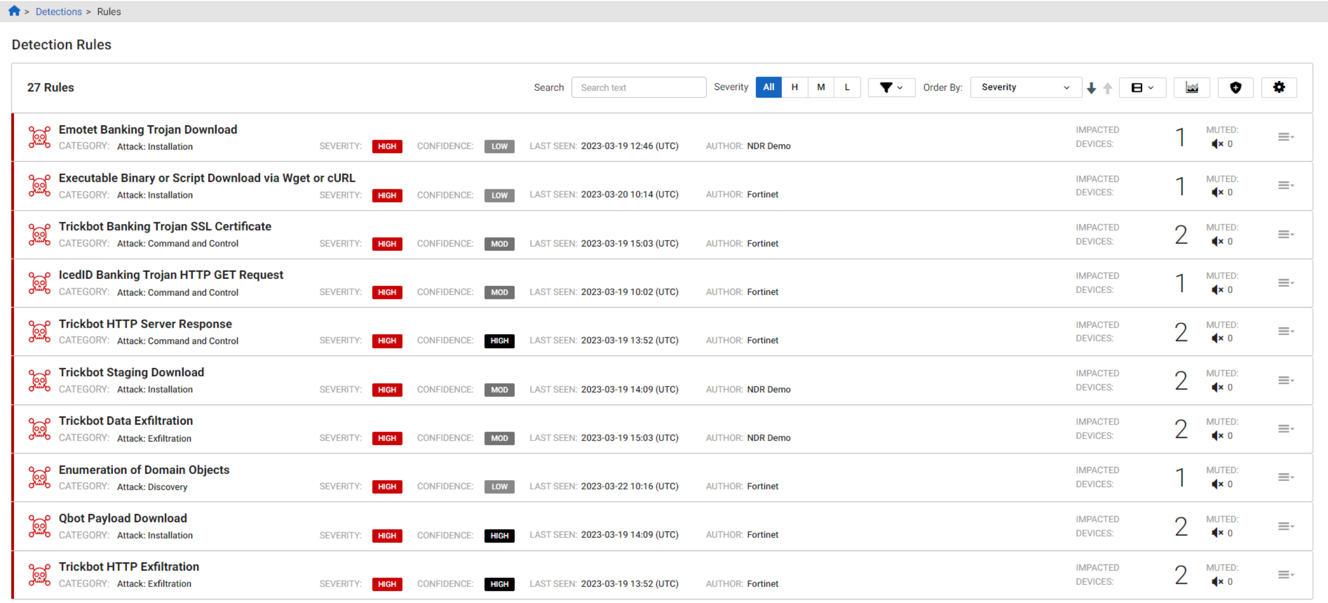
The *Detections* page displays a list of *Detectors* with active *Detections* in your account.

- A *Detector* is the query and parameters used to identify activity in the network.
- A *Detection* is the actual occurrence of activity satisfying a detector.

Each row in the page displays a single detector with at least one active detection.

A Detection is created when an event matches a detector's query. Detections are identified based on both the IP address and the Sensor ID to avoid issues with overlapping IP space. A duplicate detection is not generated if a detection already exists for the IP address and sensor ID pair. Instead, the *Last Seen* timestamp is updated and the event is added to the detector's latest events. This also resets the counter for the detection's *Resolution Period* if detections for the detector are set to resolve automatically.

By default the *Detections* page displays all *Active* detectors in your account. Once all detections for a detector are resolved or muted, the detector's status is automatically updated from *Active* to *Idle*. You can create a filter to view all detectors and detections regardless of their status.



Detection Rules

27 Rules

	CATEGORY:	SEVERITY:	CONFIDENCE:	LAST SEEN:	AUTHOR:	IMPACTED DEVICES:	MUTED:
Emotet Banking Trojan Download	Attack: Installation	HIGH	LOW	2023-03-19 12:46 (UTC)	NDR Demo	1	0
Executable Binary or Script Download via Wget or cURL	Attack: Installation	HIGH	LOW	2023-03-20 10:14 (UTC)	Fortinet	1	0
Trickbot Banking Trojan SSL Certificate	Attack: Command and Control	HIGH	MOD	2023-03-19 15:03 (UTC)	Fortinet	2	0
IcedID Banking Trojan HTTP GET Request	Attack: Command and Control	HIGH	MOD	2023-03-19 10:02 (UTC)	Fortinet	1	0
Trickbot HTTP Server Response	Attack: Command and Control	HIGH	HIGH	2023-03-19 13:52 (UTC)	Fortinet	2	0
Trickbot Staging Download	Attack: Installation	HIGH	MOD	2023-03-19 14:09 (UTC)	NDR Demo	2	0
Trickbot Data Exfiltration	Attack: Exfiltration	HIGH	MOD	2023-03-19 15:03 (UTC)	NDR Demo	2	0
Enumeration of Domain Objects	Attack: Discovery	HIGH	LOW	2023-03-22 10:16 (UTC)	Fortinet	1	0
Qbot Payload Download	Attack: Installation	HIGH	HIGH	2023-03-19 14:09 (UTC)	Fortinet	2	0
Trickbot HTTP Exfiltration	Attack: Exfiltration	HIGH	HIGH	2023-03-19 13:52 (UTC)	Fortinet	2	0

The *Detections* page displays the following information:

Name	The detector name.
Category	There are three categories for detectors: *Attack*, *Potentially Unwanted Application (PUA)*, and *Posture*. Each category contains a more detailed subcategory. For more information, see Detector Categories.

<table>
<tr><td><b>Severity</b></td><td>The severity measures the potential impact to the confidentiality, integrity, or availability of information systems and resources if the activity is confirmed to be a true positive. Severity can be assigned to one of the following values:
<table>
<tr><th>Severity</th><th>Description</th><th>Examples</th></tr>
<tr><td><b>High</b></td><td>Significant to fair impact with the potential to spread or escalate</td><td>Malicious code execution, C2 communications, lateral movement, data exfiltration.</td></tr>
<tr><td><b>Moderate</b></td><td>Fair impact with minimal potential to spread or escalate</td><td>Activity that could indicate malicious intent, untargeted attacks with unknown success, data leakage, subversion of security or monitoring tools</td></tr>
<tr><td><b>Low</b></td><td>Little to no impact expected</td><td>Potentially unauthorized software, devices, or resource use, untargeted adware or spyware, compromise of a personal device or device on an untrusted network, insecure configurations</td></tr>
</table>
</td></tr>
<tr><td><b>Confidence</b></td><td><i>Confidence</i> measures how likely events matching the detector’s query are indicative of the activity specified in the detector description. A detector's confidence indicates its minimum true-positive detection rate.
<table>
<tr><th>Confidence</th><th>Minimum True-Positive Rate</th></tr>
<tr><td><b>High</b></td><td>90%</td></tr>
<tr><td><b>Moderate</b></td><td>75%</td></tr>
<tr><td><b>Low</b></td><td>50%</td></tr>
</table>
FortiGuard Lab assigns a detector's initial confidence based on its performance during testing. Once deployed, detectors are monitored for changes in their true-positive detection rate, which is based on the resolution state chosen by an analyst when resolving a detection. Once a detector crosses a higher or lower threshold, it is reviewed to determine whether it should be tuned or whether the confidence should be modified.</td></tr>
<tr><td><b>Last Seen</b></td><td>The UTC date and time when the last known event tied to the detector was observed. This is useful when determining when the most recent change to a detector has occurred.</td></tr>
<tr><td><b>Author</b></td><td>The account that authored the detector.</td></tr>
<tr><td><b>Impacted Devices</b></td><td>The internal IP address in the <code>src.ip</code> or <code>dst.ip</code> fields used to generate</td></tr>
</table>

<table>
<tr><td></td><td>detections. This field is configurable.</td></tr>
<tr><td><b>Status</b></td><td>By default, every detection is in an <i>Active</i> state upon creation. <i>Active</i> detections generate a notification (see Email notifications on page 118), but <i>Muted</i> detections will not. Detections remain <i>Active</i> until they are resolved manually by an analyst or automatically based on the detector's <i>Resolution Period</i>. Once resolved, their status changes to <i>Resolved</i>.
<table>
<tr><th>Detection State</th><th>Description</th></tr>
<tr><td><b>Active</b></td><td>When an event matching a detector is observed, a detection is generated and set to <i>Active</i> by default. A notification is triggered for Active detections.</td></tr>
<tr><td><b>Muted</b></td><td>When an event matching a detector is observed, but some aspect of it is muted. A notification is <i>not</i> triggered for muted detections.</td></tr>
<tr><td><b>Resolved</b></td><td>When a detection is resolved, either manually by an analyst or automatically, and is no longer Active.</td></tr>
</table>
</td></tr>
</table>

Detector Categories

Category	Subcategory	Description
Attack	Infection Vector	Attacks in the initial stages before an exploit attempt has been made or malicious code has been executed. Examples include downloading a malicious executable file, navigating to a web site that is known to redirect to exploitation servers, or an attempt to authenticate to an SSH server from a malicious host.
Attack	Exploitation	Attacks in the process of exploiting known vulnerabilities such as those listed in MITRE’s Common Vulnerabilities and Exposures (CVE) list. While FortiNDR Cloud may be unable to determine the success of a launched exploit, any hosts attempting exploits (that are not approved internal scanners) should be investigated for signs of compromise.
Attack	Installation	Installation of malicious software (staging) for persistence in an environment. For example, the Cobalt Strike staging tool downloading a Beacon backdoor over HTTP in order to provide persistence on a compromised host and run further post-exploitation commands.
Attack	Lateral Movement	Tools and techniques commonly used by attackers to pivot from a compromised host to other assets within the environment. Such tools may also be legitimately used by system administrators but should be investigated, especially for hosts from which this activity has not been observed before.

Category	Subcategory	Description
Attack	Command and Control	Command and control traffic between compromised hosts and attacker infrastructure.
Attack	Exfiltration	Data exfiltration from compromised assets to external entities.
Attack	Discovery	Tools and techniques commonly used by attackers to identify accesible hosts and services. Such tools may also be legitimately used by system administrators but should be investigated, especially for hosts from which this activity has not be observed before.
Attack	Impact	Malware or behavior intended to disrupt the business, such as distributed denial of service (DDoS) and ransomware attacks.
PUA	Adware	Malware characterized by its use of advertisements to generate revenue for the author. Adware is often installed alongside third-party applications and remains on a system as a browser add-on or self-proclaimed optimization software. Most adware is considered low risk due to its innocuous nature.
PUA	Spyware	Malware characterized by its focus on gathering device and user information without the user’s knowledge. This information is usually sent back to the authors for a variety of purposes, ranging from market research to targeted monitoring. Spyware is usually installed alongside third-party applications and persists on a system as a backdoor or as software that purports to be useful. Most spyware is considered low risk due to its historical use for low-impact data collection and advertising.
PUA	Unauthorized Resource Use	Applications that utilize system resources without a user’s knowledge or consent. Such applications are usually installed alongside third-party applications or as a component of malware in order to monetize a successfully compromised host (for example, via click fraud or cryptocurrency mining).
Posture	Potentially Unauthorized Software of Device	Applications or devices that circumvent organizational policies or increase the attack surface of an organization. These detectors cover various applications that may be used to bypass monitoring tools and access controls, or store sensitive information in unauthorized locations. This category also includes tools that may be legitimately used for system administration, development, or penetration testing, but are also commonly used by attackers to enumerate access and pivot within a compromised environment.
Posture	Insecure Configuration	Configurations within an environment that make it more vulnerable to exploitation or post-exploitation techniques used by attackers. Such configurations include outdated software, use of deprecated cryptographic standards, or configurations resulting in data leakage.
Posture	Anomalous Activity	Network activity that is abnormal and should be investigated to determine its cause. The activity may be malicious in nature or a misconfiguration that may or may not have security implications.

Triage detections

The *Triage detections* view is the landing page for the *Detections* tab. Use this view to review and respond to detections triggered by the detector.

To view the Triage detections page:

1. Go to *Detections* > *Triage detections*. The *Detections* page opens.
2. (Optional) Filter the detections on the page.

<table>
<tr><td><b>Search</b></td><td>Enter the technique ID, technique name or technique description.
Detectors are filtered based on the prefix matching the selected technique ID. If Technique T1234 is entered, the detectors returned include its sub-techniques T1234.001, T1234.002, T1234.003, etc.</td></tr>
<tr><td><b>Severity</b></td><td>Select High (<b>H</b>), Medium (<b>M</b>), or Low (<b>L</b>).</td></tr>
<tr><td><b>Additional Filters</b></td><td>Click the filter icon to view additional filters.
<table>
<tr><th>Filter</th><th>Description</th></tr>
<tr><td><b>Category</b></td><td>Filter the detectors by category. See, Detector Categories.</td></tr>
<tr><td><b>Assigned to</b></td><td>Filter by assigned detections. See, Assigning detections on page 61.</td></tr>
<tr><td><b>Created By</b></td><td>Filter by the account that created the detector.</td></tr>
<tr><td><b>Sensors</b></td><td>Filter by one or more sensors.</td></tr>
<tr><td><b>Technique</b></td><td>Filter by the technique used for the detection.</td></tr>
<tr><td><b>Confidence</b></td><td>Select High (<b>H</b>), Medium (<b>M</b>), or Low (<b>L</b>).</td></tr>
<tr><td><b>Detection Status</b></td><td>Select <i>All</i>, <i>Active</i> or <i>Idle</i>.
<table>
<tr><td><b>All</b></td><td>Returns all detections the user has access to regardless of whether or not it was triggered in the current account.</td></tr>
<tr><td><b>Active</b></td><td>Returns all active detections.</td></tr>
<tr><td><b>Idle</b></td><td>Returns all detections that have been triggered in the current account but are not currently active.</td></tr>
</table>
</td></tr>
</table>
</td></tr>
</table>

Filter	Description
Muted	Select *Unmuted* or *Muted*. See, Muting on page 34.
Disabled	Select *Enabled* or *Disabled*. See, Disabling detectors on page 37.

Order By	Order the detectors by *Impacted Devices*, *Muted Devices*, *Severity*, *Confidence*, *Category*, or *Last Seen*.

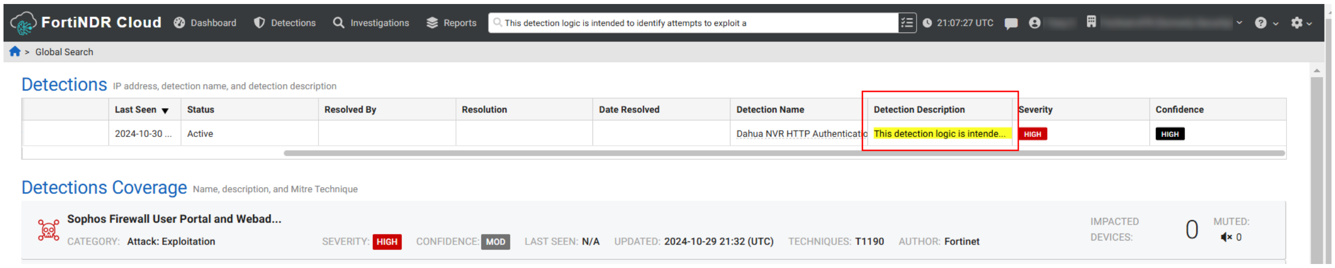
3. Click a detector to open the *Details* page. The following information is displayed:

Category	The attack category.
First Seen	The UTC date and time the first event associated with the detection occurred.
Last Seen	The UTC date and time of the last known event tied to the detector was observed.
Updated	The UTC date and time the detector was modified.
Resolution Method	• *Automatic*: The detection will be resolved if events containing the same host and sensor ID are not observed for the specified time period. • *Manual*: The detection will remain active until an analyst resolves the detection.
MITRE ATT&CK	The MITRE ATT&CK ID.
Primary Technique	The primary attack name and ID.
Specificity	
Behaviors	The behavior coverage.
Description	A description of the detection. You can use this description to search for detections. See, Search for detections with the detector description on page 31
Next Steps	Recommendations to resolve the detection.
Show Matching Events	Click to view the *Entity Lookup*.
Author	The detector author.
Impacted Device Field	The fields used to generate the detection. The internal IP address in the `src.ip` or `dst.ip` fields is the default.
Indicator Fields	The indicators the detector uses to generate the detection.

	This information is useful for identifying related activity and tracking indicators over time. Detectors can define up to five fields to extract indicators from, and each detection can store up to five unique indicators for each indicator field.
Impacted devices	The active detections for the detector. All Active defections are displayed by default. You can create a filter to view Muted or Resolved detections. See, Impacted Devices on page 32. You can use this tab to resolve detections or to search for a device by IP.
Query	This tab displays the IQL query defined for the detector. You can use a query string to create a custom detector. See, Adding custom filters to a detector query on page 33.
Events	This tab displays all of the events that have matched the detector's query. • Left-click on an entity to open the *Entity Panel*. • Right-click a field to open its menu (for example, *Search Events*, *Targeted Search* and *Copy to Clipboard*). • Hover a column header to lock, sort or arrange the columns. These events are duplicates of the original matching event. When an event matches a detector's query, a copy is created and added to the detector's list of Latest Events so the event remains associated with the detector. This list can display up to the last 1000 matching events. Events could remain in the list in perpetuity if the detector rarely fires.
Indicators	This tab displays the field value extracted from a detection's event(s) as defined by the detector. This information is useful for identifying related activity and tracking indicators over time. Detectors can define up to five fields to extract indicators from and each detection can store up to five unique indicators for each indicator field.
Detections Graph	The *Detections Graph* plots a detector's detection volume over time. If a posture-related detector fires constantly, the graph will help show whether the issue is improving or worsening over time.

Search for detections with the detector description

You can use text of the detector description to search for detections. Copy and paste the description text into and *Global Search* field and click Enter. Search results will be highlighted in the *Detection Description* column of the in the Detections section of results.



This detection logic is intended to identify attempts to exploit a

Global Search

Detections IP address, detection name, and detection description

	Last Seen ▼	Status	Resolved By	Resolution	Date Resolved	Detection Name	Detection Description	Severity	Confidence
	2024-10-30 ...	Active				Dahua NVR HTTP Authenticatio	This detection logic is intende...	HIGH	HIGH

Detections Coverage Name, description, and Mitre Technique

Sophos Firewall User Portal and Webad...
CATEGORY: Attack: Exploitation SEVERITY: HIGH CONFIDENCE: MOD LAST SEEN: N/A UPDATED: 2024-10-29 21:32 (UTC) TECHNIQUES: T1190 AUTHOR: Fortinet IMPACTED DEVICES: 0 MUTED: 0

Impacted Devices

Column	Description
Device IP	The device IP address.
DHCP Hostname	The DHCP lease hostname.
Username	The device username.
Hostname	The device hostname.
MAC Address	The device MAC address
Lifetime Events	The number of events over the device lifetime. Click the link to drill down to the earliest events.
Indicators	The number of indicators of compromise. Click the link to view the indicators associated with the device IP.
First Seen	The date the event was first seen.
Last Seen	The date the event was last seen.
Created	The date the event was created.
Updated	The date the event was updated.
Sensor ID	The sensor ID. Hover over the ID to view the sensor information and annotations. Tags associated with the sensor are displayed within the column. Click the ID to open the *Sensor Details* page.
Account	The account the device belongs to.
Status	The detection status (*Active*, *Muted* or *Resolved*). See Detections on page 25.
Muted by	The user who muted the detector.
Date Muted	The date the detector was muted.
Resolved by	The user who resolved the detection.
Resolution	The resolution description.
Date Resolved	The date the detection was resolved.

Adding custom filters to a detector query

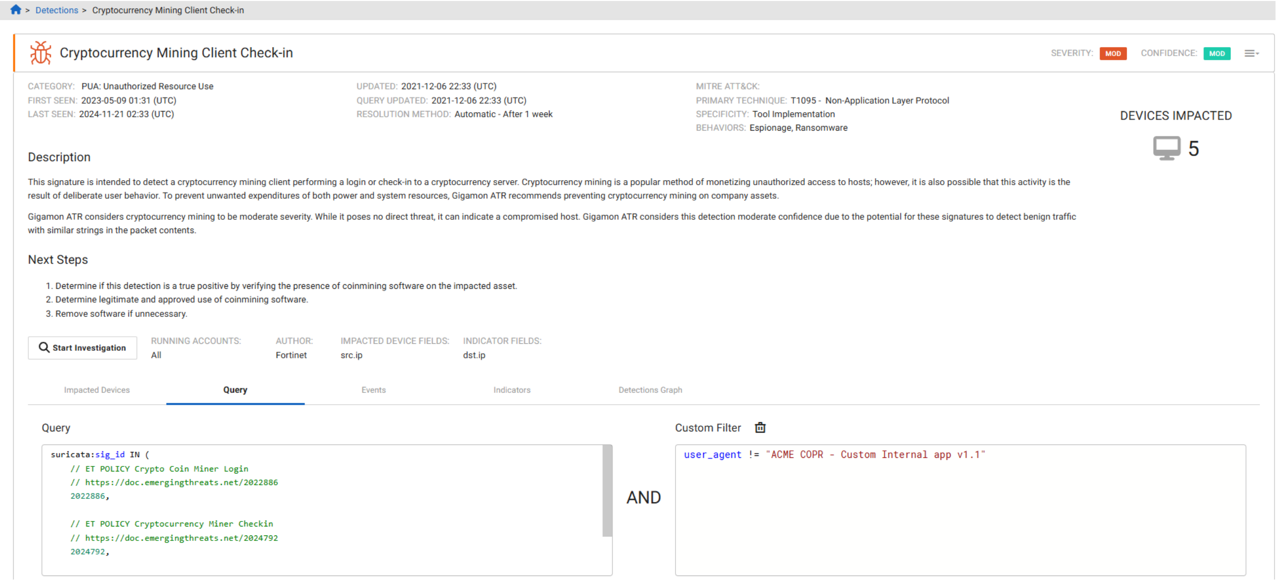
You can customize a detector authored by FortiGuard Labs by adding an additional layer of logic to a query. Filters extend the detection logic to account for differences specific to your network that muting and excluding do not account for.

To add a custom filter to a query:

1. Go to *Detections* > *Triage detections* and open the detector.
2. Click the *query* tab.
3. Click *Add a Customer Filter*.
4. In the *Custom Filter* pane, enter a valid IQL string.

> The query string needs to be true in addition to FortiGuard Labs's logic for a detection to be created. Similar to excluding, no detection will be created if an event is filtered by your custom logic.

The example below excludes traffic using a custom, internally defined `UserAgent` string.



Cryptocurrency Mining Client Check-in

SEVERITY: MOD CONFIDENCE: MOD

CATEGORY: PUA: Unauthorized Resource Use
FIRST SEEN: 2023-05-09 01:31 (UTC)
LAST SEEN: 2024-11-21 02:33 (UTC)

UPDATED: 2021-12-06 22:33 (UTC)
QUERY UPDATED: 2021-12-06 22:33 (UTC)
RESOLUTION METHOD: Automatic - After 1 week

MITRE ATT&CK:
PRIMARY TECHNIQUE: T1095 - Non-Application Layer Protocol
SPECIFICITY: Tool Implementation
BEHAVIORS: Espionage, Ransomware

DEVICES IMPACTED
5

Description

This signature is intended to detect a cryptocurrency mining client performing a login or check-in to a cryptocurrency server. Cryptocurrency mining is a popular method of monetizing unauthorized access to hosts; however, it is also possible that this activity is the result of deliberate user behavior. To prevent unwanted expenditures of both power and system resources, Gigamon ATR recommends preventing cryptocurrency mining on company assets.

Gigamon ATR considers cryptocurrency mining to be moderate severity. While it poses no direct threat, it can indicate a compromised host. Gigamon ATR considers this detection moderate confidence due to the potential for these signatures to detect benign traffic with similar strings in the packet contents.

Next Steps

1. Determine if this detection is a true positive by verifying the presence of coinmining software on the impacted asset.
2. Determine legitimate and approved use of coinmining software.
3. Remove software if unnecessary.

RUNNING ACCOUNTS: All
AUTHOR: Fortinet
IMPACTED DEVICE FIELDS: src.ip
INDICATOR FIELDS: dst.ip

Query

```
suricata:sig_id IN (
    // ET POLICY Crypto Coin Miner Login
    // https://doc.emergingthreats.net/2022886
    2022886,

    // ET POLICY Cryptocurrency Miner Checkin
    // https://doc.emergingthreats.net/2024792
    2024792,
```

AND

Custom Filter

```
user_agent != "ACME COPR - Custom Internal app v1.1"
```

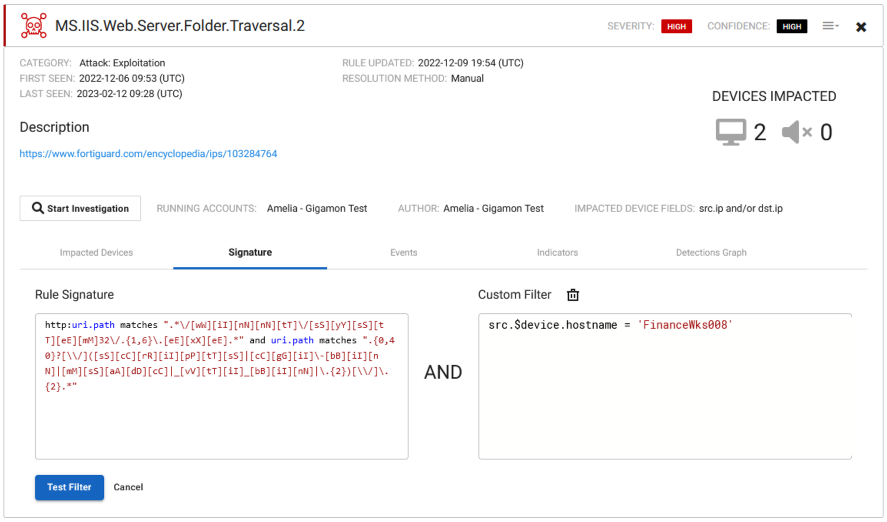
5. Click *Test Filter*.
6. Click *Save Filter* to apply your logic to the detector.

> To modify a custom query, click *Update Custom Filter* or click the delete icon above the *Custom Filter* pane.

Search for a device hostname in detections

A detector query does not allow for the inclusion of a device hostname in the detector logic. However, you can use a custom filter to search for a device by its hostname. For example, if there is a particular device hostname of interest in can be incorporated into a detector by creating a custom filter as shown below.

```
http:uri.path matches ". *W/[wN][iT][nN][nN][tT]V[ss][y~][ss][t T][eE](mM]32W/.(1,6}\. [eE][XX]
      [eE].** and uri.path matches ". {0,4 0}?[\/]([ss][cC][rR][it][pP][tT][sS]|[cc][gG][iTI\-
      (bIiI1ΓnN]| [mM][s5] [aA] [dD][cC]|_[W][tT][iI]_[bB][it][nN]|\.(2})[\V/]L.[2.*
```



MS.IIS.Web.Server.Folder.Traversal.2

SEVERITY: HIGH CONFIDENCE: HIGH

CATEGORY: Attack: Exploitation
FIRST SEEN: 2022-12-06 09:53 (UTC)
LAST SEEN: 2023-02-12 09:28 (UTC)

RULE UPDATED: 2022-12-09 19:54 (UTC)
RESOLUTION METHOD: Manual

DEVICES IMPACTED 2 0

Description
https://www.fortiguard.com/encyclopedia/ips/103284764

RUNNING ACCOUNTS: Amelia - Gigamon Test AUTHOR: Amelia - Gigamon Test IMPACTED DEVICE FIELDS: src.ip and/or dst.ip

Rule Signature

```
http:uri.path matches ".*\/[wW][iI][nN][nN][tT]\/[sS][yY][sS][t
T][eE][mM]32\/.{1,6}\.[eE][xX][eE].*" and uri.path matches ".{0,4
0}?[\\/]([sS][cC][rR][iI][pP][tT][sS]|[cC][gG][iI]\-[bB][iI][n
N]|[mM][sS][aA][dD][cC]|_[vV][tT][iI]_[bB][iI][nN]|\.{2})[\\/]\.
{2}.*"
```

AND

Custom Filter

```
src.$device.hostname = 'FinanceWks008'
```

Only the "=", "!=", and "IN" filter conditions are supported for device hostname filters. Filter conditions such as "LIKE" and "MATCH" are unsupported.

The current Entity Tracking System only analyzes DHCP records. A custom filter leveraging a device hostname will only be as accurate as the available DHCP information.

Muting

Muting allows you to ignore authorized and expected behaviors to identify anomalies for the specific host. When a detector is muted, any related detection will have a status of *Muted*. This means a notification will not be generated for the detection. A muted detection will auto-resolve after the specified time frame or can be resolved manually.

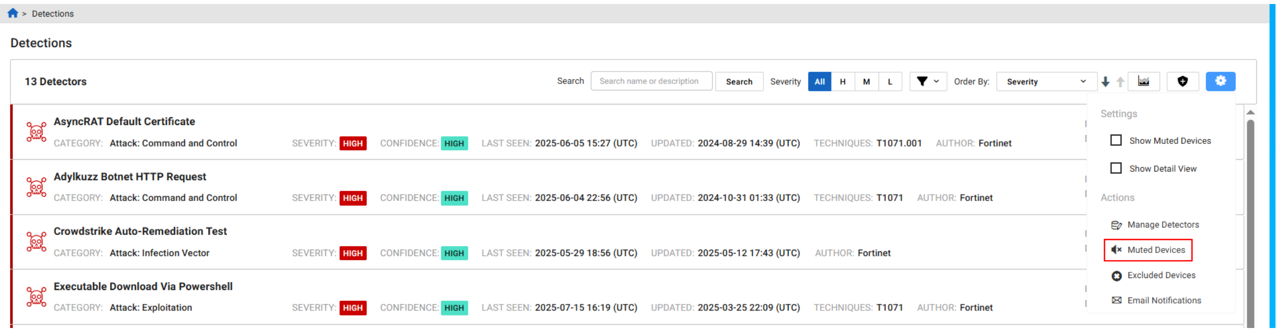
To view all muted devices, detectors, and detections, go to the Mutes and excludes on page 124.

Mute all detectors for a device

Muting a device for all detectors is most commonly used for devices like sandboxes and vulnerability scanners, which routinely trigger detections as part of their normal operation. Since these alerts are expected, muting such devices is often one of the first steps when configuring FortiNDR Cloud.

To mute a device for all detectors:

1. Click the *Detections* tab.
2. In the toolbar, click the gear icon at the right side of the page and select *Muted Devices*. The *Muted Devices* page opens.



Detections

13 Detectors

AsyncRAT Default Certificate
CATEGORY: Attack: Command and Control SEVERITY: HIGH CONFIDENCE: HIGH LAST SEEN: 2025-06-05 15:27 (UTC) UPDATED: 2024-08-29 14:39 (UTC) TECHNIQUES: T1071.001 AUTHOR: Fortinet

Adylkuzz Botnet HTTP Request
CATEGORY: Attack: Command and Control SEVERITY: HIGH CONFIDENCE: HIGH LAST SEEN: 2025-06-04 22:56 (UTC) UPDATED: 2024-10-31 01:33 (UTC) TECHNIQUES: T1071 AUTHOR: Fortinet

Crowdstrike Auto-Remediation Test
CATEGORY: Attack: Infection Vector SEVERITY: HIGH CONFIDENCE: HIGH LAST SEEN: 2025-05-29 18:56 (UTC) UPDATED: 2025-05-12 17:43 (UTC) AUTHOR: Fortinet

Executable Download Via Powershell
CATEGORY: Attack: Exploitation SEVERITY: HIGH CONFIDENCE: HIGH LAST SEEN: 2025-07-15 16:19 (UTC) UPDATED: 2025-03-25 22:09 (UTC) TECHNIQUES: T1071 AUTHOR: Fortinet

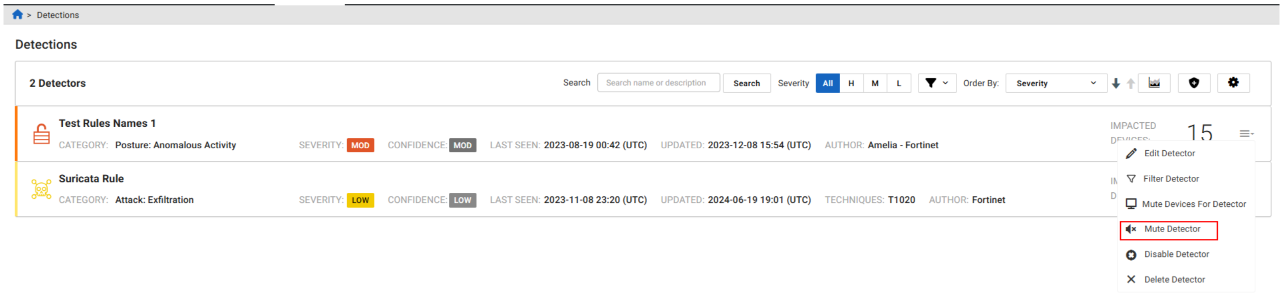
3. Click *Add New device Range*.
4. In the *Device IP or Range* field, enter an IP address or CIDR range.
5. Click *Add Device(s)*.

Mute a detector

Muting a detector will cause all its future detections to be muted, regardless of which device triggered the detector. This is commonly used for posture-aware detectors that identify approved or expected behavior.

To mute a detector:

1. Click the *Detections* tab.
2. Click the menu icon in the last column at the right-side of the page, and select *Mute Detector*.



Detections

2 Detectors

Test Rules Names 1
CATEGORY: Posture: Anomalous Activity SEVERITY: MOD CONFIDENCE: MOD LAST SEEN: 2023-08-19 00:42 (UTC) UPDATED: 2023-12-08 15:54 (UTC) AUTHOR: Amelia - Fortinet
IMPACTED DEVICES: 15

Suricata Rule
CATEGORY: Attack: Exfiltration SEVERITY: LOW CONFIDENCE: LOW LAST SEEN: 2023-11-08 23:20 (UTC) UPDATED: 2024-06-19 19:01 (UTC) TECHNIQUES: T1020 AUTHOR: Fortinet

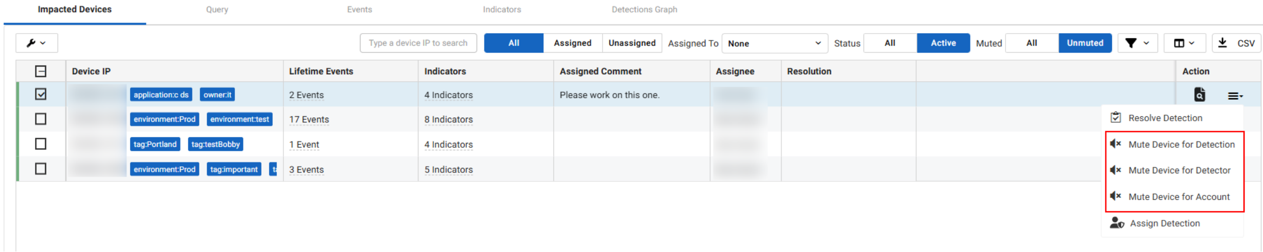
3. In the dialog that opens, enter a comment in the *Comments* field, and click *Mute Detector*.

Mute a device

You can mute a device for a detection, detector or an account. This is commonly used for suspicious behaviors from approved devices, such as remote access from an administrator workstation. Detections that contain a muted detector are appended with *Muted* in the *Status* of column of the *Detections Table*.

To mute a device:

1. Click the *Detections* tab and open a detector in the list.
2. In the *Impacted Devices* tab, select the detection that contains the device and detector.
3. Click the *Actions* menu at the right side of the page and select one of the following options.
    - *Mute Device for Detection*
    - *Mute Device for Detector*
    - *Mute Device for Account*



⊟	Device IP	Lifetime Events	Indicators	Assigned Comment	Assignee	Resolution		Action
☑	[redacted] application:c ds owner:it	2 Events	4 Indicators	Please work on this one.	[redacted]			
□	[redacted] environment:Prod environment:test	17 Events	8 Indicators		[redacted]			
□	[redacted] tag:Portland tag:testBobby	1 Event	4 Indicators		[redacted]			
□	[redacted] environment:Prod tag:important t	3 Events	5 Indicators		[redacted]			

4. In the dialog that opens, enter a comment in the *Comments* field, and click *Mute Detector*.

Alliteratively, you can go to *Detections* > *Detections Table*. In the *Action* column, click the menu and select *Mute device for detector*.

Viewing muted devices

Option	Description
Mutes and Excludes	1. Click the gear icon at the top-right of the page and select *Mutes and Excludes*. 2. Scroll down to the Muted Devices
Detections	1. Go to *Detections*. 2. Click the *Settings* menu ⚙ at the top-right of the page. 3. Under *Actions* select *Muted Devices*.
Detections Table	1. Go to *Detections* > *Detections Table*. 2. Click the column selector ◫ and show the *Device Muted* column

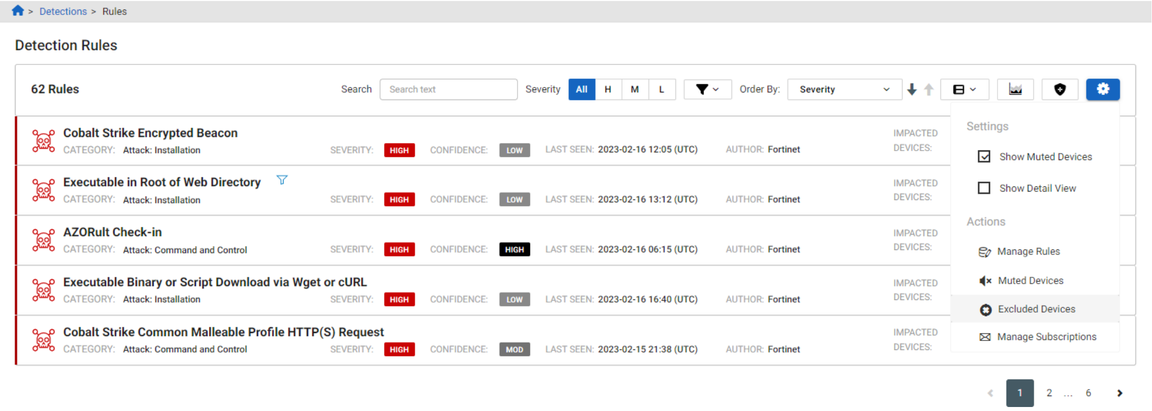
Excluding devices

You can exclude a device across all detectors. This is useful in devices that are meant to perform functions that look suspicious out of context.

We recommend muting devices rather than excluding to allow for auditing and to have detections to reference if needed.

To exclude devices:

1. Click the *Detections* tab.
2. In the toolbar, click the gear icon at the right side of the page and select *Excluded Devices*.



Cobalt Strike Encrypted Beacon
CATEGORY: Attack: Installation SEVERITY: HIGH CONFIDENCE: LOW LAST SEEN: 2023-02-16 12:05 (UTC) AUTHOR: Fortinet IMPACTED DEVICES:

Executable in Root of Web Directory
CATEGORY: Attack: Installation SEVERITY: HIGH CONFIDENCE: LOW LAST SEEN: 2023-02-16 13:12 (UTC) AUTHOR: Fortinet IMPACTED DEVICES:

AZORult Check-in
CATEGORY: Attack: Command and Control SEVERITY: HIGH CONFIDENCE: HIGH LAST SEEN: 2023-02-16 06:15 (UTC) AUTHOR: Fortinet IMPACTED DEVICES:

Executable Binary or Script Download via Wget or cURL
CATEGORY: Attack: Installation SEVERITY: HIGH CONFIDENCE: LOW LAST SEEN: 2023-02-16 16:40 (UTC) AUTHOR: Fortinet IMPACTED DEVICES:

Cobalt Strike Common Malleable Profile HTTP(S) Request
CATEGORY: Attack: Command and Control SEVERITY: HIGH CONFIDENCE: MOD LAST SEEN: 2023-02-15 21:38 (UTC) AUTHOR: Fortinet IMPACTED DEVICES:

3. Click *Add New device Range*.
4. In the *Device IP or Range* field, enter an IP address or CIDR range.
5. Click *Add Devices*

Disabling detectors

Disable a detector to exclude it from matching events. Disabling detectors is useful for posture-focused detectors that detect approved behavior

To disable a detector:

1. Go to *Detections*.
2. In the toolbar, click the gear icon at the right-side of the page and select *Manage Detectors*. The *Manage My Detectors* page opens.
3. In the *Actions* column, click the menu dropdown and select *Disable Detector*. A confirmation dialog opens.
4. Click *OK*.

Resolving detections

You can resolve a detection to change its state from *Active* and remove it from the default view.

FortiGuard Labs curates detection logic over time. When the resolution ratio shows a high rate of False Positives, FortiGuard Labs will take steps to determine what changes are necessary in order to increase detector performance.

Detection resolutions are your direct feedback line to FortiGuard Labs. We recommend resolving detections to improve the quality of the detectors you see.

To resolve a detection:

1. Click the *Detections* tab and open a detector in the list.
2. In the *Impacted Devices* tab, select the detection you want to resolve.
3. Click the *Actions* menu at the right side of the page and select *Resolve Detection*. The *Resolve <IP address>* dialog opens.
4. From the *Resolution* drop down, select one of the following options.

Resolution State	Description	Example
True Positive: Mitigated	The threat was investigated and resolved, contained, or removed.	Malware was discovered on a host.
True Positive: No Action	The threat has been acknowledged, however no action was taken to resolve it.	An analyst ran a post-exploit tool for testing purposes.
False Positive	The matched events don't represent the reported activity.	A query for malware C2 instead flagged web browser traffic to a common site.
Unknown	The status or veracity of the detection is unknown.	You have no idea what you're even looking at, nor what to do with it.

5. (Optional) In the *Comments* field, enter brief description of the resolution.
6. Click *Resolve detection*.
7. (Optional) To unresolve a detection, select *Unresolve Detection* from the action menu.

Resolving a detection does not delete the detection, it is simply removes it from the default view. Detections remain in your account in perpetuity and can be viewed or pulled via the API at any time.

To view resolved deflections, click the *Filter* button in the *Impacted Devices* tab on the detector page and select *Resolved Detections*.

To bulk resolve detections:

1. Click the *Detections* tab and open a detector in the list.
2. In the *Impacted Devices* tab, click the select all box in the first column of the table. The *Bulk Resolve* icon is displayed.
3. Click *Bulk Resolve Detections*.

4. In the Impacted Devices tab, click Bulk Resolve Detections. the Resolve X Detections dialog opens.
5. From the *Resolution* drop down, select one of the following options.

Resolution State	Description	Example
True Positive: Mitigated	The threat was investigated and resolved, contained, or removed.	Malware was discovered on a host.
True Positive: No	The threat has been acknowledged,	An analyst ran a post-exploit tool for

Resolution State	Description	Example
Action	however no action was taken to resolve it.	testing purposes.
False Positive	The matched events don't represent the reported activity.	A query for malware C2 instead flagged web browser traffic to a common site.
Unknown	The status or veracity of the detection is unknown.	You have no idea what you're even looking at, nor what to do with it.

6. (Optional) In the *Comments* field, enter brief description of the resolution.
7. Click *Resolve detections*.

Creating a detector

Create custom detectors using a unique query or from a saved query. Each account can store up to 50 detectors. If you reach this limit, an error message will appear. We recommend regularly reviewing your detectors to ensure they are still in use and deleting any that are no longer needed. To increase the detector limit for your account, please contact Customer Support.

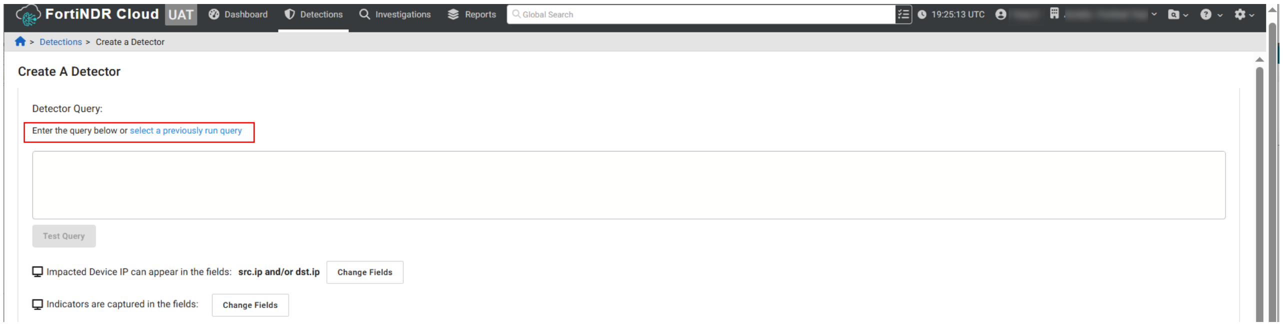
Before you create a detector, consider using a detector filter to customize a detector created by Fortinet. detector filters save time creating a new detector and help manage the number of detectors in your account. For information, see Adding custom filters to a detector query on page 33.

To create a new detector:

1. Click the *Detections* tab.
2. In the toolbar at the top-right of the page, click the shield icon. The *Create A Detector* page opens.
3. Enter a query in the text field and click *Test Query*.
4. Resolve any errors flagged by the system.
5. Configure the detector settings and click *Save Detector*.

To create a detector from an existing query:

1. Click the *Detections* tab.
2. In the toolbar at the top-right of the page, click the shield icon. The *Create A Detector* page opens.
3. Under Detector Query, click the hyperlinked text, *select a previously run query*. The *Select a New Query* page opens.



FortiNDR Cloud UAT Dashboard Detections Investigations Reports Global Search 19:25:13 UTC [redacted] [redacted]

Detections > Create a Detector

Create A Detector

Detector Query:

Enter the query below or select a previously run query

Test Query

Impacted Device IP can appear in the fields: **src.ip and/or dst.ip** Change Fields

Indicators are captured in the fields: Change Fields

4. Select a query from the *Saved Queries* or *Query History* tab and click *Select*. The query is added to the text field.
5. If necessary, edit the query, and click *Test Query*.Resolve any errors flagged by the system.
   You do not need to test the query if you do make any edits.
6. Configure the detector settings and click *Save Detector*.

Detector settings

Impacted Device IP can appear in the fields	Click Change Fields to select the specific fields you want to use to generate a detection. By default, any internal IP address in the `src.ip` or `dst.ip` fields will be used to generate detections.
Indicators are captured in the fields	Click *Change Fields* to add or remove an Indicator Field for a detector. You can choose up to five fields.
Name	Enter a name for the detector.
Severity	Choose *High*, *Moderate* or *Low*.
Confidence	Choose *High*, *Moderate* or *Low*.
Category	Click the drop down to select a category from the list.
Primary Technique	Enter the Primary Technique ID.
Secondary Technique	Enter the Secondary Technique ID.
Run on Accounts	When creating a detector on a parent account, enable *Current account and all children account* to run the detector on the current account and child accounts. When creating a detector on a child account, select *Move to parent (Account1) and run on parent and all children accounts* to run on the detector on all accounts (current, parent and children). This option is only available to customers with parent and child accounts. ⚠ These selections cannot be undone.
Data Sources	Enable/disable *Zeek*, *Fortinet*, *Zuricata*, or *Zscaler*.
Resolution Style	Select *Auto* or *Manual*.

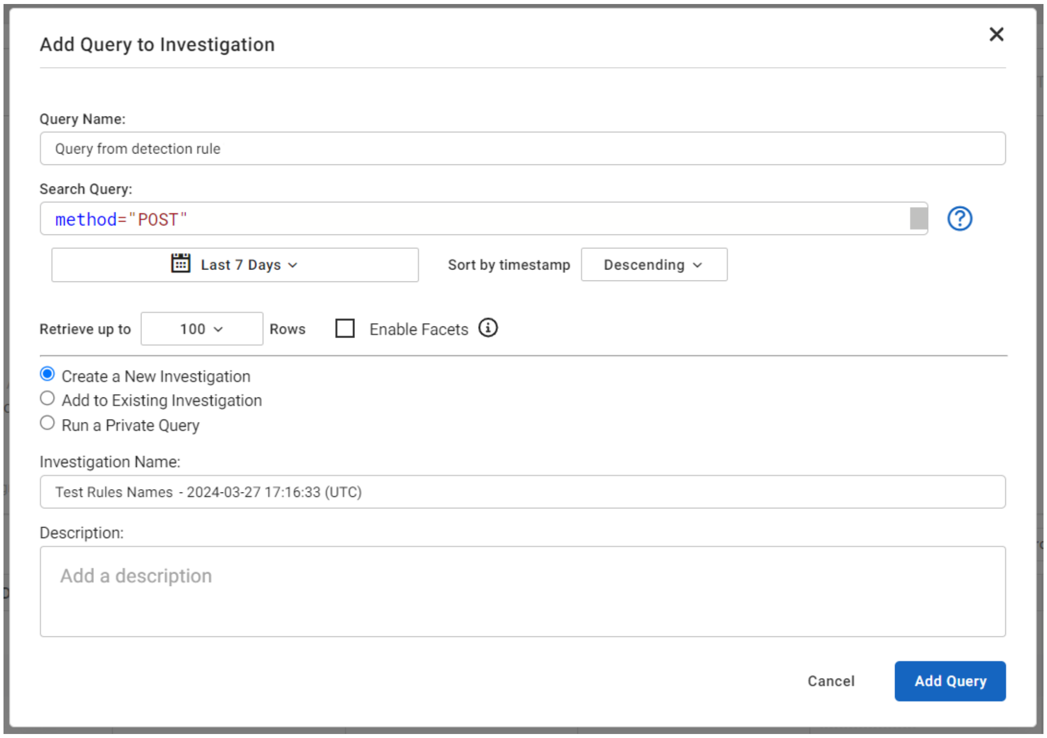
Automatic Resolution Period	Select *6 hours* to *1 Month*.

Start an investigation

To start an investigation:

1. Go to *Detections* > *Triage detections*. The *Detections* page opens.
2. Click a detector to open the *Details* page.
3. Click *Start Investigation*. The *Add Query* to Investigation dialog opens.

Query Name	Enter a name for the query.
Search Query	Enter the query string.
Last 7 Days	Click to set the data range to *Last Hour*, *Last 24 Hours*, *Last 7 days*, *Last 30 days*, *Last 60 days* or last *90 days*.
Sort by timestamp	Select *Ascending* or *Descending*.
Retrieve up to	Click to set the number of rows retrieved (*100*, *500*, *1000*, or *10,000*).
Create a New Investigation	Click to create a new investigation.
Add to Existing Investigation	The *Choose Investigation* dropdown is displayed. Select an investigation from the list.
Run a Private Query	Select this option to add a query to an adhoc search.
Investigation Name	Enter a name for the new investigation.
Description	Enter a short description of the new investigation.
Choose Investigation	



Add Query to Investigation

Query Name: Query from detection rule

Search Query:

```
method="POST"
```

Last 7 Days

Sort by timestamp: Descending

Retrieve up to 100 Rows

□ Enable Facets

● Create a New Investigation
○ Add to Existing Investigation
○ Run a Private Query

Investigation Name: Test Rules Names - 2024-03-27 17:16:33 (UTC)

Description: Add a description

4. Click *Add Query*.

Viewing related investigations

To view related investigations.

1. Click the *Detections* tab and select a detector from the list.
2. Click *View Related Investigations*. The Investigations page opens.

Running queries in a detection

Run a queryused by the detector for a detection.

To view a query in a detector:

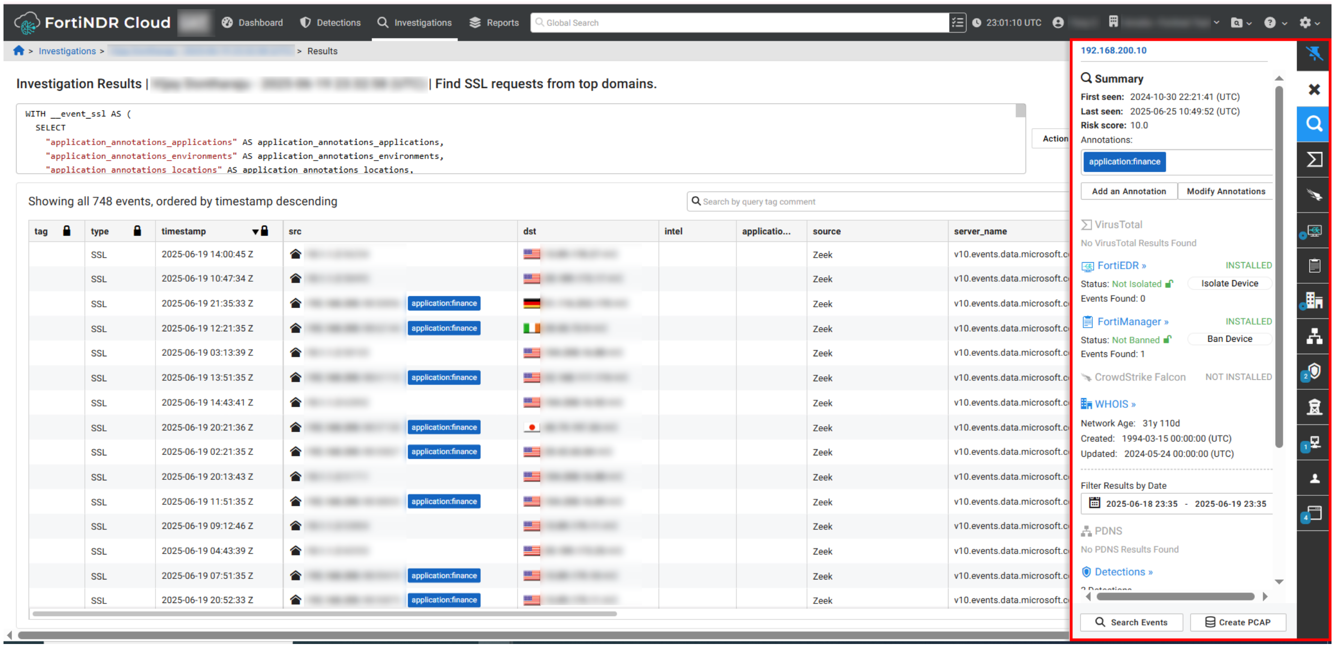
1. Click the *Detections* tab and open a detector in the list.
2. Click the *Events* tab.
3. In the *Timestamp* column, right-click an entry and select *Guided Queries*. The *Add Guided Query* page opens.
4. Click *Select* next to a query in the list.

Entity Panel

An *Entity* is a unique identifier on the network. FortiNDR Cloud supports IP addresses and domains as entities. Entities are extracted from event data and cataloged in their own data store.

The *Entity Panel* displays the contextual information collected for an entity from within and outside the network. To access the *Entity Panel*, click an IP address in the detector details tabs or click *View Device Details* in the *Actions* menu.

Click the pin icon 📌 at the top-right side of the pane to keep the *Entity Panel* open and visible when switching between pages where it is available. See, Accessing the Entity Panel on page 46.



Investigations > [redacted] > Results

Investigation Results | [redacted] | Find SSL requests from top domains.

```
WITH __event_ssl AS (
  SELECT
    "application_annotations_applications" AS application_annotations_applications,
    "application_annotations_environments" AS application_annotations_environments,
    "application_annotations_locations" AS application_annotations_locations,
```

Showing all 748 events, ordered by timestamp descending

tag	type	timestamp	src	dst	intel	applicatio...	source	server_name
	SSL	2025-06-19 14:00:45 Z	[redacted]	[redacted]			Zeek	v10.events.data.microsoft.c
	SSL	2025-06-19 10:47:34 Z	[redacted]	[redacted]			Zeek	v10.events.data.microsoft.c
	SSL	2025-06-19 21:35:33 Z	[redacted] application:finance	[redacted]			Zeek	v10.events.data.microsoft.c
	SSL	2025-06-19 12:21:35 Z	[redacted] application:finance	[redacted]			Zeek	v10.events.data.microsoft.c
	SSL	2025-06-19 03:13:39 Z	[redacted]	[redacted]			Zeek	v10.events.data.microsoft.c
	SSL	2025-06-19 13:51:35 Z	[redacted] application:finance	[redacted]			Zeek	v10.events.data.microsoft.c
	SSL	2025-06-19 14:43:41 Z	[redacted]	[redacted]			Zeek	v10.events.data.microsoft.c
	SSL	2025-06-19 20:21:36 Z	[redacted] application:finance	[redacted]			Zeek	v10.events.data.microsoft.c
	SSL	2025-06-19 02:21:35 Z	[redacted] application:finance	[redacted]			Zeek	v10.events.data.microsoft.c
	SSL	2025-06-19 20:13:43 Z	[redacted]	[redacted]			Zeek	v10.events.data.microsoft.c
	SSL	2025-06-19 11:51:35 Z	[redacted] application:finance	[redacted]			Zeek	v10.events.data.microsoft.c
	SSL	2025-06-19 09:12:46 Z	[redacted]	[redacted]			Zeek	v10.events.data.microsoft.c
	SSL	2025-06-19 04:43:39 Z	[redacted]	[redacted]			Zeek	v10.events.data.microsoft.c
	SSL	2025-06-19 07:51:35 Z	[redacted] application:finance	[redacted]			Zeek	v10.events.data.microsoft.c
	SSL	2025-06-19 20:52:33 Z	[redacted] application:finance	[redacted]			Zeek	v10.events.data.microsoft.c

192.168.200.10

Summary

First seen: 2024-10-30 22:21:41 (UTC)
Last seen: 2025-06-25 10:49:52 (UTC)
Risk score: 10.0
Annotations:
application:finance

VirusTotal
No VirusTotal Results Found

FortiEDR » INSTALLED
Status: Not Isolated
Events Found: 0

FortiManager » INSTALLED
Status: Not Banned
Events Found: 1

CrowdStrike Falcon NOT INSTALLED

WHOIS »
Network Age: 31y 110d
Created: 1994-03-15 00:00:00 (UTC)
Updated: 2024-05-24 00:00:00 (UTC)

Filter Results by Date
2025-06-18 23:35 - 2025-06-19 23:35

PDNS
No PDNS Results Found

Detections »

The *Entity Panel* is organized into tabs on the right side of the page.

Summary	Shows the first and last seen timestamps, applied tags, and a summary of records on subsequent tabs. The summary *First seen* and *Last seen* fields will display a timestamp for the last year. If the summary is more than a year old, *More than a year ago* is displayed. The summary also includes a button to *Contain*, *Isolate*, or *Ban* an endpoint.
VirusTotal	Populated by FortiNDR Cloud integration with VirusTotals details for: • *Detected URLs*:A URL that returned results. • *Resolved URLs*: VirusTotal passive DNS resolution results. • *Communicating Samples*: Hashes of files that called out to the entity during dynamic analysis. • *Downloaded Samples*: Hashes of files that were downloaded from the entity during dynamic analysis.

	• *Referrer Samples*: Hashes of files that referred to the entity, but may have not communicated directly, during dynamic analysis.
WHOIS	Populated by FortiNDR Cloud WHOIS.
Filter Results by Date	You can filter the results by date for up to one year. A yellow border appears around the date picker when you pivot to the Entity Panel from a page with a time range greater than one year. The date picker will also default to the last seven days.
PDNS	All passive DNS records observed for the entity for the life of the account. Two sets of data are displayed: *DNS record in the time range* and *Passive DNS record all time*. Records are displayed in the order they were last seen. The records within the time range appear at the top of the list. Records within the time range are highlighted by *First in Time Range* and *Last in Time Range*. The *Type* field indicates if the DNS type such as IPv4 (*a*), IPv6 (*aaaa*), canonical name (*CNAME*), name server (*NS*), mail exchange (*MX*), and text *TXT*.
Detections	All FortiNDR Cloud detections observed for the entity for the life of the account.
Accounts	Kerberos and NTLM records observed for the entity over the past 30 days, particularly useful for identifying the users of an internal asset.
DHCP	All DHCP records for the entity for the life of the account.
Software	All software associated with the entity, observed from any network protocol.
FortiGuard	Indicates a malicious file is detected, with the message *File identified as malicious*.Click the section header or the FortiGuard icon to view the attributes about the malicious file. If the attributes are not available, then none are displayed. See To view malicious files with FortiGuard.
FortiEDR	This tab appears when the FortiEDR integration is enabled. For more information see, FortiEDR integration for FortiNDR Cloud.
Crowdstrike	This tab appears when the Crowdstrike integration is enabled. For more information see, CrowdStrike Falcon integration for FortiNDR Cloud.
Observations	Displays a list of any observations associated with the entity. Click an observation title in this section to open the *Observation Details* page. See Observation details on page 19.

Adding annotations and viewing malicious files

To add an annotation:

1. In the *Summary* tab click *Add an Annotation*. The *Create an annotation* dialog opens.
2. From the *Select an annotation type* drop-down, select the annotation type.
3. In the *Enter an annotation name* field, enter a name for the annotation.

4. In the *Enter a description* field, enter the annotation.
5. Click *Save*. The annotation is added to the *Summary* tab.

For information about managing annotations, see Manage annotations on page 119.

To modify annotations:

1. In the Entity Panel, click *Modify Annotations*. The *Manage Annotations for <IP_address>* dialog opens.
2. (Optional) In the search field, enter an annotation name.
3. Select or deselect an annotation and click *Update*.

To view malicious files with FortiGuard:

1. In the investigation results, click the link in the *File* column.
2. Click a link in the *Files* dialog.
3. The *FortiGuard* area displays the *File identified as malicious* flag.

Date ranges

Keep the following considerations in mind when view viewing results with the date range picker.

Summary tab	• The date range picker is displayed In the *Summary* tab. The results in each section above the dashed line (*Detections*, *DHCP*, *Account* and *Software*)is captured within this date range. The information below the dashed line is independent from this date range. • Sections in the Summary tab that use the date picker (such as DHCP) will also display the date picker in the corresponding tab. • The date range picker in any tab is global. If you change the start and end date in one tab it will change the date range everywhere in the panel.
Date out of range	• The *Account* and *Software* tabs only display results for last 90 days. If the date picker end date exceeds 90 days, *Date out of range* is displayed.
Default time range	• The date range on Entity Panel defaults to the time range based on the page the panel is opened in. • The time range in the Entity Panel matches range when opened from the following pages: • Entity Lookup • Visualizer • Detection Table • Sensor Visibility • Investigate Results

	◦ Adhoc Search ◦ Observation Detail • Detections is default to last 7 days when opened from the following pages: ◦ Detection page ◦ Detection-Indicator page ◦ Detection-Triage Page

Accessing the Entity Panel

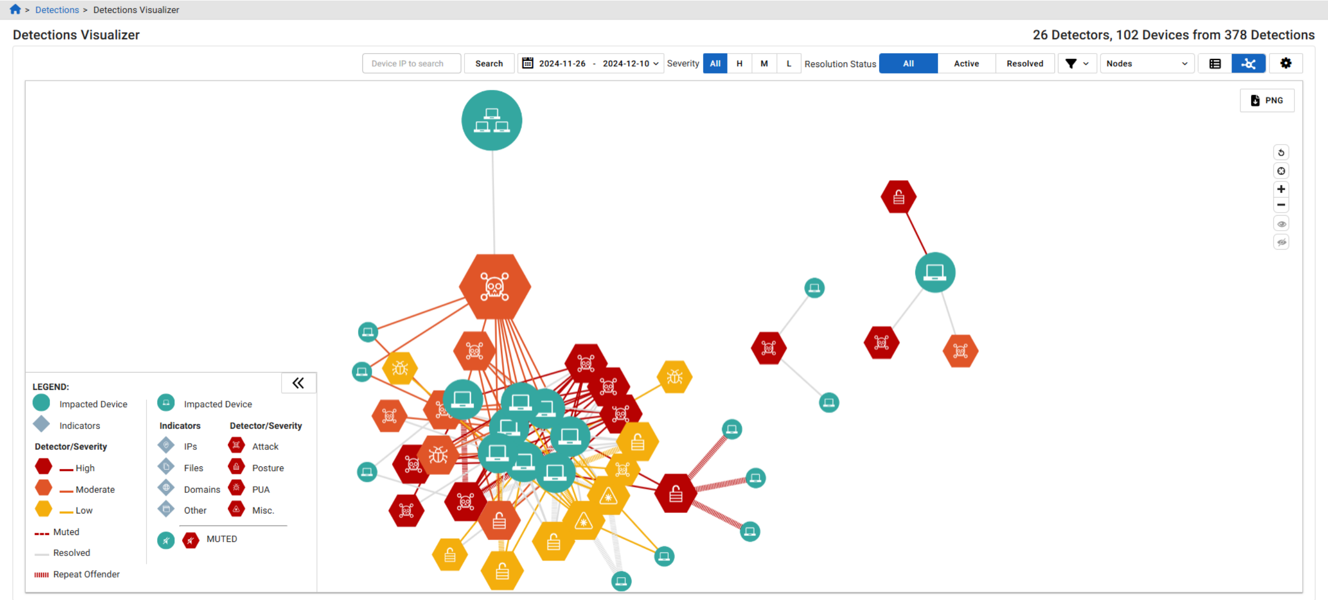
You can access the Entity Panel from the following pages:

- Investigation Results: Click an IP address in the *Results* table.
- Observation : In the Dashboard > Observation details
- Manage Annotations: Click the *Entity Name* in the *Manage Annotations* page when the entity is a valid IP, CIDR, domain, or URL.
- Adhoc Search Results
- Visualizer
- Detection Table
- Detection Triage
- Detection Triage Devices
- Entity Lookup
- Detection Event Indicator
- Visible Device Page (Sensor)

Detections visualizer

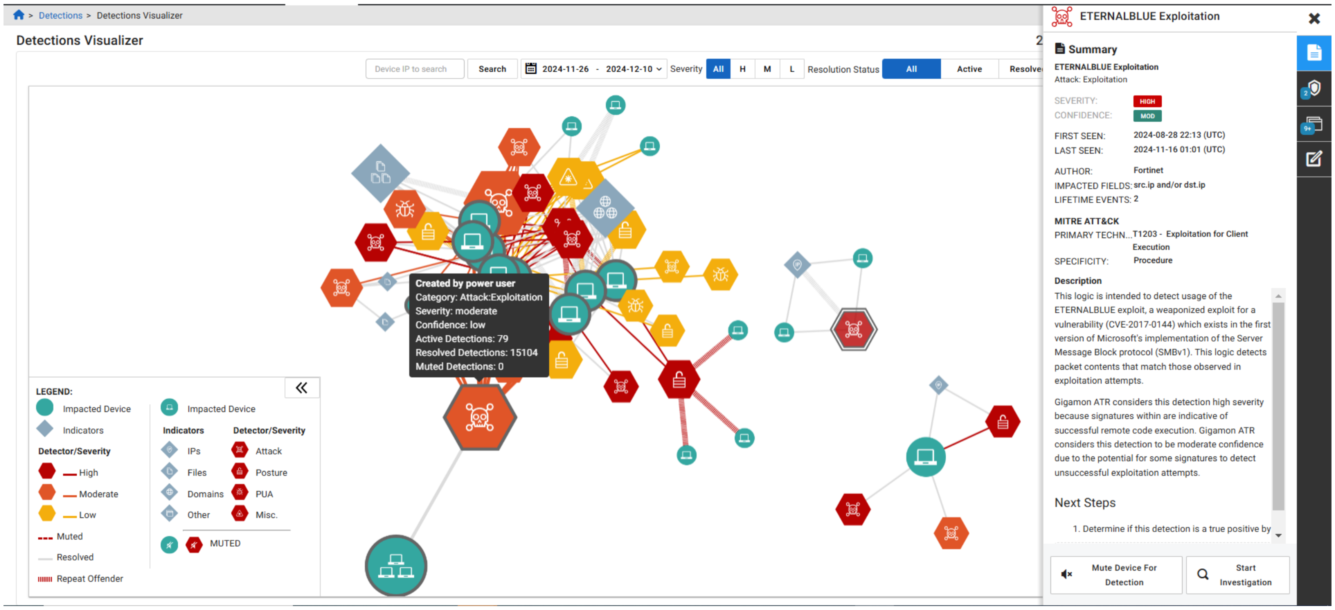
Go to *Detections > Detections Visualizer* to view detections data from existing APIs in a graphical interface. You can use the visualizer to view the relationship between the detectors and devices, inspect detectors and impacted device details, and navigate to the node view from the list of impacted nodes.

The visualizer will initially display all active, unmuted detections over the past 14 days in graphical form with nodes representing impacted devices and detectors.



Nodes

You can hover over the nodes in the Visualizer to view summary information about a detector, device, indicator or connector line. Click a node to open the *Quick View* panel on the right side of the page. Right-click a node to open a context menu.



Created by power user
Category: Attack:Exploitation
Severity: moderate
Confidence: low
Active Detections: 79
Resolved Detections: 15104
Muted Detections: 0

ETERNALBLUE Exploitation

Summary

ETERNALBLUE Exploitation
Attack: Exploitation

SEVERITY: HIGH
CONFIDENCE: MOD

FIRST SEEN: 2024-08-28 22:13 (UTC)
LAST SEEN: 2024-11-16 01:01 (UTC)

AUTHOR: Fortinet
IMPACTED FIELDS: src.ip and/or dst.ip
LIFETIME EVENTS: 2

MITRE ATT&CK
PRIMARY TECHN... T1203 - Exploitation for Client Execution
SPECIFICITY: Procedure

Description

This logic is intended to detect usage of the ETERNALBLUE exploit, a weaponized exploit for a vulnerability (CVE-2017-0144) which exists in the first version of Microsoft's implementation of the Server Message Block protocol (SMBv1). This logic detects packet contents that match those observed in exploitation attempts.

Gigamon ATR considers this detection high severity because signatures within are indicative of successful remote code execution. Gigamon ATR considers this detection to be moderate confidence due to the potential for some signatures to detect unsuccessful exploitation attempts.

Next Steps

1. Determine if this detection is a true positive by

Detector nodes	Hover over a detector node to view related information about the detection such as the detector's *Category*, *Severity*, *Confidence* rating as well as the number of *Active* and *Resolved Detections*. The detector and its impacted devices are also highlighted.

<table>
<tr><td><b>Device nodes</b></td><td>Hover over a device node, to view the device IP address. If you hover over a device group, the list of IP addresses is shown. The device group and related detections will be highlighted.
Right-click a device node to show/hide the label or the node, add an annotation, or mute the device</td></tr>
<tr><td><b>Indicator node</b></td><td>Hover over an indicator node to view the indicator and to highlight related detections and devices.
Right-click an Indicator node to show/hide the label or the node, or add an annotation.</td></tr>
<tr><td><b>Connector lines</b></td><td>Hover over the connector lines to view summary information pertaining to what the line connects, such as the indicators, device IPs, and/or detections. Related devices, detections, or indicators will be highlighted.
Right-click a connector line to resolve the detection or mute the device for that detector. If any node is a group or can be grouped, you will have an option to <i>Expand</i> (ungroup) or <i>Collapse</i> (regroup) the set of nodes.</td></tr>
<tr><td><b>Quick views</b></td><td>Click a node in the Visualizer to open the <i>Quick View</i> panel at the right side of the screen. Quick Views display summary information as well as a series of detail-view options and actions. The available options and actions will vary depending on the type of node selected.
<table>
<tr><td><b>Summary</b></td><td>Provides a summary of the detection and corresponding devices along with options to access further details:</td></tr>
<tr><td><b>Software</b></td><td>Displays the <i>Version</i>, <i>Events</i>, <i>First Seen</i> and <i>Last Seen</i> for the software detected on the device.</td></tr>
<tr><td><b>Indicators</b></td><td>Displays the Indicators list.</td></tr>
<tr><td><b>Accounts</b></td><td>Displays the Account, User, First Seen, Last Seen and Service detected on the device.</td></tr>
<tr><td><b>DHCP</b></td><td>Displays the Dynamic Host Configuration Protocol.</td></tr>
<tr><td><b>Detections</b></td><td>Shows a list of detections, each citing the date and time it was last seen and the impacted account;<ul><li>Click an item to open the detector view</li><li>Click the options drop-down on an item to resolve the detection or mute the device for the specified detector or account</li></ul></td></tr>
<tr><td><b>PDNS</b></td><td>Displays the Passive DNS/</td></tr>
<tr><td><b>Query</b></td><td>Displays the query.</td></tr>
<tr><td><b>Virus Total</b></td><td>Displays the total number of viruses detected.</td></tr>
<tr><td><b>WHOIS</b></td><td>Provides registered domain information.</td></tr>
</table></td></tr>
</table>

Filtering the Visualizer

Use the filters at the top of the visualizer to change the content displayed in the canvas. Some filter options are static, others are dynamic based on the criteria selected elsewhere. When you modify the filter, the graph will be redrawn per the selected options. The Visualizer can retrieve up to 10,000 detections from the API regardless of the filter criteria.

Use the *Nodes* filter to select the types of nodes to display. There are three types of nodes:

- Indicators
- Impacted Devices
- Detectors

When the *Indicators* option is selected, groups of indicators and impacted devices related to the same detector may be clustered together on the graph. While any combination can be selected, omitting *Detection Name* will usually result in a disjointed graph.

Action buttons

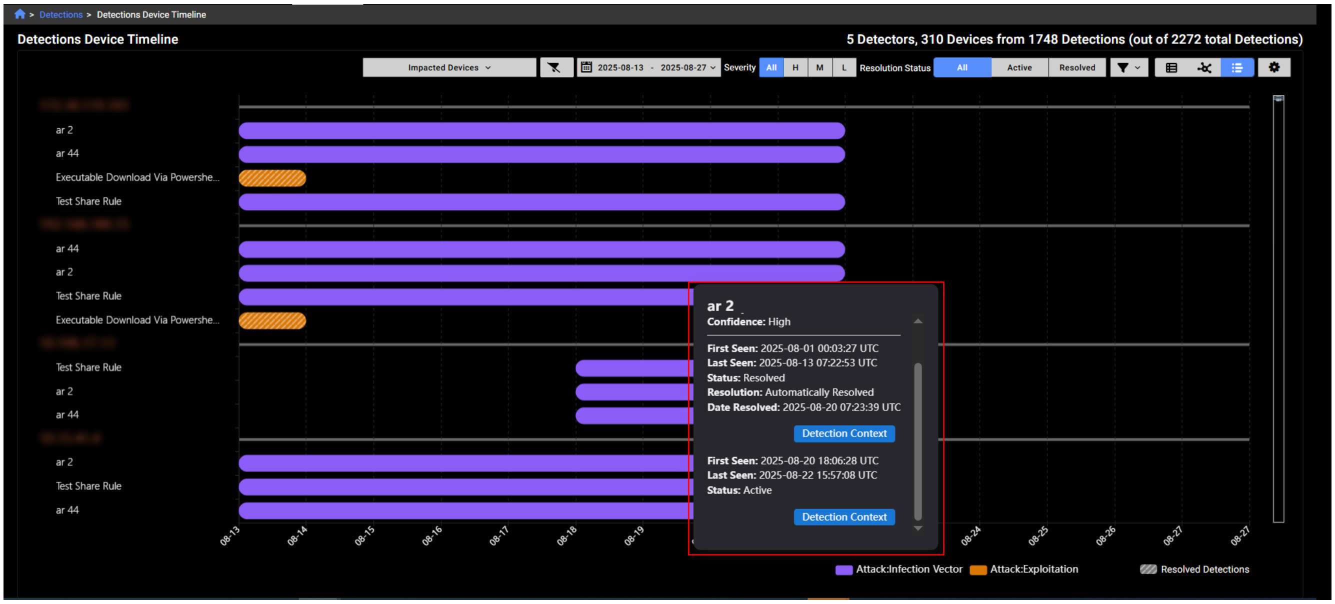
⤓ PNG	Export the current graph as a PNG file.
↻	Reset the graph (resets all filters, reloads data, and generates a new graph).
⌖	Recenter the graph (fits all existing data in the screen).
+ −	Zoom in or out.
👁	Reveal hidden nodes. This option is available after one or more nodes have been hidden. To hide a node, right-click it and select *Hide node*.
⊘	Hide hidden nodes. This option is available after one or more nodes have been hidden. to hide a node, right-click on it, and click Hide node.

Detections device timeline

Go to *Detections* > *Detections Device Timeline* to view all detections sorted by device risk score.

A solid background color in each bar on the chart represents a detection category, as indicated in the legend at the bottom of the page. If a bar is striped, it means all detections within that range have been resolved. A single bar does not correspond to one detection; instead, it may represent multiple detections that occurred within the same time range.

Hover over a bar in the chart to view details about the detection. You can also click the *Detection Context* button to view the detections and observations related to this IP on the *Detection Context* page.



ar 2
Confidence: High

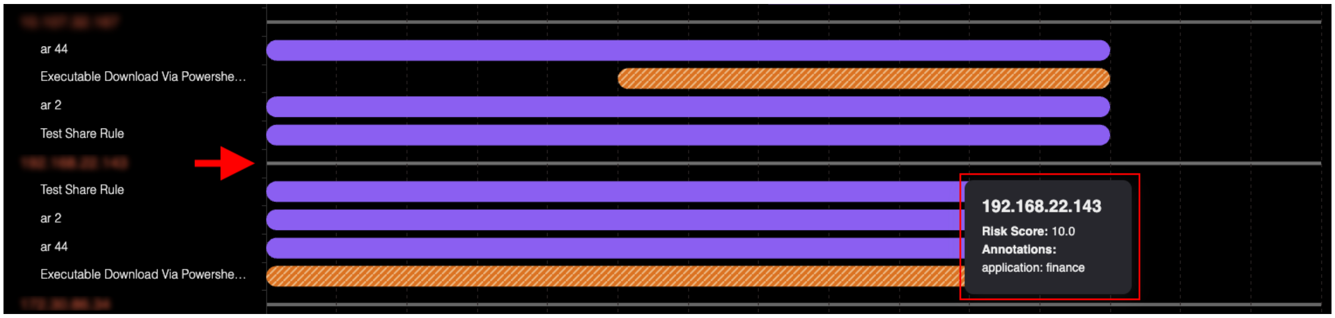
First Seen: 2025-08-01 00:03:27 UTC
Last Seen: 2025-08-13 07:22:53 UTC
Status: Resolved
Resolution: Automatically Resolved
Date Resolved: 2025-08-20 07:23:39 UTC

Detection Context

First Seen: 2025-08-20 18:06:28 UTC
Last Seen: 2025-08-22 15:57:08 UTC
Status: Active

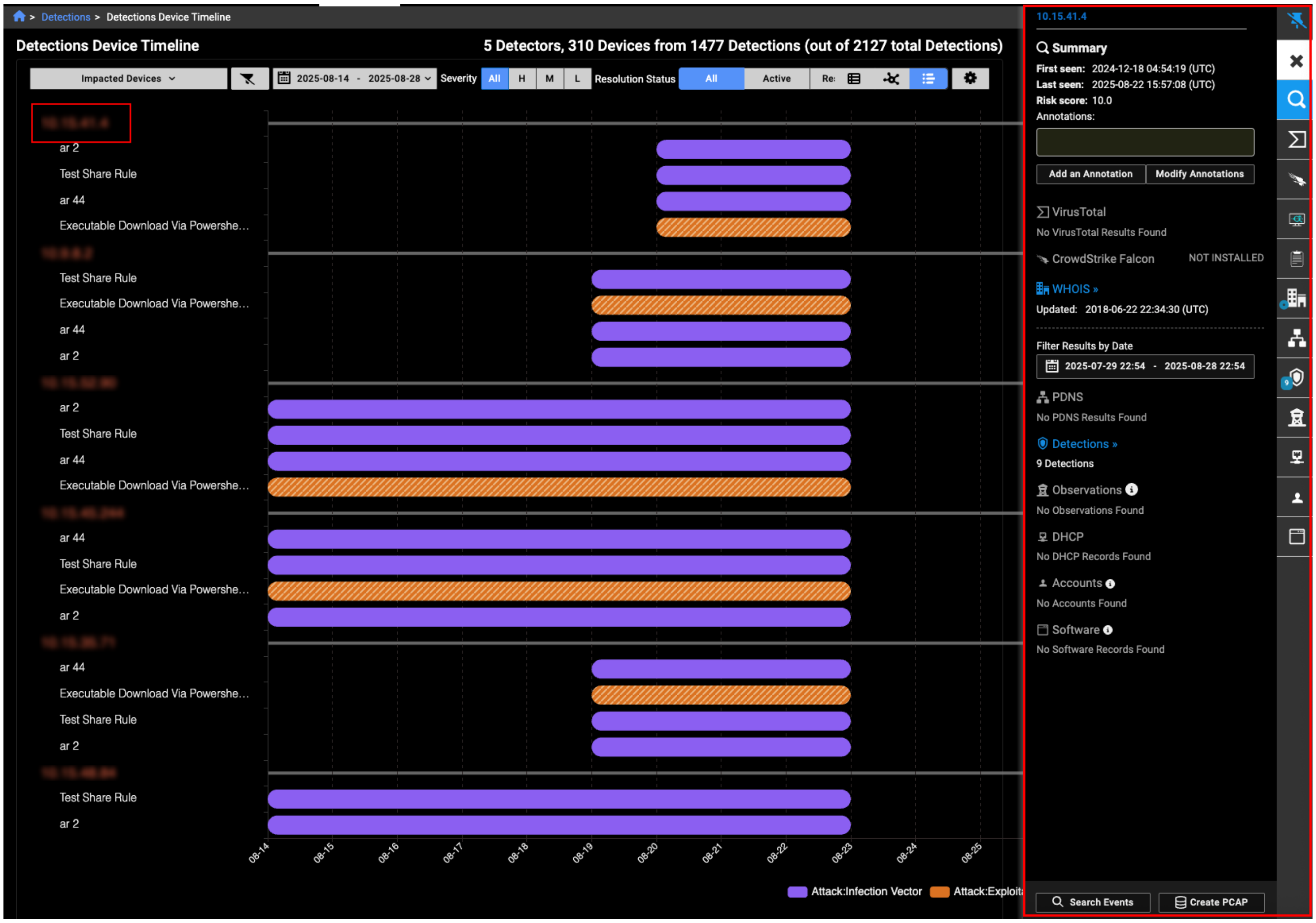
Detection Context

Hover over the line next to the IP label to view its risk score. Any annotations related to the IP will be displayed here.



192.168.22.143
Risk Score: 10.0
Annotations:
application: finance

Left-click the IP label to open the *Entity Panel*.



Detections > Detections Device Timeline

Detections Device Timeline

5 Detectors, 310 Devices from 1477 Detections (out of 2127 total Detections)

10.15.41.4

Summary

First seen: 2024-12-18 04:54:19 (UTC)
Last seen: 2025-08-22 15:57:08 (UTC)
Risk score: 10.0
Annotations:

VirusTotal
No VirusTotal Results Found

CrowdStrike Falcon NOT INSTALLED

WHOIS »
Updated: 2018-06-22 22:34:30 (UTC)

Filter Results by Date
2025-07-29 22:54 - 2025-08-28 22:54

PDNS
No PDNS Results Found

Detections »
9 Detections

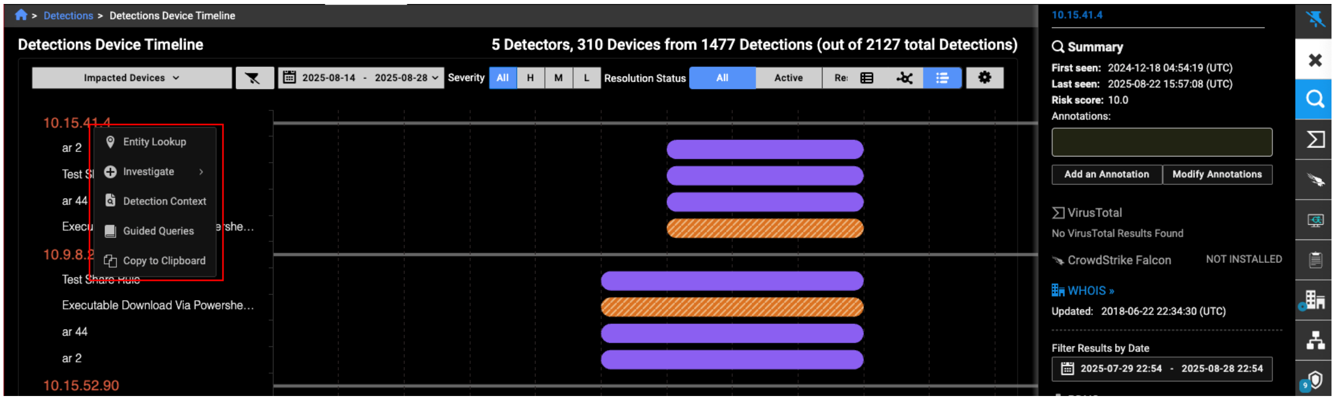
Observations
No Observations Found

DHCP
No DHCP Records Found

Accounts
No Accounts Found

Software
No Software Records Found

Right-click the IP label to open the context menu.



Detections > Detections Device Timeline

Detections Device Timeline

5 Detectors, 310 Devices from 1477 Detections (out of 2127 total Detections)

10.15.41.4

Summary

First seen: 2024-12-18 04:54:19 (UTC)
Last seen: 2025-08-22 15:57:08 (UTC)
Risk score: 10.0
Annotations:

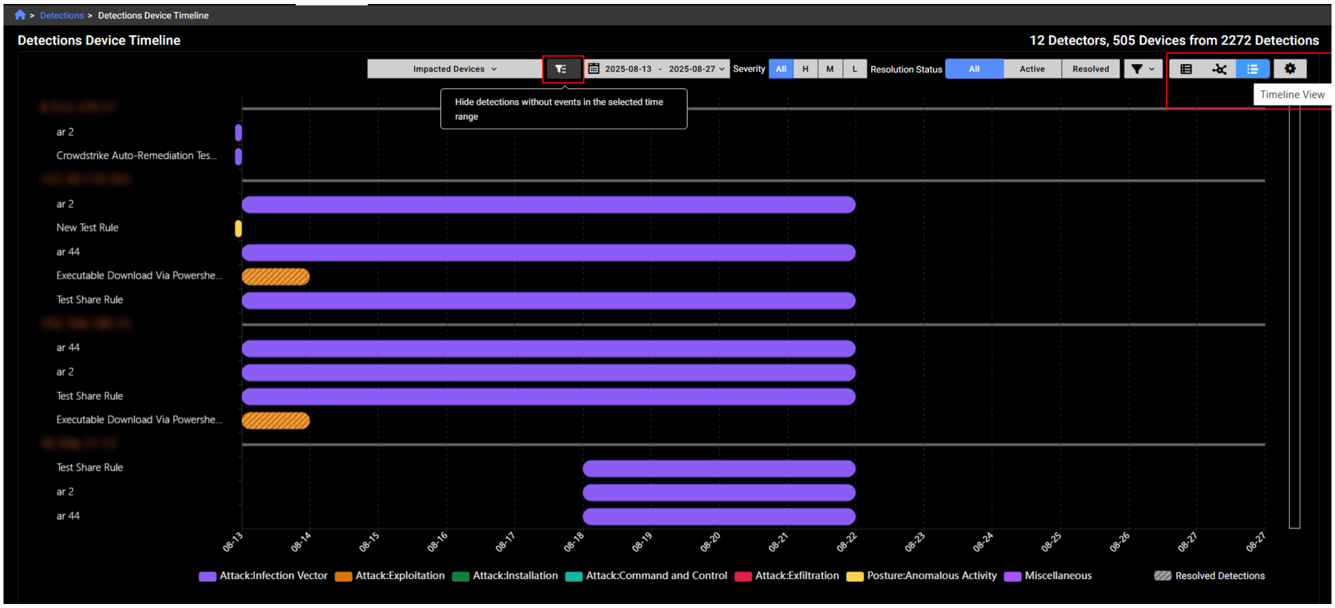
VirusTotal
No VirusTotal Results Found

CrowdStrike Falcon NOT INSTALLED

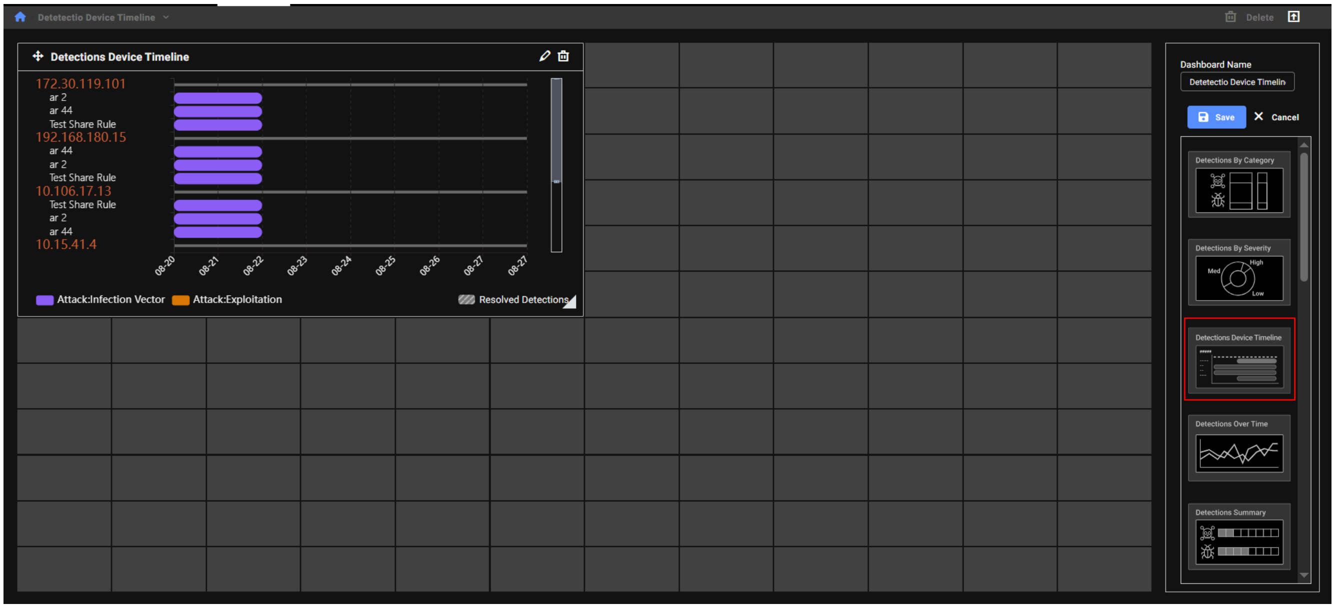
WHOIS »
Updated: 2018-06-22 22:34:30 (UTC)

Filter Results by Date
2025-07-29 22:54 - 2025-08-28 22:54

You can filter the view to hide detections that have no associated events during the selected time range. Use the toggles on the right side of the page to switch between the *Detections Table* and *Detections Visualizer* views. Both views also support the *Detections Device Timeline* toggle.



The *Detections Device Timeline* is available as a dedicated dashboard widget. By default, it displays the top five IPs with the highest risk scores from the past seven days. These settings are customizable.

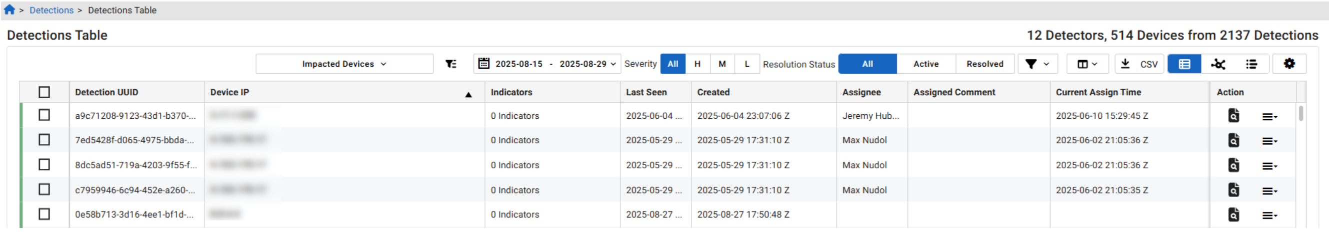


Detections table

The *Detections Table* is where you can view all detections. Whereas the *Triage Detections* and *Detections Triage* views show detections by detector or device, the *Detections Table* shows detections by detector and device over time. By default, the table displays detections for the last two weeks. A color-coded bar at the left side of the table indicates active and resolved detections. A green bar indicates an active detection. A red bar indicates a resolved detection.

To access the Detections Table:

- Go to *Detections > Detections Table*.
- On the *Dashboard*:
  - In the *MITRE ATT&CK* widget, click a bar in the chart.
  - In the *Resolved Detections* widget, click *Total* or click a data point in the chart.



Detections > Detections Table
Impacted Devices
2025-08-15 - 2025-08-29
Severity All H M L
Resolution Status All Active Resolved
CSV

Detections Table

12 Detectors, 514 Devices from 2137 Detections

□	Detection UUID	Device IP	Indicators	Last Seen	Created	Assignee	Assigned Comment	Current Assign Time	Action
□	a9c71208-9123-43d1-b370-...	[redacted]	0 Indicators	2025-06-04 ...	2025-06-04 23:07:06 Z	Jeremy Hub...		2025-06-10 15:29:45 Z	
□	7ed5428f-d065-4975-bbda-...	[redacted]	0 Indicators	2025-05-29 ...	2025-05-29 17:31:10 Z	Max Nudol		2025-06-02 21:05:36 Z	
□	8dc5ad51-719a-4203-9f55-f...	[redacted]	0 Indicators	2025-05-29 ...	2025-05-29 17:31:10 Z	Max Nudol		2025-06-02 21:05:36 Z	
□	c7959946-6c94-452e-a260-...	[redacted]	0 Indicators	2025-05-29 ...	2025-05-29 17:31:10 Z	Max Nudol		2025-06-02 21:05:35 Z	
□	0e58b713-3d16-4ee1-bf1d-...	[redacted]	0 Indicators	2025-08-27 ...	2025-08-27 17:50:48 Z				

Filtering events

By default, the *Detections Table* displays detections by all severities and detection statuses for the previous two weeks ending on the current date. You can use any column header to sort the detections. Filters allow you to view detections for a specific IP, refine the list by *Severity* and *Detection Status*. You can also toggle between table and graph view.

Impacted Devices	Click the dropdown to view the list of impacted devices. Use the search field to enter an IP address to locate a specific device. You can also select one or more devices from the list to filter the view .	
Time range	Click to open the date picker. Use the calender to set the start and end date or select an option from the *Quick Ranges* (*Last Hour* to *Last 90 days*). Click the *Date Range Type* dropdown to display detections by *Active Date*, *Creation Date*, and *Resolution Date*. The date displayed in the date picker will mirror the dates in the *Entity Panel*.	
Severity	Select High (**H**), Medium (**M**), or Low (**L**).	
Detection Status	**All**	Detections that were active during time range and are still active or resolved now. For example, a detection that was active on May 5 and resolved on May 10 is counted as *ALL*.
	Active	Detections that were active during time range and are still active.
	Resolved	Detections that were active during time range and are resolved now.
Additional filters	**Category**	Select a category from the list. See, Detections > *Detector Categories on page 27*.

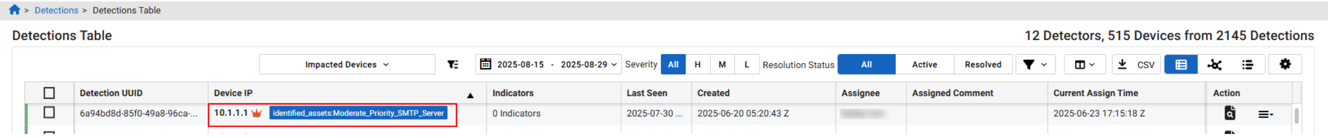
<table>
<tr><td></td><td>
<table>
<tr><td><b>Created By</b></td><td>Select and account that created the detector from the list.</td></tr>
<tr><td><b>MITRE ATT&CK</b></td><td>Select the detection by behavior from the list. See, MITRE ATT&CK on page 20.</td></tr>
<tr><td><b>Assigned to</b></td><td>Select a user assigned to a detection.</td></tr>
<tr><td><b>Resolved by</b></td><td>Select a user from the list.</td></tr>
<tr><td><b>Resolution</b></td><td>Select <i>All</i>, <i>True Positive: Mitigated</i>, <i>True Positive: No Action</i>, <i>False Positive</i>, or <i>Unknown</i>.</td></tr>
<tr><td><b>Sensor</b></td><td>Select one or more sensors from the list.</td></tr>
<tr><td><b>Detection Name</b></td><td>Select a parameter used for the detection from the list.</td></tr>
<tr><td><b>Confidence</b></td><td>Select <i>All</i>, High (<i>H</i>), Medium (<i>M</i>), or Low (<i>L</i>).</td></tr>
<tr><td><b>Muted</b></td><td>Select <i>All</i>, <i>Unmuted</i> or <i>Muted</i>. See, Muting on page 34.</td></tr>
<tr><td><b>Disabled</b></td><td>Select <i>All</i>, <i>Enabled</i> or <i>Disabled</i>. See, Disabling detectors on page 37.</td></tr>
<tr><td><b>Assigned</b></td><td>Select <i>All</i>, <i>Assigned</i>, or <i>Unassigned</i>.</td></tr>
</table>
</td></tr>
<tr><td><b>Columns selectors</b></td><td>
<table>
<tr><td><b>Individual Columns</b></td><td>Select one of the following options:
• Show all columns
• Hide All Columns
• Reset to default
• Select columns to show or hide in the table.</td></tr>
<tr><td><b>Column Profiles</b></td><td>Select one of the following options:
• Click a profile in the list to view the layout.
• Save the profile
• Create a new profile.
For more information, see Creating column profiles on page 68</td></tr>
</table>
</td></tr>
<tr><td><b>CSV</b></td><td>Click to export the list as a CSV file.</td></tr>
<tr><td><b>Table View</b></td><td>Click for table view (default).</td></tr>
<tr><td><b>Graph View</b></td><td>Click to open the Visualizer.</td></tr>
<tr><td><b>Actions menu</b></td><td>Select one of the following options:
• Create Detectors
• Manage Detectors
• Muted Devices
• Excluded devices</td></tr>
</table>

- Manage Subscriptions

Identified Assets

A crown icon appears only on assets annotated by FortiGuard ATR. It is color-coded to indicate severity levels:

- Red for high risk
- Orange for moderate risk
- Yellow for low risk



Detections > Detections Table

Detections Table

12 Detectors, 515 Devices from 2145 Detections

□	Detection UUID	Device IP	Indicators	Last Seen	Created	Assignee	Assigned Comment	Current Assign Time	Action
□	6a94bd8d-85f0-49a8-96ca-...	10.1.1.1 identified_assets:Moderate_Priority_SMTP_Server	0 Indicators	2025-07-30 ...	2025-06-20 05:20:43 Z	[redacted]		2025-06-23 17:15:18 Z	

Detections context

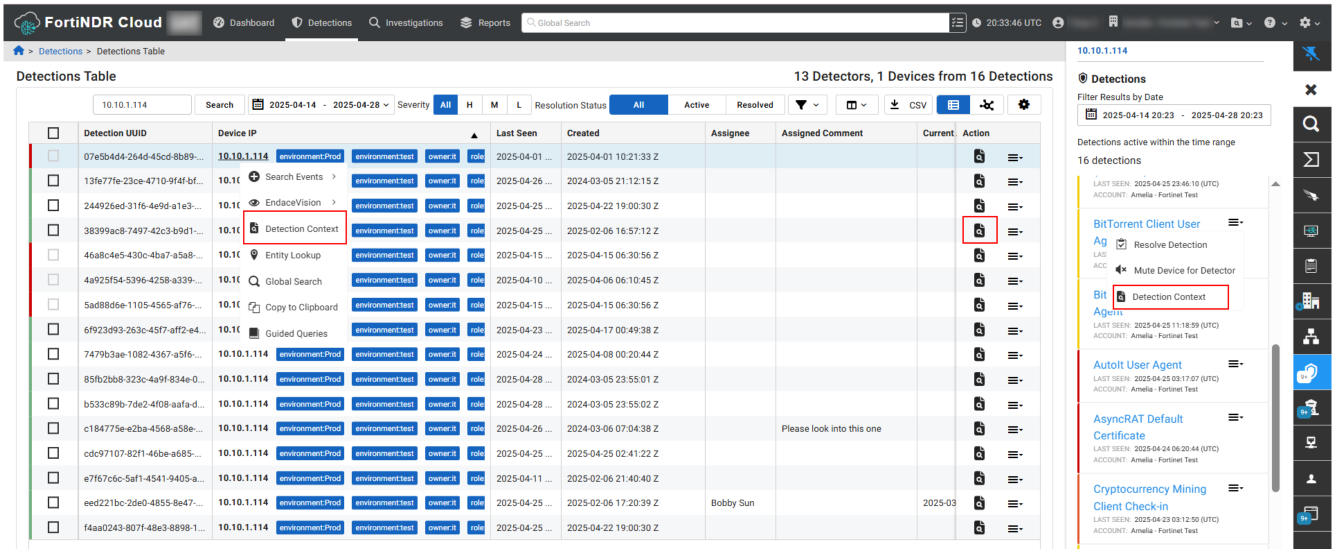
The *Detections Context* page allows you to view detections and observations for a device within a specified time range, and provides detailed insights that includes a timeline, detections, and behavioral observations tables. You can use this page to filter, mute, or exclude devices, and navigate to detailed information pages.

The device timeline only supports detections that are less than a year old.

You can \pivot to the *Detection Context* page from any page that displays an IP address, this includes:

- *Detections Table*:
  - Right-click an IP that was last seen within the year and select *Detections Context*.
  - Right-click the *Indicators* column.
  - Click the *Detections Context* icon in the *Actions* column.
  - Click the *Actions* menu in the *Entity Panel* and select *Detections Context*.
- The *Events table* > *Investigation* results page. Note that the page will not display a selected detection because you are pivoting from an event.
- The *Private Search* page.
- The *Triage Detection* page > *Events* tab.
- *Detections* details > *Lifetime Events* column.
- The *Behavioral Observations* details page
- The *Aggregation* table including the table in a report. When you pivot from the *Aggregation* table in a report, the *Detection Context* page will always show the last 90 days.
- The *Entity lookup* table. This includes the *Entity Lookup* table in *Global Search* results.
- The *Manage Annotations* page. This is limited to valid IPs for the last 90 days.
- The *Entity Panel*. You can pivot to the *Detection Context* page when the Entity Panel title is an IP address.

- Detections Table > *Indicators* column.



Detections Table

13 Detectors, 1 Devices from 16 Detections

10.10.1.114 | Search | 2025-04-14 - 2025-04-28 | Severity: All H M L | Resolution Status: All Active Resolved | CSV

Detection UUID	Device IP	Last Seen	Created	Assignee	Assigned Comment	Current	Action
07e5b4d4-264d-45cd-8b89-...	10.10.1.114 environment:Prod environment:test owner:it role	2025-04-01 ...	2025-04-01 10:21:33 Z				
13fe77fe-23ce-4710-9f4f-bf...	10.10 environment:test owner:it role	2025-04-26 ...	2024-03-05 21:12:15 Z				
244926ed-31f6-4e9d-a1e3-...	10.10 environment:test owner:it role	2025-04-25 ...	2025-04-22 19:00:30 Z				
38399ac8-7497-42c3-b9d1-...	10.10 environment:test owner:it role	2025-04-25 ...	2025-02-06 16:57:12 Z				
46a8c4e5-430c-4ba7-a5a8-...	10.10 environment:test owner:it role	2025-04-15 ...	2025-04-15 06:30:56 Z				
4a925f54-5396-4258-a339-...	10.10 environment:test owner:it role	2025-04-10 ...	2025-04-06 06:10:45 Z				
5ad88d6e-1105-4565-af76-...	10.10 environment:test owner:it role	2025-04-15 ...	2025-04-15 06:30:56 Z				
6f923d93-263c-45f7-aff2-e4...	10.10 environment:test owner:it role	2025-04-23 ...	2025-04-17 00:49:38 Z				
7479b3ae-1082-4367-a5f6-...	10.10.1.114 environment:Prod environment:test owner:it role	2025-04-24 ...	2025-04-08 00:20:44 Z				
85fb2bb8-323c-4a9f-834e-0...	10.10.1.114 environment:Prod environment:test owner:it role	2025-04-28 ...	2024-03-05 23:55:01 Z				
b533c89b-7de2-4f08-aafa-d...	10.10.1.114 environment:Prod environment:test owner:it role	2025-04-28 ...	2024-03-05 23:55:02 Z				
c184775e-e2ba-4568-a58e-...	10.10.1.114 environment:Prod environment:test owner:it role	2025-04-26 ...	2024-03-06 07:04:38 Z		Please look into this one		
cdc97107-82f1-46be-a685-...	10.10.1.114 environment:Prod environment:test owner:it role	2025-04-25 ...	2025-04-25 02:41:22 Z				
e7f67c6c-5af1-4541-9405-a...	10.10.1.114 environment:Prod environment:test owner:it role	2025-04-11 ...	2025-02-06 21:40:40 Z				
eed221bc-2de0-4855-8e47-...	10.10.1.114 environment:Prod environment:test owner:it role	2025-04-25 ...	2025-02-06 17:20:39 Z	Bobby Sun		2025-03	
f4aa0243-807f-48e3-8898-1...	10.10.1.114 environment:Prod environment:test owner:it role	2025-04-25 ...	2025-04-22 19:00:30 Z				

10.10.1.114

Detections

Filter Results by Date

2025-04-14 20:23 - 2025-04-28 20:23

Detections active within the time range

16 detections

LAST SEEN: 2025-04-25 23:46:10 (UTC)
ACCOUNT: Amelia - Fortinet Test

BitTorrent Client User Ag
LAS
ACC

Bit
Agent
LAST SEEN: 2025-04-25 11:18:59 (UTC)
ACCOUNT: Amelia - Fortinet Test

AutoIt User Agent
LAST SEEN: 2025-04-25 03:17:07 (UTC)
ACCOUNT: Amelia - Fortinet Test

AsyncRAT Default Certificate
LAST SEEN: 2025-04-24 06:20:44 (UTC)
ACCOUNT: Amelia - Fortinet Test

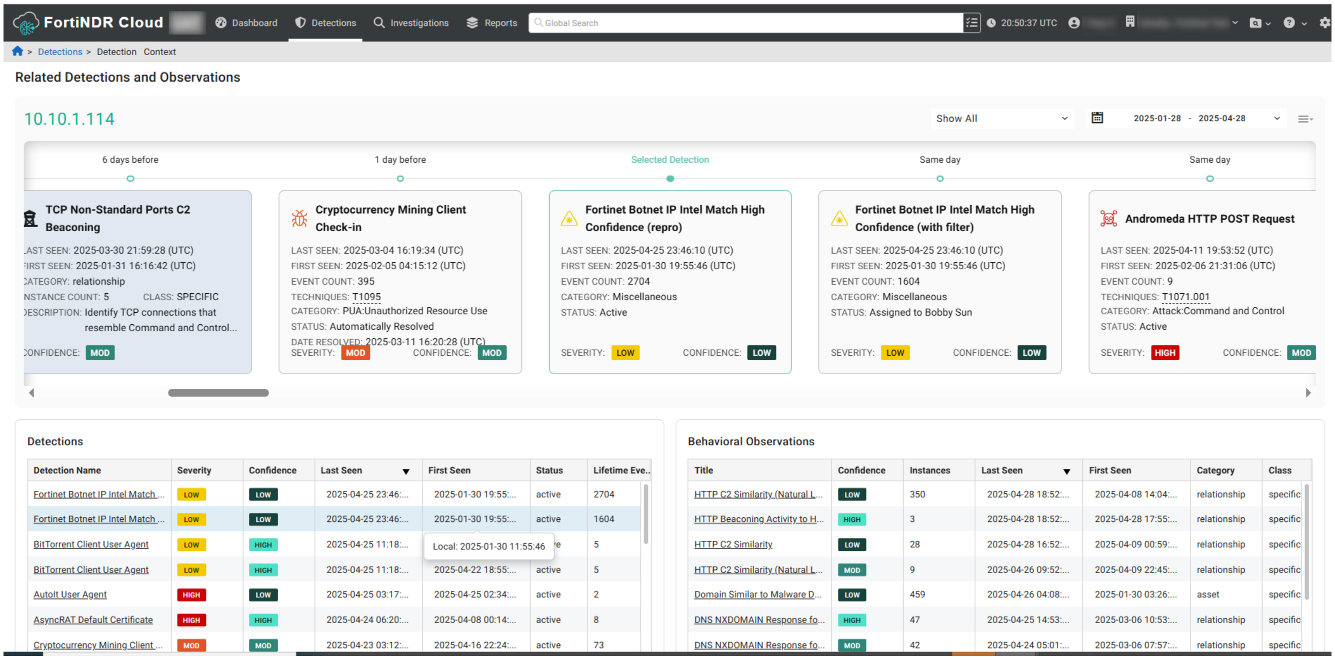
Cryptocurrency Mining Client Check-in
LAST SEEN: 2025-04-23 03:12:50 (UTC)
ACCOUNT: Amelia - Fortinet Test

Detection context page

The *Detection Context* page displays the detections and observations timeline, as well as *Detections* and *Behavioral Observations* tables. The tables are sorted by *Last Seen* in descending order. The *Detection Context* page will display a message indicating that there are no detections or observations when none are present.

The detection you pivoted from in the *Detections table* will appear as the *Selected Detection* in the center of the timeline and display details about the detection. The timeline is sorted by *Last Seen* in ascending order. To change the *Selected Detection*, click a row in the *Detections* table. To change the selection to an observation, click a row in the *Behavioral Observations* table. You can also use the scroll bar to navigate back and forth in the timeline.

To pivot to the *Detections* or *Behavioral Observations* pages, click the *Detection Name* or observation *Title* in the table, or click a tile in the timeline.



Related Detections and Observations

10.10.1.114

6 days before — **TCP Non-Standard Ports C2 Beaconing**
LAST SEEN: 2025-03-30 21:59:28 (UTC)
FIRST SEEN: 2025-01-31 16:16:42 (UTC)
CATEGORY: relationship
INSTANCE COUNT: 5 CLASS: SPECIFIC
DESCRIPTION: Identify TCP connections that resemble Command and Control...
CONFIDENCE: MOD

1 day before — **Cryptocurrency Mining Client Check-in**
LAST SEEN: 2025-03-04 16:19:34 (UTC)
FIRST SEEN: 2025-02-05 04:15:12 (UTC)
EVENT COUNT: 395
TECHNIQUES: T1095
CATEGORY: PUA:Unauthorized Resource Use
STATUS: Automatically Resolved
DATE RESOLVED: 2025-03-11 16:20:28 (UTC)
SEVERITY: MOD CONFIDENCE: MOD

Selected Detection — **Fortinet Botnet IP Intel Match High Confidence (repro)**
LAST SEEN: 2025-04-25 23:46:10 (UTC)
FIRST SEEN: 2025-01-30 19:55:46 (UTC)
EVENT COUNT: 2704
CATEGORY: Miscellaneous
STATUS: Active
SEVERITY: LOW CONFIDENCE: LOW

Same day — **Fortinet Botnet IP Intel Match High Confidence (with filter)**
LAST SEEN: 2025-04-25 23:46:10 (UTC)
FIRST SEEN: 2025-01-30 19:55:46 (UTC)
EVENT COUNT: 1604
CATEGORY: Miscellaneous
STATUS: Assigned to Bobby Sun
SEVERITY: LOW CONFIDENCE: LOW

Same day — **Andromeda HTTP POST Request**
LAST SEEN: 2025-04-11 19:53:52 (UTC)
FIRST SEEN: 2025-02-06 21:31:06 (UTC)
EVENT COUNT: 9
TECHNIQUES: T1071.001
CATEGORY: Attack:Command and Control
STATUS: Active
SEVERITY: HIGH CONFIDENCE: MOD

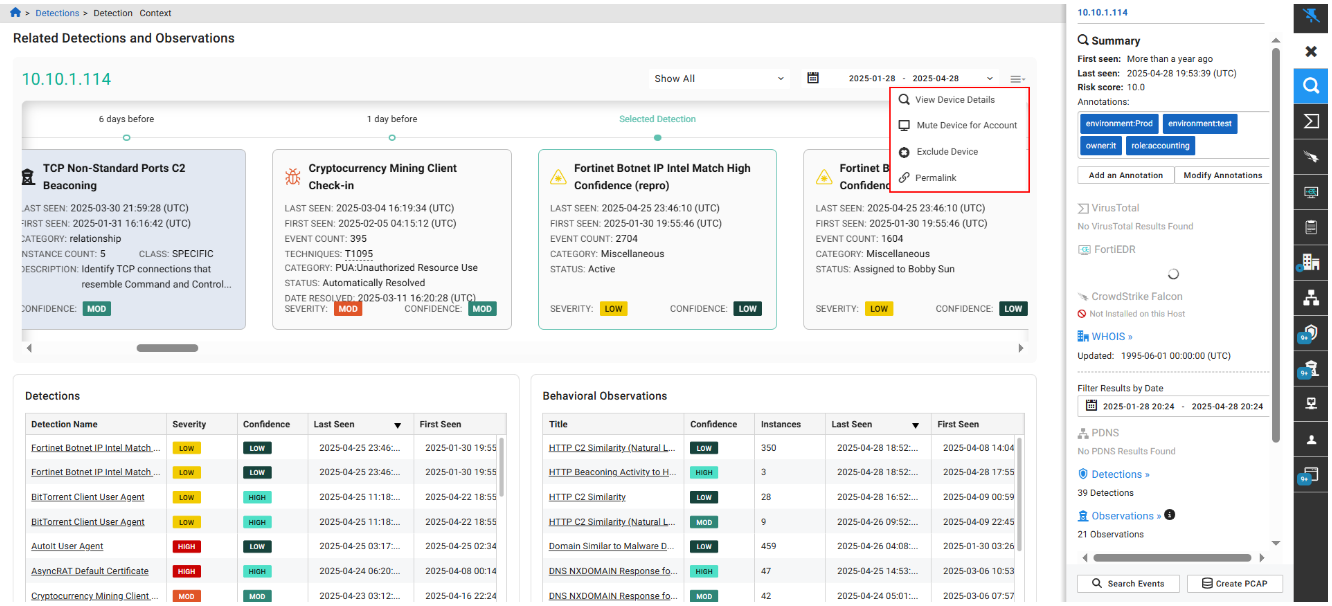
Detections

Detection Name	Severity	Confidence	Last Seen	First Seen	Status	Lifetime Eve..
Fortinet Botnet IP Intel Match ...	LOW	LOW	2025-04-25 23:46:...	2025-01-30 19:55:...	active	2704
Fortinet Botnet IP Intel Match ...	LOW	LOW	2025-04-25 23:46:...	2025-01-30 19:55:...	active	1604
BitTorrent Client User Agent	LOW	HIGH	2025-04-25 11:18:...	Local: 2025-01-30 11:55:46	ve	5
BitTorrent Client User Agent	LOW	HIGH	2025-04-25 11:18:...	2025-04-22 18:55:...	active	5
AutoIt User Agent	HIGH	LOW	2025-04-25 03:17:...	2025-04-25 02:34:...	active	2
AsyncRAT Default Certificate	HIGH	HIGH	2025-04-24 06:20:...	2025-04-08 00:14:...	active	8
Cryptocurrency Mining Client ...	MOD	MOD	2025-04-23 03:12:...	2025-04-16 22:24:...	active	73

Behavioral Observations

Title	Confidence	Instances	Last Seen	First Seen	Category	Class
HTTP C2 Similarity (Natural L...	LOW	350	2025-04-28 18:52:...	2025-04-08 14:04:...	relationship	specific
HTTP Beaconing Activity to H...	HIGH	3	2025-04-28 18:52:...	2025-04-28 17:55:...	relationship	specific
HTTP C2 Similarity	LOW	28	2025-04-28 16:52:...	2025-04-09 00:59:...	relationship	specific
HTTP C2 Similarity (Natural L...	MOD	9	2025-04-26 09:52:...	2025-04-09 22:45:...	relationship	specific
Domain Similar to Malware D...	LOW	459	2025-04-26 04:08:...	2025-01-30 03:26:...	asset	specific
DNS NXDOMAIN Response fo...	HIGH	47	2025-04-25 14:53:...	2025-03-06 10:53:...	relationship	specific
DNS NXDOMAIN Response fo...	MOD	42	2025-04-24 05:01:...	2025-03-06 07:57:...	relationship	specific

To view the *Entity Panel* for the device, click the IP address at the top-left side of the page or click the *Actions* menu next to the date picker and select *View Device Details*. You can use this menu to *Mute Device for Account*, *Exclude Device* and copy the device *Permalink*.



10.10.1.114

Summary
First seen: More than a year ago
Last seen: 2025-04-28 19:53:39 (UTC)
Risk score: 10.0
Annotations:
environment:Prod environment:test owner:it role:accounting

Add an Annotation | Modify Annotations

VirusTotal
No VirusTotal Results Found

FortiEDR

CrowdStrike Falcon
Not Installed on this Host

WHOIS »
Updated: 1995-06-01 00:00:00 (UTC)

Filter Results by Date
2025-01-28 20:24 - 2025-04-28 20:24

PDNS
No PDNS Results Found

Detections »
39 Detections

Observations »
21 Observations

Search Events | Create PCAP

Behavioral observations

A *Behavioral Observation* is an output from an expert system or machine learning-based model that considers one or more event types and historical events. These observations are produced by analyzing threat actors' behaviors, profiling various aspects to identify unknown malicious activity. Not every observation is malicious on its own, but those deemed detection-worthy will have detections created by the Fortinet team, typically for high and some moderate-level observations.

FortiNDR Cloud's power comes from combining detections and observations, which can be viewed in various sections like the *Entity Panel* and *Observations* page.

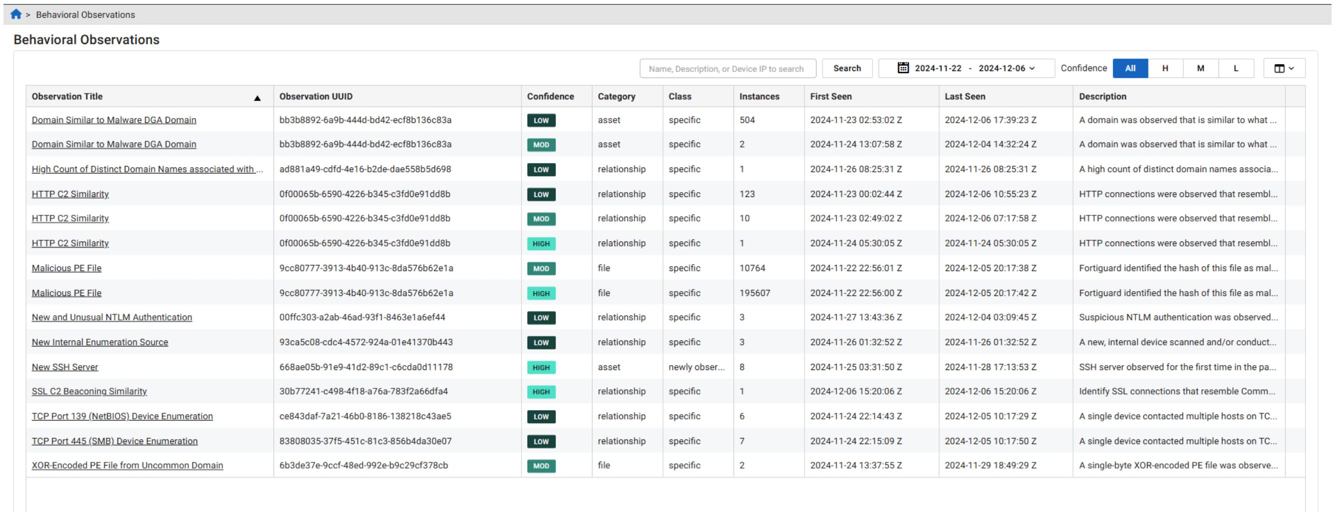
How Behavioral Observations are different from Detections:

Behavioral Observations	Detections
• Non-malicious observations provide context for threat hunting, investigations, and detection triage. • Observations do not have severity levels. • Observations cannot be assigned or resolved in workflows. • Observations cannot be muted	• Suspicious or malicious behavior is usually flagged as detections. • Detections can be based on single network events, Suricata events or observations. • Detections can be assigned or resolved in work flows. • Detections can be muted.

Behavioral Observations page

The *Behavioral Observations* page shows observations for a selected time range and filters. By default, the page shows observations for the previous two weeks and all confidence levels. This is also the landing page for the *Behavioral Observations* widget in the default *Dashboard*.

You can use the search field to find observations that contain instances of a specific IP address or text in the *Observation Title* and *Description* columns. Use the date picker to create a custom time frame. Behavioral Observations can be retrieved for up to the last 90 days.



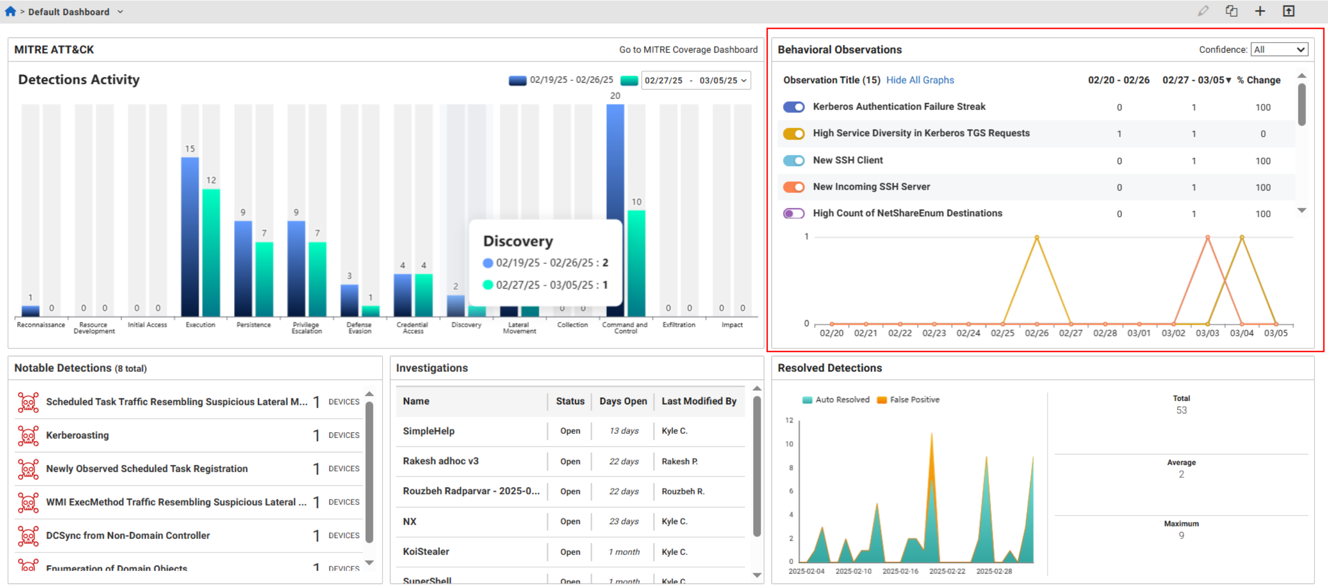
Observation Title	Observation UUID	Confidence	Category	Class	Instances	First Seen	Last Seen	Description
Domain Similar to Malware DGA Domain	bb3b8892-6a9b-444d-bd42-ecf8b136c83a	LOW	asset	specific	504	2024-11-23 02:53:02 Z	2024-12-06 17:39:23 Z	A domain was observed that is similar to what ...
Domain Similar to Malware DGA Domain	bb3b8892-6a9b-444d-bd42-ecf8b136c83a	MOD	asset	specific	2	2024-11-24 13:07:58 Z	2024-12-04 14:32:24 Z	A domain was observed that is similar to what ...
High Count of Distinct Domain Names associated with ...	ad881a49-cdfd-4e16-b2de-dae558b5d698	LOW	relationship	specific	1	2024-11-26 08:25:31 Z	2024-11-26 08:25:31 Z	A high count of distinct domain names associa...
HTTP C2 Similarity	0f00065b-6590-4226-b345-c3fd0e91dd8b	LOW	relationship	specific	123	2024-11-23 00:02:44 Z	2024-12-06 10:55:23 Z	HTTP connections were observed that resembl...
HTTP C2 Similarity	0f00065b-6590-4226-b345-c3fd0e91dd8b	MOD	relationship	specific	10	2024-11-23 02:49:02 Z	2024-12-06 07:17:58 Z	HTTP connections were observed that resembl...
HTTP C2 Similarity	0f00065b-6590-4226-b345-c3fd0e91dd8b	HIGH	relationship	specific	1	2024-11-24 05:30:05 Z	2024-11-24 05:30:05 Z	HTTP connections were observed that resembl...
Malicious PE File	9cc80777-3913-4b40-913c-8da576b62e1a	MOD	file	specific	10764	2024-11-22 22:56:01 Z	2024-12-05 20:17:38 Z	Fortiguard identified the hash of this file as mal...
Malicious PE File	9cc80777-3913-4b40-913c-8da576b62e1a	HIGH	file	specific	195607	2024-11-22 22:56:00 Z	2024-12-05 20:17:42 Z	Fortiguard identified the hash of this file as mal...
New and Unusual NTLM Authentication	00ffc303-a2ab-46ad-93f1-8463e1a6ef44	LOW	relationship	specific	3	2024-11-27 13:43:36 Z	2024-12-04 03:09:45 Z	Suspicious NTLM authentication was observed...
New Internal Enumeration Source	93ca5c08-cdc4-4572-924a-01e41370b443	LOW	relationship	specific	3	2024-11-26 01:32:52 Z	2024-11-26 01:32:52 Z	A new, internal device scanned and/or conduct...
New SSH Server	668ae05b-91e9-41d2-89c1-c6cda0d11178	HIGH	asset	newly obser...	8	2024-11-25 03:31:50 Z	2024-11-28 17:13:53 Z	SSH server observed for the first time in the pa...
SSL C2 Beaconing Similarity	30b77241-c498-4f18-a76a-783f2a66dfa4	HIGH	relationship	specific	1	2024-12-06 15:20:06 Z	2024-12-06 15:20:06 Z	Identify SSL connections that resemble Comm...
TCP Port 139 (NetBIOS) Device Enumeration	ce843daf-7a21-46b0-8186-138218c43ae5	LOW	relationship	specific	6	2024-11-24 22:14:43 Z	2024-12-05 10:17:29 Z	A single device contacted multiple hosts on TC...
TCP Port 445 (SMB) Device Enumeration	83808035-37f5-451c-81c3-856b4da30e07	LOW	relationship	specific	7	2024-11-24 22:15:09 Z	2024-12-05 10:17:50 Z	A single device contacted multiple hosts on TC...
XOR-Encoded PE File from Uncommon Domain	6b3de37e-9ccf-48ed-992e-b9c29cf378cb	MOD	file	specific	2	2024-11-24 13:37:55 Z	2024-11-29 18:49:29 Z	A single-byte XOR-encoded PE file was observe...

Working with Behavioral Observations

Behavioral Observations can be used in threat hunting and as additional evidence for analyzing network activities. They can be viewed at the device level within the Entity Panel. You can use Behavioral Observations to create custom detectors and as evidence in IQL to initiate investigations.

Behavioral Observations Widget

When you log into the FortiNDR Cloud Portal, the *Default Dashboard* displays the *Behavioral Observations* widget. This widget shows a list of the *Behavioral Observations* for the previous two weeks. Click an *Observation Title* to pivot to the *Behavioral Observation Details* page.



Observation Title (15) Hide All Graphs	02/20 - 02/26	02/27 - 03/05▼	% Change
Kerberos Authentication Failure Streak	0	1	100
High Service Diversity in Kerberos TGS Requests	1	1	0
New SSH Client	0	1	100
New Incoming SSH Server	0	1	100
High Count of NetShareEnum Destinations	0	1	100

Notable Detections (8 total)

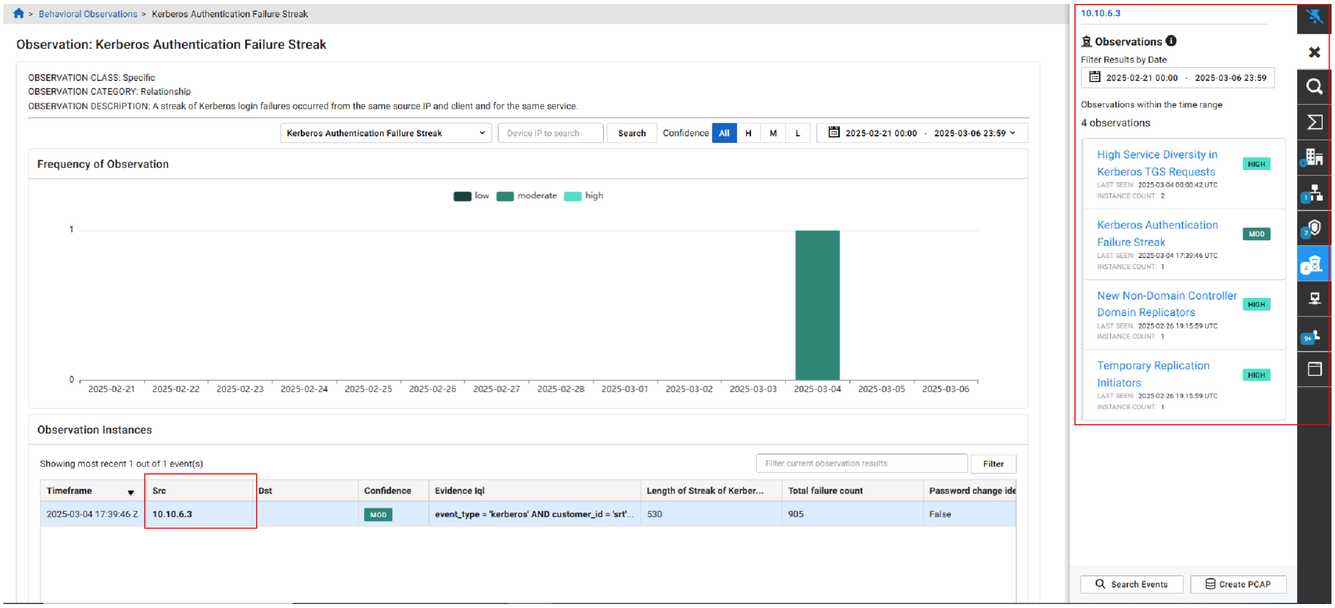
Scheduled Task Traffic Resembling Suspicious Lateral M...	1	DEVICES
Kerberoasting	1	DEVICES
Newly Observed Scheduled Task Registration	1	DEVICES
WMI ExecMethod Traffic Resembling Suspicious Lateral ...	1	DEVICES
DCSync from Non-Domain Controller	1	DEVICES
Enumeration of Domain Objects	1	DEVICES

Investigations

Name	Status	Days Open	Last Modified By
SimpleHelp	Open	13 days	Kyle C.
Rakesh adhoc v3	Open	22 days	Rakesh P.
Rouzbeh Radparvar - 2025-0...	Open	22 days	Rouzbeh R.
NX	Open	23 days	Kyle C.
KoiStealer	Open	1 month	Kyle C.
SuperShell	Open	1 month	Kyle C.

Behavioral Observation Details

The observation class, category and description appear at the top-left of the page. You can view Behavioral Observations for an individual entity in the Entity Panel by clicking the IP in the *Src* column.



Behavioral Observations > Kerberos Authentication Failure Streak

Observation: Kerberos Authentication Failure Streak

OBSERVATION CLASS: Specific
OBSERVATION CATEGORY: Relationship
OBSERVATION DESCRIPTION: A streak of Kerberos login failures occurred from the same source IP and client and for the same service.

Showing most recent 1 out of 1 event(s)

Timeframe	Src	Dst	Confidence	Evidence Iql	Length of Streak of Kerber...	Total failure count	Password change ide
2025-03-04 17:39:46 Z	10.10.6.3		MOD	event_type = 'kerberos' AND customer_id = 'srt'...	530	905	False

10.10.6.3

Observations

Filter Results by Date

2025-02-21 00:00 - 2025-03-06 23:59

Observations within the time range

4 observations

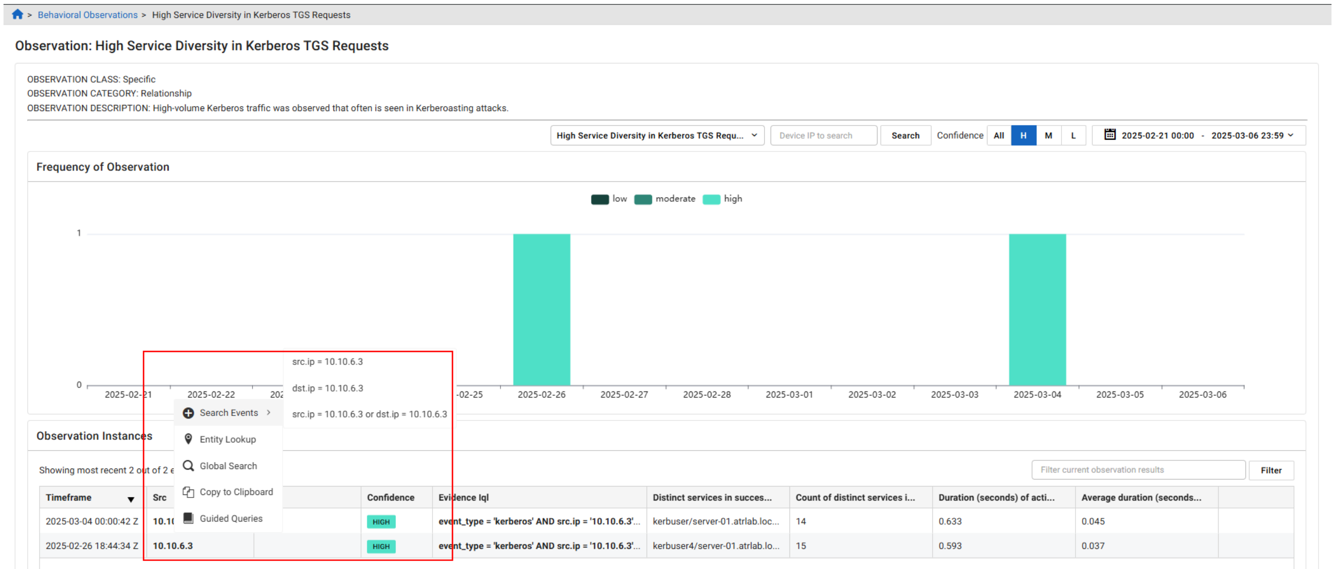
High Service Diversity in Kerberos TGS Requests HIGH
LAST SEEN: 2025-03-04 00:00:42 UTC
INSTANCE COUNT: 2

Kerberos Authentication Failure Streak MOD
LAST SEEN: 2025-03-04 17:39:46 UTC
INSTANCE COUNT: 1

New Non-Domain Controller Domain Replicators HIGH
LAST SEEN: 2025-02-26 19:15:59 UTC
INSTANCE COUNT: 1

Temporary Replication Initiators HIGH
LAST SEEN: 2025-02-26 19:15:59 UTC
INSTANCE COUNT: 1

Right-click the Source IP to *Search Events* by field, or launch an *Entity Lookup*, *Global Search* or *Guided Query*. You can use queries based on the observation details to create a new detector. For more information, see Creating a detector on page 39.



Behavioral Observations > High Service Diversity in Kerberos TGS Requests

Observation: High Service Diversity in Kerberos TGS Requests

OBSERVATION CLASS: Specific
OBSERVATION CATEGORY: Relationship
OBSERVATION DESCRIPTION: High-volume Kerberos traffic was observed that often is seen in Kerberoasting attacks.

Showing most recent 2 out of 2 e

Timeframe	Src		Confidence	Evidence Iql	Distinct services in succes...	Count of distinct services i...	Duration (seconds) of acti...	Average duration (seconds...
2025-03-04 00:00:42 Z	10.1(		HIGH	event_type = 'kerberos' AND src.ip = '10.10.6.3'...	kerbuser/server-01.atrlab.loc...	14	0.633	0.045
2025-02-26 18:44:34 Z	10.10.6.3		HIGH	event_type = 'kerberos' AND src.ip = '10.10.6.3'...	kerbuser4/server-01.atrlab.lo...	15	0.593	0.037

Behavioral Observation fields

Property	Description
`category`	Category of the observation: `asset`, `account`, `software`, `flow`, `file`, `relationship`
`class`	Class of the activity: `anomalous`, `newly observed`, `specific`

Property	Description
`dst_ip`	The destination IP of the impacted device. There may be observations with no destination device.
`src_ip`	The source IP of the impacted device. There may be observations with no source device.

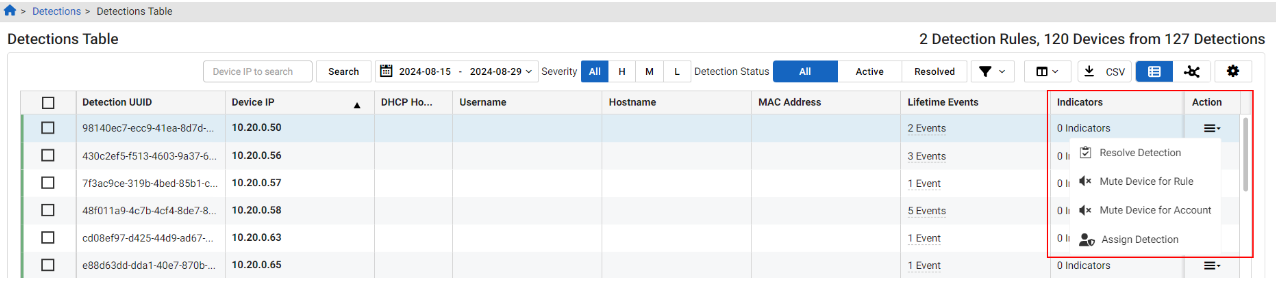
Assigning detections

Assigning detections in FortiNDR Cloud allows you to manage and delegate security tasks efficiently. This topic provides instructions on how to assign, unassign, and view detections across various pages within the portal.

Assigning detections from the Detections Table

To assign a detection from the Detections Table:

1. Go to *Detections > Detections Table*.
2. Click the *Actions* menu at the right side of the page and select *Assign Detection*. The *Assign* dialog opens.



Detections > Detections Table

Detections Table

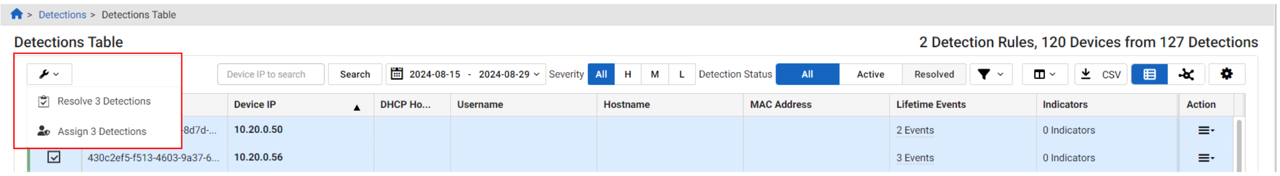
2 Detection Rules, 120 Devices from 127 Detections

□	Detection UUID	Device IP	DHCP Ho...	Username	Hostname	MAC Address	Lifetime Events	Indicators	Action
□	98140ec7-ecc9-41ea-8d7d-...	10.20.0.50					2 Events	0 Indicators	
□	430c2ef5-f513-4603-9a37-6...	10.20.0.56					3 Events	0 I	
□	7f3ac9ce-319b-4bed-85b1-c...	10.20.0.57					1 Event	0 I	
□	48f011a9-4c7b-4cf4-8de7-8...	10.20.0.58					5 Events	0 I	
□	cd08ef97-d425-44d9-ad67-...	10.20.0.63					1 Event	0 I	
□	e88d63dd-dda1-40e7-870b-...	10.20.0.65					1 Event	0 Indicators	

3. From the *Assignee* dropdown, select a user from the list. You have the option of assigning the detection to yourself.
4. (Optional) Enter a comment in the *Comments* field.
5. Click *Confirm*. A confirmation appears at the top of the page.

To bulk assign detections:

1. Go to *Detections > Detections Table*.
2. Select the detections you want to assign. The *Tools* menu appears.
3. Select *Assign <#> Detections*. The *Assign* dialog opens.



Detections > Detections Table

Detections Table

2 Detection Rules, 120 Devices from 127 Detections

		Device IP	DHCP Ho...	Username	Hostname	MAC Address	Lifetime Events	Indicators	Action
	-8d7d-...	10.20.0.50					2 Events	0 Indicators	
☑	430c2ef5-f513-4603-9a37-6...	10.20.0.56					3 Events	0 Indicators	

4. From the *Assignee* dropdown, select a user from the list. You have the option of assigning the detection to yourself.
5. (Optional) Enter a comment in the *Comments* field.
6. Click *Confirm*. A confirmation appears at the top of the page.

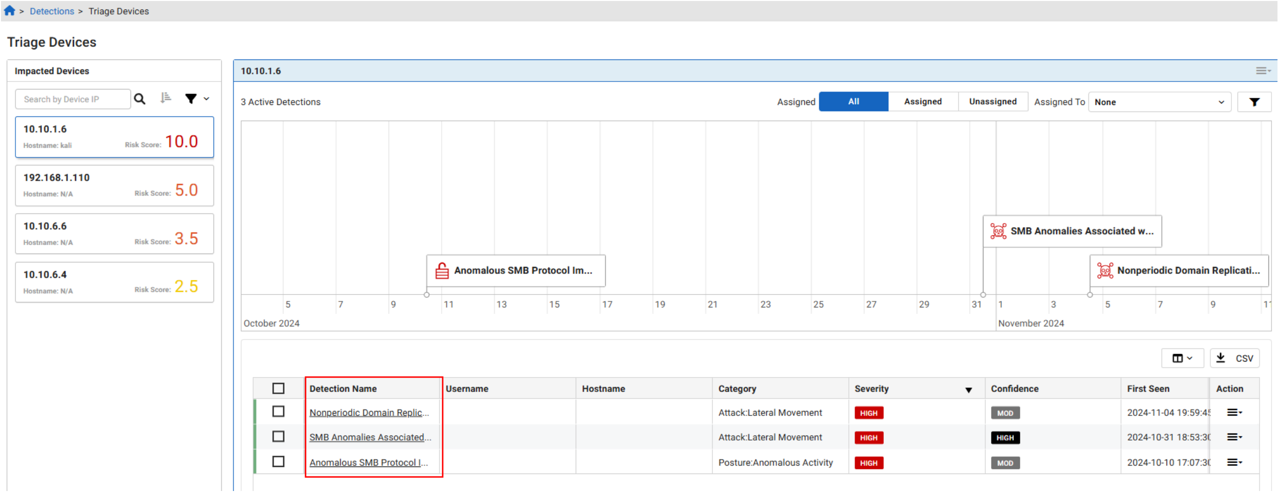
To unassign detections:

1. Go to *Detections > Detections Table*.
2. Click the Actions menu at the right side of the page and select *Assign Detection*. The *Assign* dialog opens.
3. From the *Assignee* dropdown, select *Unassigned*.
4. (Optional) Enter a comment in the *Comments* field.
5. Click *Confirm*. A confirmation appears at the top of the page.

Assigning detections from the Triage Devices page

To assign detections from the Triage Device page:

1. Go to *Detections > Triage Devices*
2. In the *Impacted Devices* pane, select a device.
3. In the detections table at the bottom of the page, click a detector in the *Detection Name* column.



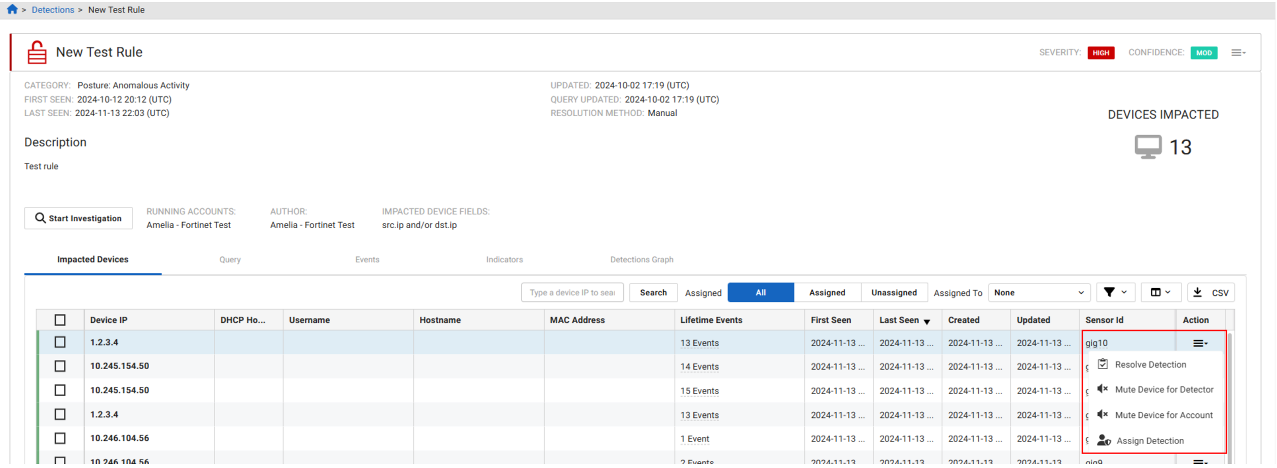
☐	Detection Name	Username	Hostname	Category	Severity	Confidence	First Seen	Action
☐	Nonperiodic Domain Replic...			Attack:Lateral Movement	HIGH	MOD	2024-11-04 19:59:4	≡
☐	SMB Anomalies Associated...			Attack:Lateral Movement	HIGH	HIGH	2024-10-31 18:53:3	≡
☐	Anomalous SMB Protocol I...			Posture:Anomalous Activity	HIGH	MOD	2024-10-10 17:07:3	≡

4. At the bottom of the page, click *Assign Detection*. The *Assign* dialog opens.
5. From the *Assignee* dropdown, select *Unassigned*.
6. (Optional) Enter a comment in the *Comments* field.
7. Click *Confirm*. A confirmation appears at the top of the page.

Assigning detections from the Triage detections page

To assign a detection from the Triage detections page:

1. Go to *Detections > Triage detections*. The *Triage detections* page opens.
2. Open a detector in the list.
3. Click the *Actions* menu on the right side of the page and select *Assign Detection*. The *Assign* dialog opens.



Detections > New Test Rule

New Test Rule — SEVERITY: HIGH — CONFIDENCE: MOD

CATEGORY: Posture: Anomalous Activity
FIRST SEEN: 2024-10-12 20:12 (UTC)
LAST SEEN: 2024-11-13 22:03 (UTC)

UPDATED: 2024-10-02 17:19 (UTC)
QUERY UPDATED: 2024-10-02 17:19 (UTC)
RESOLUTION METHOD: Manual

DEVICES IMPACTED 13

Description

Test rule

Start Investigation — RUNNING ACCOUNTS: Amelia - Fortinet Test — AUTHOR: Amelia - Fortinet Test — IMPACTED DEVICE FIELDS: src.ip and/or dst.ip

☐	Device IP	DHCP Ho...	Username	Hostname	MAC Address	Lifetime Events	First Seen	Last Seen	Created	Updated	Sensor Id	Action
☐	1.2.3.4					13 Events	2024-11-13 ...	2024-11-13 ...	2024-11-13 ...	2024-11-13 ...	gig10	≡
☐	10.245.154.50					14 Events	2024-11-13 ...	2024-11-13 ...	2024-11-13 ...	2024-11-13 ...		
☐	10.245.154.50					15 Events	2024-11-13 ...	2024-11-13 ...	2024-11-13 ...	2024-11-13 ...		
☐	1.2.3.4					13 Events	2024-11-13 ...	2024-11-13 ...	2024-11-13 ...	2024-11-13 ...		
☐	10.246.104.56					1 Event	2024-11-13 ...	2024-11-13 ...	2024-11-13 ...	2024-11-13 ...		
☐	10.246.104.56					2 Events	2024-11-13	2024-11-13	2024-11-13	2024-11-13	gig9	≡

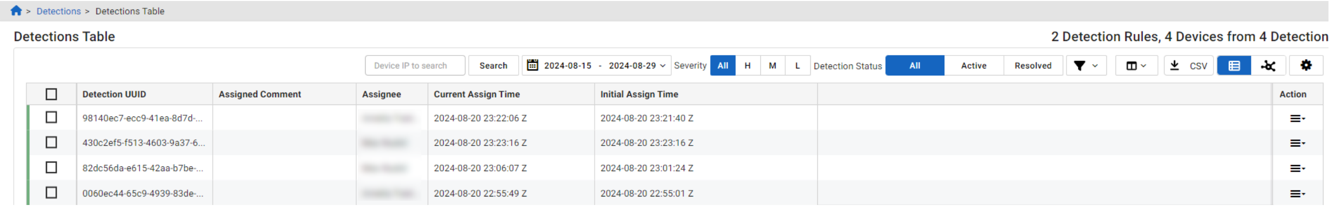
4. From the *Assignee* dropdown, select a user from the list. You have the option of assigning the detection to yourself.
5. (Optional) Enter a comment in the *Comments* field.
6. Click *Confirm*. A confirmation appears at the top of the page.

Viewing assigned detections

Detections Table

The Detections Table contains four columns with assignment information:

Assigned Comment	Notes about the detection to the assignee.
Assignee	The name of the user assigned to the detection.
Current Assign Time	The date and time the assignment was updated.
Initial Assign Time	The date and time the detection was assigned.



Detections > Detections Table

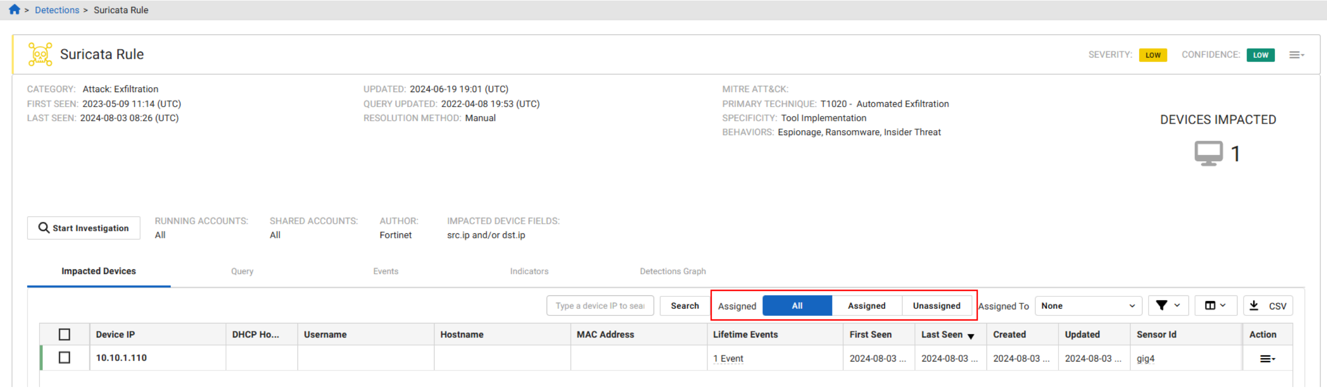
Detections Table — 2 Detection Rules, 4 Devices from 4 Detection

☐	Detection UUID	Assigned Comment	Assignee	Current Assign Time	Initial Assign Time		Action
☐	98140ec7-ecc9-41ea-8d7d-...		[redacted]	2024-08-20 23:22:06 Z	2024-08-20 23:21:40 Z		≡
☐	430c2ef5-f513-4603-9a37-6...		[redacted]	2024-08-20 23:23:16 Z	2024-08-20 23:23:16 Z		≡
☐	82dc56da-e615-42aa-b7be-...		[redacted]	2024-08-20 23:06:07 Z	2024-08-20 23:01:24 Z		≡
☐	0060ec44-65c9-4939-83de-...		[redacted]	2024-08-20 22:55:49 Z	2024-08-20 22:55:01 Z		≡

You can also use the filter to show *Assigned* and *Unassigned* detections.

Triage detections and Triage Devices

The *Assigned Comment*, *Assignee*, *Current Assign Time* and *Initial Assign Time* columns appear in the detections table of the Triage detections and Triage Devices pages. To filter the table, use the *Assigned*, *Unassiagned* and *Assigned to* filters at the top of the table.



Detections > Suricata Rule

Suricata Rule

SEVERITY: LOW CONFIDENCE: LOW

CATEGORY: Attack: Exfiltration
FIRST SEEN: 2023-05-09 11:14 (UTC)
LAST SEEN: 2024-08-03 08:26 (UTC)

UPDATED: 2024-06-19 19:01 (UTC)
QUERY UPDATED: 2022-04-08 19:53 (UTC)
RESOLUTION METHOD: Manual

MITRE ATT&CK:
PRIMARY TECHNIQUE: T1020 - Automated Exfiltration
SPECIFICITY: Tool Implementation
BEHAVIORS: Espionage, Ransomware, Insider Threat

DEVICES IMPACTED 1

RUNNING ACCOUNTS: All
SHARED ACCOUNTS: All
AUTHOR: Fortinet
IMPACTED DEVICE FIELDS: src.ip and/or dst.ip

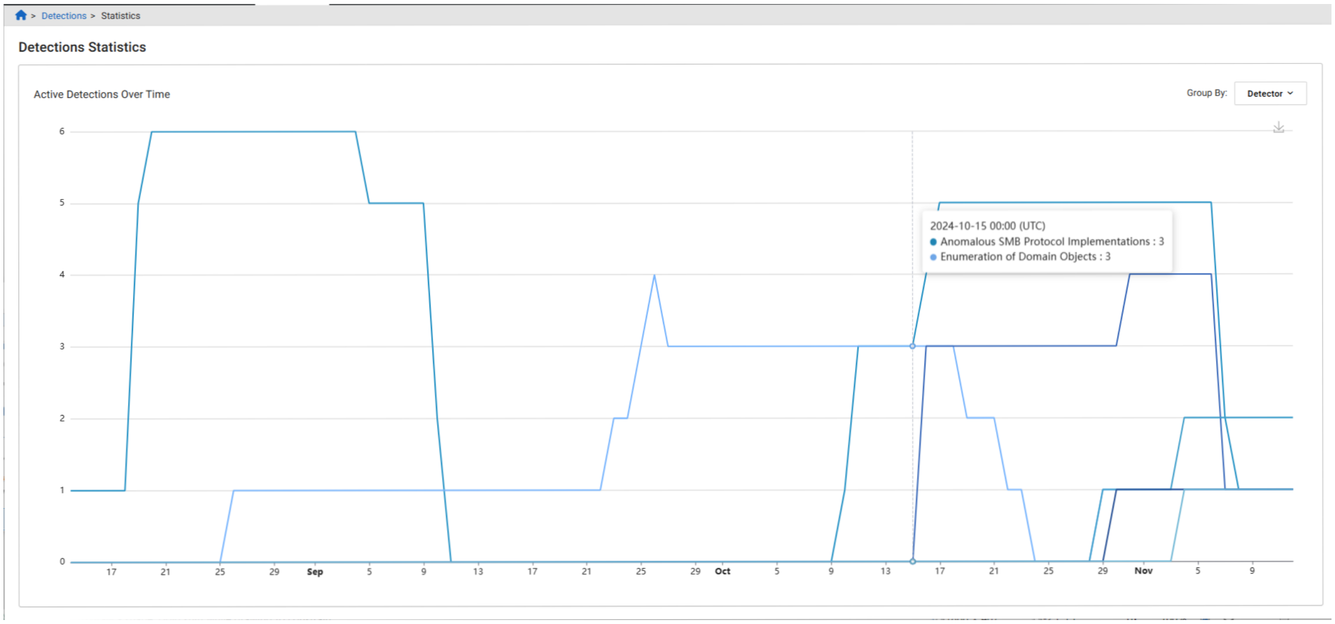
☐	Device IP	DHCP Ho...	Username	Hostname	MAC Address	Lifetime Events	First Seen	Last Seen	Created	Updated	Sensor Id	Action
☐	10.10.1.110					1 Event	2024-08-03 ...	2024-08-03 ...	2024-08-03 ...	2024-08-03 ...	gig4	≡

Viewing detections *Assigned to me*:

To quickly view detections that are assigned to you, in the *Triage Detections* or *Triage Devices* pages, click the filter icon and from the *Assigned to* dropdown, select *Assigned to me*.

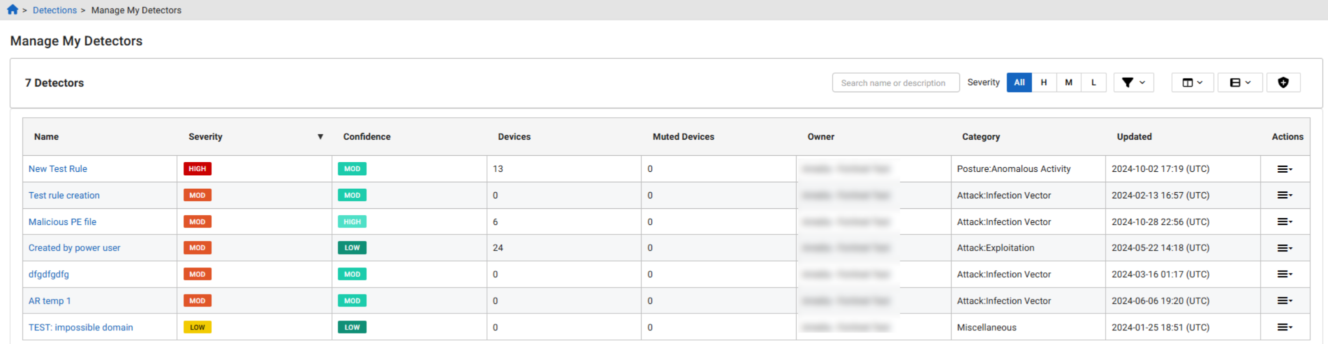
Statistics

The *Statistics* page shows the *Active Detections Over Time* graph. Hover a line in the graph to view the defections for specific day. You can group the statistics by *Detector*, *Category* or *Severity*.



Managing detectors

The *Manage My Detectors* page allows you to view, edit and create detectors. You can also mute, disable and delete detectors.



Detections > Manage My Detectors

Manage My Detectors

7 Detectors

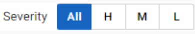
Name	Severity	Confidence	Devices	Muted Devices	Owner	Category	Updated	Actions
New Test Rule	HIGH	MOD	13	0	[redacted]	Posture:Anomalous Activity	2024-10-02 17:19 (UTC)	☰
Test rule creation	MOD	MOD	0	0	[redacted]	Attack:Infection Vector	2024-02-13 16:57 (UTC)	☰
Malicious PE file	MOD	HIGH	6	0	[redacted]	Attack:Infection Vector	2024-10-28 22:56 (UTC)	☰
Created by power user	MOD	LOW	24	0	[redacted]	Attack:Exploitation	2024-05-22 14:18 (UTC)	☰
dfgdfgdfg	MOD	MOD	0	0	[redacted]	Attack:Infection Vector	2024-03-16 01:17 (UTC)	☰
AR temp 1	MOD	MOD	0	0	[redacted]	Attack:Infection Vector	2024-06-06 19:20 (UTC)	☰
TEST: impossible domain	LOW	LOW	0	0	[redacted]	Miscellaneous	2024-01-25 18:51 (UTC)	☰

The *Manage my Detectors* page displays the following information:

Name	Click to view the detector details. An icon is displayed with the detector is disabled (⚙) or muted (🔇)
Muted	Displays an icon that indicates the detector is muted (🔇) or unmuted (🔊).
Enabled	Displays an icon that indicates the detector is enabled (🛡) or disabled (⚙).
Severity	The FortiGuard ATR severity level (Low, Moderate or High).
Confidence	The FortiGuard ATR confidence level (Low, Moderate or High).

Devices	The number of devices impacted by the detector. To view the devices, click the link in the *Name* column and review the details in the Impacted *Devices* and *Events* tab.
Muted Devices	The number of devices muted for the detector.
First	The date the detector was first detected.
Last	The date the detector was last detected.
Owner	The account name.
Category	The detector category.
Updated	The date the detector was updated.
Actions	Click the dropdown menu to: • Edit • Mute detector • Mute Device for detector • Enable detector • Delete detector

The following tools are available in the toolbar

<table>
<tr><td> </td><td>Filter the table by the detector name.</td></tr>
<tr><td> </td><td>Filter the table by the FortiGuard ATR confidence level (Low, Moderate or High).</td></tr>
<tr><td> </td><td>Additional filters. Filters persist until you refresh the page (except for <i>Search title</i>). An indicator (●) is added when you change a filter from the default. A number indicates the number of changes that were applied. Click <i>Reset to Default</i> to clear the filters.
<table>
<tr><th>Filter</th><th>Description</th></tr>
<tr><td><b>Category</b></td><td>Click to select a category from the dropdown.</td></tr>
<tr><td><b>Technique</b></td><td>Click to select a technique from the dropdown.</td></tr>
<tr><td><b>Confidence</b></td><td>Filter by FortiGuard ATR confidence level (All, H, M or H). <i>All</i> is the default.</td></tr>
<tr><td><b>Detection Status</b></td><td>Filter by detection status (<i>All</i>, <i>Active</i> or <i>Idle</i>). <i>All</i> is the default.</td></tr>
<tr><td><b>Muted</b></td><td>Select <i>Unmuted</i> or <i>Muted</i> . <i>All</i> is the default.</td></tr>
<tr><td><b>Disabled</b></td><td>Select <i>Enabled</i> or <i>Disabled</i>. <i>All</i> is the default.</td></tr>
</table></td></tr>
<tr><td> </td><td>Show or hide all columns in the table, or select the columns you want to view.</td></tr>
<tr><td> </td><td>Set the page height.</td></tr>
<tr><td> </td><td>Create a new detector. See Creating a detector on page 39.</td></tr>
</table>

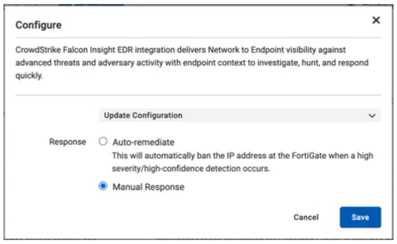
Response configuration

The *Response Configuration* feature allows you to automatically ban an IP address when a high-severity and high-confidence detection occurs.

Automated integration response is available for FortiEDR, CrowdStrike Falcon EDR and FortiGate via FortiManager at this time. Only a single integration can be set to *Auto-Remediate* at a time. Other integrations may be configured, but must be set up to respond manually.

To enable automated response configuration:

1. Go to *Detections > Response Configuration*. The *Integration Response Configuration* dialog opens.
2. In the *Action* column, click *Edit* next to the integration.
3. In the *Configure* dialog, select *Auto-remediate* and click *Save*.

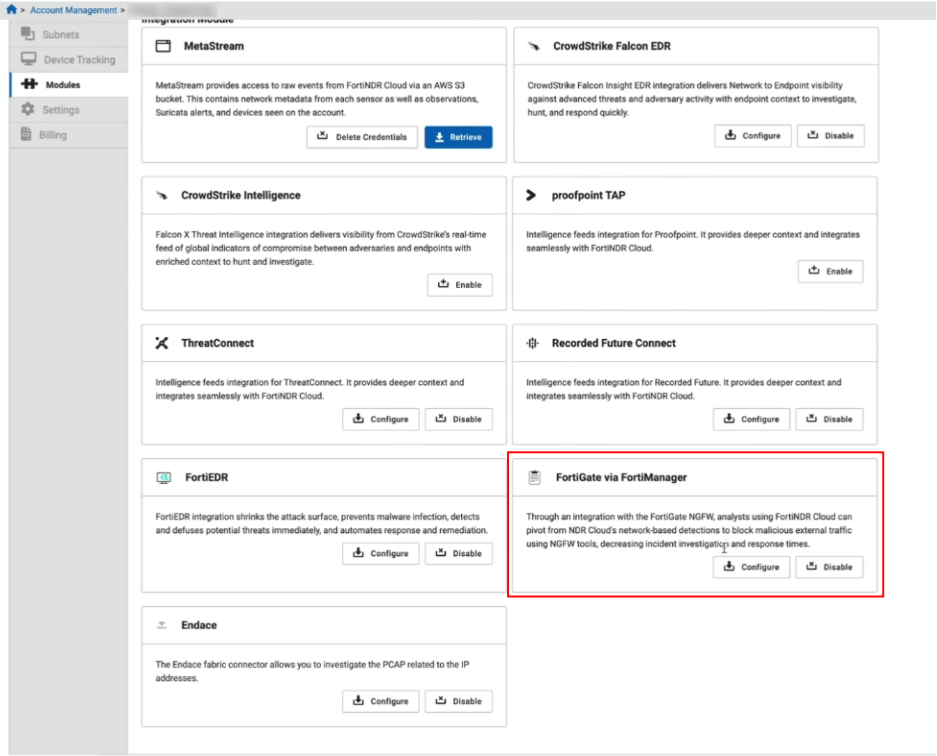
   Configure

   CrowdStrike Falcon Insight EDR integration delivers Network to Endpoint visibility against advanced threats and adversary activity with endpoint context to investigate, hunt, and respond quickly.

   Update Configuration

   Response ○ Auto-remediate
   This will automatically ban the IP address at the FortiGate when a high severity/high-confidence detection occurs.
   ● Manual Response

   You can also enable *Response Configuration* in the *Account Management > Modules* page by clicking *Configure* in the integration's tile.



MetaStream

MetaStream provides access to raw events from FortiNDR Cloud via an AWS S3 bucket. This contains network metadata from each sensor as well as observations, Suricata alerts, and devices seen on the account.

CrowdStrike Falcon EDR

CrowdStrike Falcon Insight EDR integration delivers Network to Endpoint visibility against advanced threats and adversary activity with endpoint context to investigate, hunt, and respond quickly.

CrowdStrike Intelligence

Falcon X Threat Intelligence integration delivers visibility from CrowdStrike's real-time feed of global indicators of compromise between adversaries and endpoints with enriched context to hunt and investigate.

proofpoint TAP

Intelligence feeds integration for Proofpoint. It provides deeper context and integrates seamlessly with FortiNDR Cloud.

ThreatConnect

Intelligence feeds integration for ThreatConnect. It provides deeper context and integrates seamlessly with FortiNDR Cloud.

Recorded Future Connect

Intelligence feeds integration for Recorded Future. It provides deeper context and integrates seamlessly with FortiNDR Cloud.

FortiEDR

FortiEDR integration shrinks the attack surface, prevents malware infection, detects and defuses potential threats immediately, and automates response and remediation.

FortiGate via FortiManager

Through an integration with the FortiGate NGFW, analysts using FortiNDR Cloud can pivot from NDR Cloud's network-based detections to block malicious external traffic using NGFW tools, decreasing incident investigation and response times.

Endace

The Endace fabric connector allows you to investigate the PCAP related to the IP addresses.

Creating column profiles

You can create and manage column profiles to help you organize and customize your data views. Custom profiles can also be shared with other users in your organization.

To create a column profile:

1. Go to:
   - *Detections > Detections table.*
   - *Detections > Triage Devices.*
   - *Investigation results*
2. Select the columns you want to include in the profile, apply filters, and adjust the column width.
3. Click the column selector icon.
4. Under *Column Profiles*, click *Create New Profile*. The Column Profile dialog opens.
5. Configure the column profile settings and click *Save*.

Name	Enter a name for the column profile.
Include time range	Select one of the following: • *Absolute (xxx-xx-xx - xxxx-xx-xx)*: This is the date range in the date picker.

	• *Relative (last xx Days)*: The value of *xx* is the difference between the start date and the end date. This option only applies to the Detections Table.
Include other filters	Enable to include any filters you applied to the table. This option only applies to the Detections Table.
Shared	Enable to share the column profile with other members of your organization.

To view and edit column profiles:

1. Select the columns you want to include in the profile, apply filters, and adjust the column width.
2. Click the column selector icon.
3. Under *Column Profiles > My profiles*, click the profile you want to view.
4. Click *Save this Profile* to update any changes you made.

Risk score calculation

The risk score for a device is calculated as a weighted sum of individual detection scores, based on a predefined matrix. This sum is capped at a maximum score, ensuring it does not exceed a defined ceiling. If a device has multiple detections with varying severities, the ceiling is determined by the highest severity level among those detections.

If a detection is muted or resolved, its score is 0. Otherwise, the score is calculated using the following matrix:

Scoring Matrix

Severity	Low Confidence	Moderate Confidence	High Confidence
Low	0.1	0.3	0.5
Moderate	0.5	1	2.5
High	1	2.5	5

Maximum Score Limits

To prevent extreme values, the score is capped based on severity:

Severity	Max Points
Low	2.5

Severity	Max Points
Moderate	5
High	10

This scoring system helps prioritize detections based on how confident and severe they are, while also allowing flexibility for high-severity cases.

Investigations

Use the tools in the *Investigations* module to respond to detections and to hunt for malicious activity on you network.

Entity lookup

An *Entity Lookup* (or search) is the starting point for an investigation if you have very little information to work with.

You can start an Entity Search by entering an IP address or domain in the *Search* field in the navigation menu at the top of the portal.

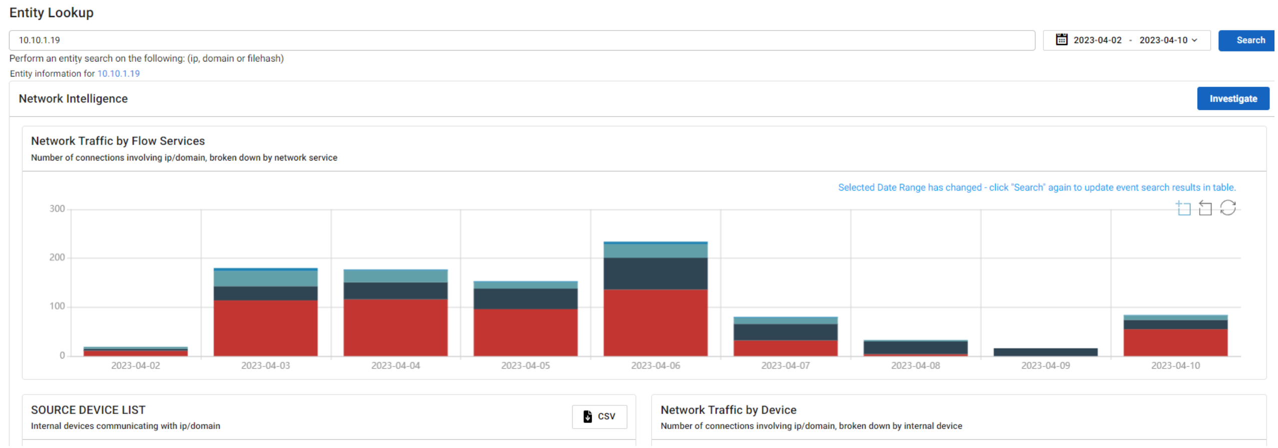
To perform an entity lookup:

1. Go to *Investigations* > *Entity Lookup*.
2. Enter an IP address or a domain name in the search field. Separate Multiple IP addresses and domain names by spaces.
3. Click the date picker to select the time range. The default is *Last Seven Days*. The maximum is 90 days.

   If you are pivoting to the *Entity Lookup* from a page with a time range of more than the last 90 days, the date range picker will display a yellow border around the date field and default to the *Last Seven Days*.

4. Click *Search*. The following results are returned.

Network Intelligence	Network traffic by service, by device, and source addresses interacting with the entity
Entity Intelligence	WHOIS, IP History, Registrar History, Passive DNS
Security Intelligence	Associated VirusTotal Detections, VirusTotal Detections Over Time, Detections, and Observations,



Entity Lookup

10.10.1.19

Perform an entity search on the following: (ip, domain or filehash)

Entity information for 10.10.1.19

Network Intelligence

Network Traffic by Flow Services

Number of connections involving ip/domain, broken down by network service

Selected Date Range has changed - click "Search" again to update event search results in table.

SOURCE DEVICE LIST

Internal devices communicating with ip/domain

Network Traffic by Device

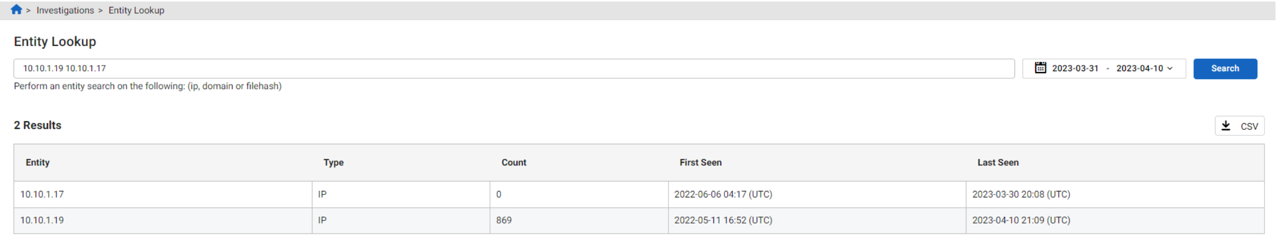
Number of connections involving ip/domain, broken down by internal device

You can view the *Entity Panel* by clicking the IP address at the top-left of the page next to *Entity information for <IP address>*.

5. (Optional) If multiple IP addresses or domain names are looked up, right-click on a result and select *Entity Lookup* to view the intelligence panes.
6. (Optional) Click *Investigate* to launch the new investigation.

To perform a bulk entity export:

1. In the search field, enter IP addresses or a domain names separated by spaces.
2. Click *Search*.
3. Click the *CSV* button. A CSV file with the *timestamp*, *action*, *param*, *user_uuid*, *account_uuid*, and *account* are downloaded to your device.



> Investigations > Entity Lookup

Entity Lookup

10.10.1.19 10.10.1.17

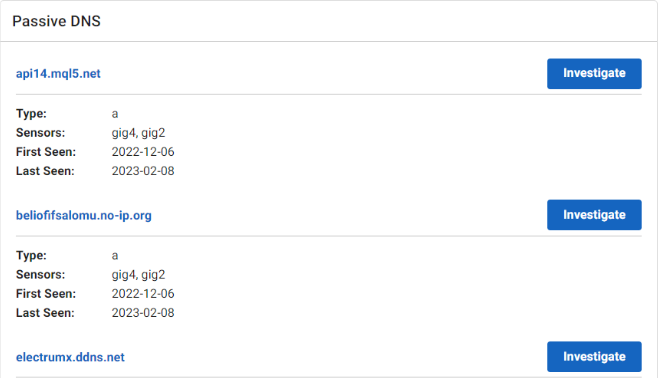
Perform an entity search on the following: (ip, domain or filehash)

2 Results

Entity	Type	Count	First Seen	Last Seen
10.10.1.17	IP	0	2022-06-06 04:17 (UTC)	2023-03-30 20:08 (UTC)
10.10.1.19	IP	869	2022-05-11 16:52 (UTC)	2023-04-10 21:09 (UTC)

Passive DNS

Passive DNS links on the entity panel function like normal links. Clicking the link replaces the entity panel with the panel for the clicked on element.



Passive DNS

api14.mql5.net Investigate

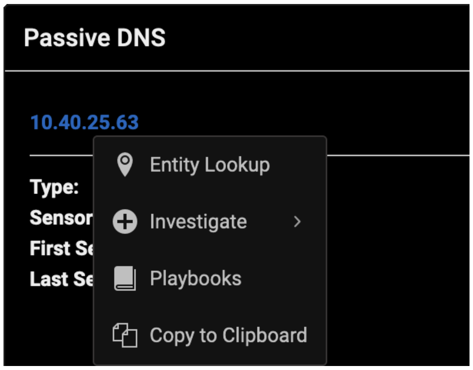
Type: a
Sensors: gig4, gig2
First Seen: 2022-12-06
Last Seen: 2023-02-08

beliofifsalomu.no-ip.org Investigate

Type: a
Sensors: gig4, gig2
First Seen: 2022-12-06
Last Seen: 2023-02-08

electrumx.ddns.net Investigate

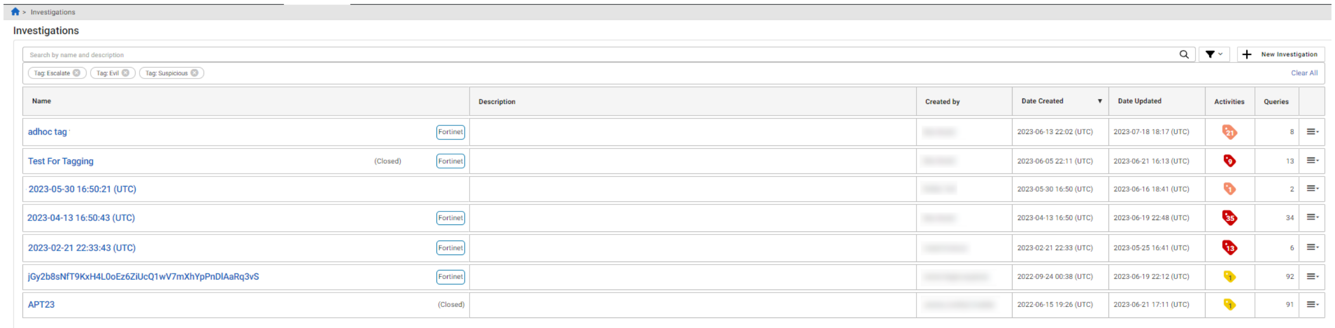
Right-clicking opens a context menu.



Option	Description
Entity Lookup	Open the entity lookup page for the item.
Copy to Clipboard	Copy the item to the clipboard.
Guided Queries	Launch Guided Queries. This options is not available for ad-hoc search result items
Investigate	Show appropriate pivots for the item type. This options is not available for ad-hoc search result items.
Search Events	Show the event searches appropriate for the type. The text in the search box is replaced, but the search will not run automatically. This options is only available for ad-hoc search result items. Types include: • IP: • ip='IP' • dst.ip='IP' • src.ip='IP' • domain: • domain='domain'

Investigate

Investigations allow you to quickly obtain details required in investigations via search queries and/or Guided Queries.



Investigations

Name		Description	Created by	Date Created	Date Updated	Activities	Queries	
adhoc tag	Fortinet		[redacted]	2023-06-13 22:02 (UTC)	2023-07-18 18:17 (UTC)	21	8	≡
Test For Tagging (Closed)	Fortinet		[redacted]	2023-06-05 22:11 (UTC)	2023-06-21 16:13 (UTC)	9	13	≡
2023-05-30 16:50:21 (UTC)			[redacted]	2023-05-30 16:50 (UTC)	2023-06-16 18:41 (UTC)	1	2	≡
2023-04-13 16:50:43 (UTC)	Fortinet		[redacted]	2023-04-13 16:50 (UTC)	2023-06-19 22:48 (UTC)	35	34	≡
2023-02-21 22:33:43 (UTC)	Fortinet		[redacted]	2023-02-21 22:33 (UTC)	2023-05-25 16:41 (UTC)	13	6	≡
jGy2b8sNfT9KxH4L0oEz6ZiUcQ1wV7mXhYpPnDlAaRq3vS	Fortinet		[redacted]	2022-09-24 00:38 (UTC)	2023-06-19 22:12 (UTC)	1	92	≡
APT23	(Closed)		[redacted]	2022-06-15 19:26 (UTC)	2023-06-21 17:11 (UTC)	1	91	≡

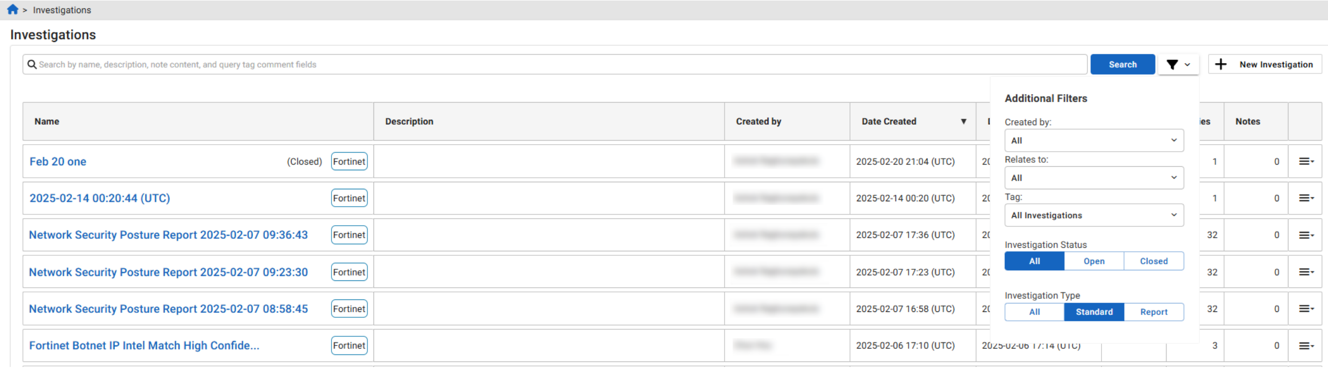
The Investigations page displays the following information:

Name	The investigation name.
Description	The description of the investigation.
Created by	The user who created the investigation.
Date Created	The date the investigation was created.
Date Updated	The date the investigation was updated.
Queries	The number of queries added to the investigation.

Filtering investigations

Click the filter icon next to the *Search* button to view by following attributes:

Created by	Select FortiNDR Cloud user from the list.
Relates to	Select a related investigations from the list.
Tag	You have the option of viewing only tagged or untagged investigations. You can also filter by a specific tag.
Investigation Status	Select All , Open or Closed investigations.
Investigation Type	Select *All*, *Standard* or *Report*.



Investigations

Investigations

Search by name, description, note content, and query tag comment fields

Name	Description	Created by	Date Created ▼	I		ies	Notes	
Feb 20 one (Closed) Fortinet		[redacted]	2025-02-20 21:04 (UTC)	20		1	0	≡
2025-02-14 00:20:44 (UTC) Fortinet		[redacted]	2025-02-14 00:20 (UTC)	20		1	0	≡
Network Security Posture Report 2025-02-07 09:36:43 Fortinet		[redacted]	2025-02-07 17:36 (UTC)	20		32	0	≡
Network Security Posture Report 2025-02-07 09:23:30 Fortinet		[redacted]	2025-02-07 17:23 (UTC)	20		32	0	≡
Network Security Posture Report 2025-02-07 08:58:45 Fortinet		[redacted]	2025-02-07 16:58 (UTC)	20		32	0	≡
Fortinet Botnet IP Intel Match High Confide... Fortinet		[redacted]	2025-02-06 17:10 (UTC)	2025-02-06 17:14 (UTC)		3	0	≡

Additional Filters

Created by: All

Relates to: All

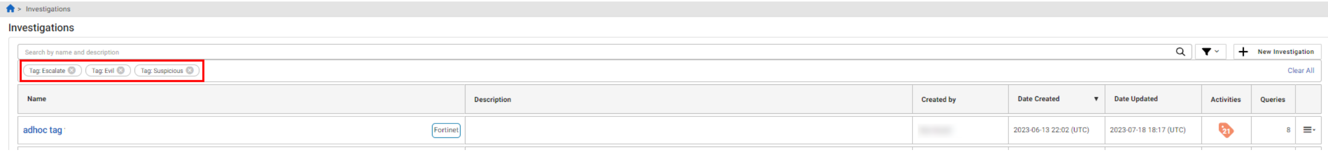
Tag: All Investigations

Investigation Status: ● All ○ Open ○ Closed

Investigation Type: ○ All ● Standard ○ Report

The selected filters are persistent. For example, if you sort the table by *Date Updated* and then browse to a different page in the GUI, the investigations table will still be sorted by *Date Updated* when you return to the *Investigations* page.

When you add filters, the filter chips will be shown under search bar.



Investigations

Investigations

Search by name and description

Tag: Escalate ⊗ Tag: Evil ⊗ Tag: Suspicious ⊗

Name	Description	Created by	Date Created ▼	Date Updated	Activities	Queries	
adhoc tag Fortinet		[redacted]	2023-06-13 22:02 (UTC)	2023-07-18 18:17 (UTC)	21	8	≡

Creating investigations

An investigation is run against the account shown in the account picker. The account name that owns the investigation appears to the right of the investigation name if it differs from your primary account.

- If you have access to multiple accounts and the account shown in the account picker is different from the account that contains your user, then the account is listed.
- If you have access to multiple accounts, and the account shown in the account picker is the same as the account that contains your user, then the account is not shown in the investigation list. The investigation created is run against the account shown in the account picker.

To create an investigation:

1. Go to *Investigations* and click *New Investigation* at the top-right corner of the page. The *New Investigation* dialog opens.

   The default investigation name is the first and last name of the user creating the investigation with the time stamp of when the investigation was created.
2. Enter an *Investigation name* and *Description*, then click *Create Investigation*.

3. Add the following to your investigation:
   - Query: Adding queries to an investigation on page 79
   - Guided query: Adding a guided query to an investigation on page 107
   - Notes: Adding notes to an investigation on page 81

To close an investigation:

1. Go to *Investigations* and click the investigation you want to close.
2. Click the gear icon at the top-right side of the page and select *Close Investigation*. A confirmation dialog opens.
3. Click *Close Investigation*.

To delete an investigation:

1. Go to *Investigations* and click the investigation you want to delete.
2. Click the gear icon at the top-right side of the page and select *Delete Investigation*. A confirmation dialog opens.
3. Click *Confirm*.

⚠ Deleting an investigation is irreversible and will remove everything in the investigation

To edit an investigation name:

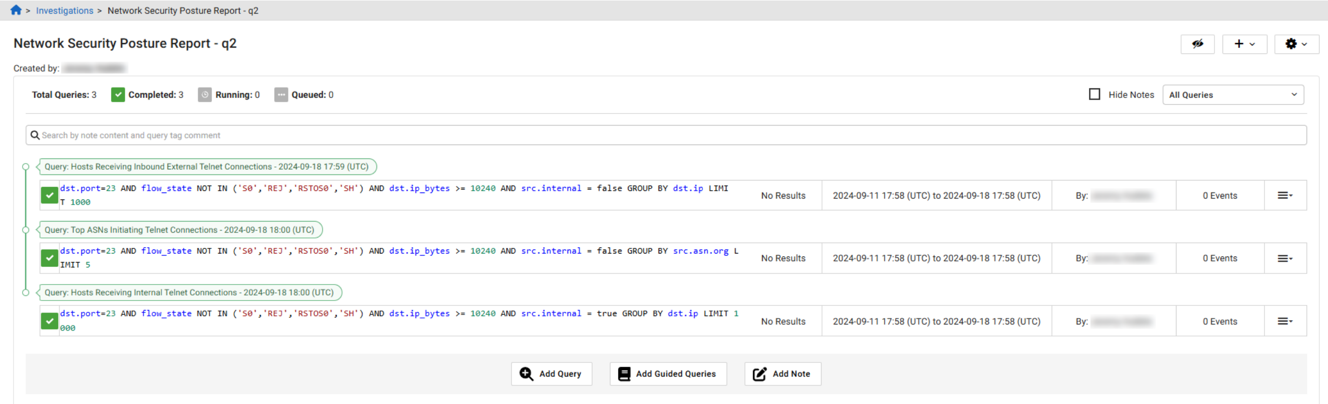
1. Go to *Investigations* and click the investigation you want to edit.
2. Click the gear icon at the top-right side of the page and select *Edit Investigation*. A dialog opens.
3. Update the *Investigation name* and *Description* and click *Save*.

Viewing investigation details

To view the investigation details, go to *Investigations*, and click an investigation name. The investigations details page displays the following information:

- Investigation Creator
- Link to single or multiple related detections
- IQL query
- Notes (if any)
- Date/time the query was added
- Number of events (if complete)
- Executed Guided Queries that are part of that investigation
- Close date (if investigation was closed)

If the investigation contains more than one related detection, the *MORE>>* link appears. You can click the link to view all the related detections.



Investigations > Network Security Posture Report - q2

Network Security Posture Report - q2

Created by: [redacted]

Total Queries: 3 ✓ Completed: 3 ◷ Running: 0 ••• Queued: 0 □ Hide Notes All Queries

Search by note content and query tag comment

Query: Hosts Receiving Inbound External Telnet Connections - 2024-09-18 17:59 (UTC)

```
dst.port=23 AND flow_state NOT IN ('S0','REJ','RSTOS0','SH') AND dst.ip_bytes >= 10240 AND src.internal = false GROUP BY dst.ip LIMI
T 1000
```

No Results | 2024-09-11 17:58 (UTC) to 2024-09-18 17:58 (UTC) | By: [redacted] | 0 Events

Query: Top ASNs Initiating Telnet Connections - 2024-09-18 18:00 (UTC)

```
dst.port=23 AND flow_state NOT IN ('S0','REJ','RSTOS0','SH') AND dst.ip_bytes >= 10240 AND src.internal = false GROUP BY src.asn.org L
IMIT 5
```

No Results | 2024-09-11 17:58 (UTC) to 2024-09-18 17:58 (UTC) | By: [redacted] | 0 Events

Query: Hosts Receiving Internal Telnet Connections - 2024-09-18 18:00 (UTC)

```
dst.port=23 AND flow_state NOT IN ('S0','REJ','RSTOS0','SH') AND dst.ip_bytes >= 10240 AND src.internal = true GROUP BY dst.ip LIMIT 1
000
```

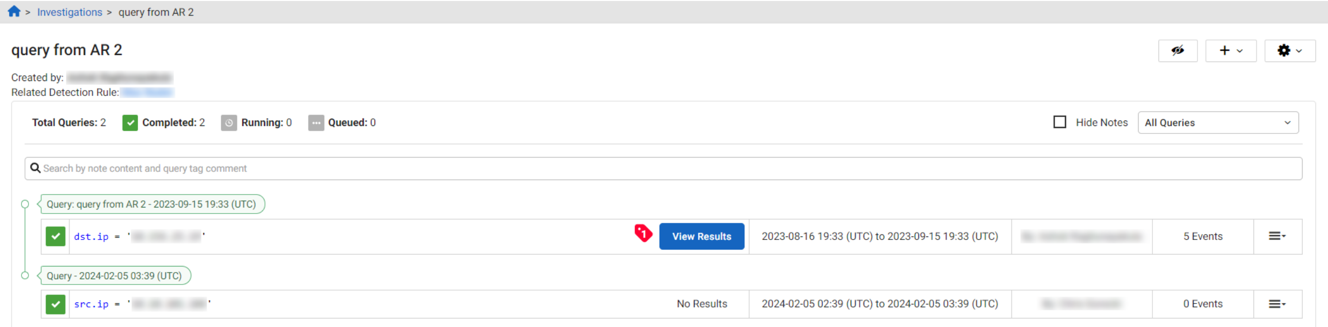
No Results | 2024-09-11 17:58 (UTC) to 2024-09-18 17:58 (UTC) | By: [redacted] | 0 Events

Query Status Icons

✓	Query completed successfully. Results (if any) are available.
◷	Query is currently running.
•••	Query is queued to run. It will run automatically when resources are available.
⚠	Query failed due to an internal error. If problem persists, please contact Fortinet support.

Viewing results

To view the investigation results, click the *View Results* button in the investigation details.



Investigations > query from AR 2

query from AR 2

Created by: [redacted]

Related Detection Rule: [redacted]

Total Queries: 2 ✓ Completed: 2 ◷ Running: 0 ••• Queued: 0 □ Hide Notes All Queries

Search by note content and query tag comment

Query: query from AR 2 - 2023-09-15 19:33 (UTC)

```
dst.ip = '[redacted]'
```

1 | View Results | 2023-08-16 19:33 (UTC) to 2023-09-15 19:33 (UTC) | [redacted] | 5 Events

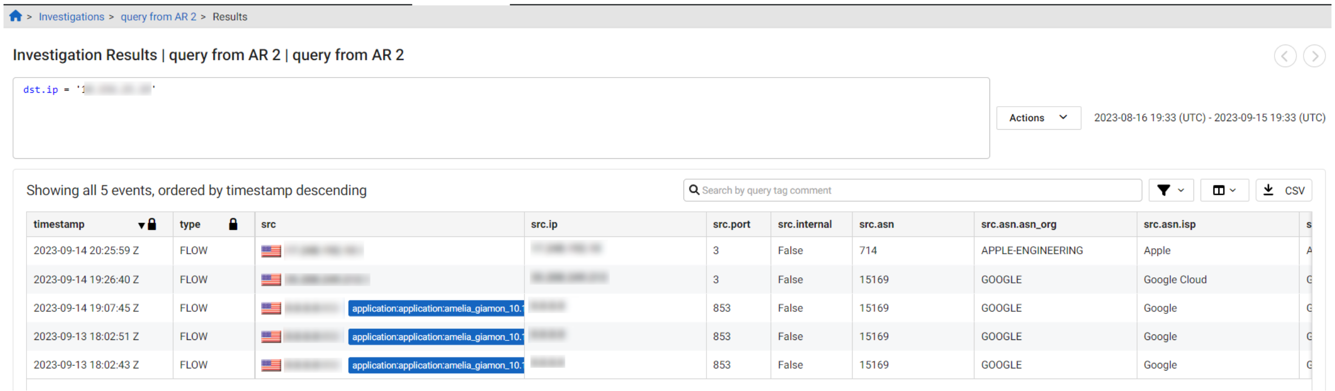
Query - 2024-02-05 03:39 (UTC)

```
src.ip = '[redacted]'
```

No Results | 2024-02-05 02:39 (UTC) to 2024-02-05 03:39 (UTC) | [redacted] | 0 Events

The following information is displayed:

- IQL Query string
- Date Range
- Number of events
- A table of the events where you can:
  - Click on column filter to change the visible columns in the way that the current event search does including column visibility sets.
  - Click the *CSV* button to export the results as a CSV file



> Investigations > query from AR 2 > Results
Actions
CSV
Search by query tag comment

Investigation Results | query from AR 2 | query from AR 2

```
dst.ip = '1[redacted]'
```

2023-08-16 19:33 (UTC) - 2023-09-15 19:33 (UTC)

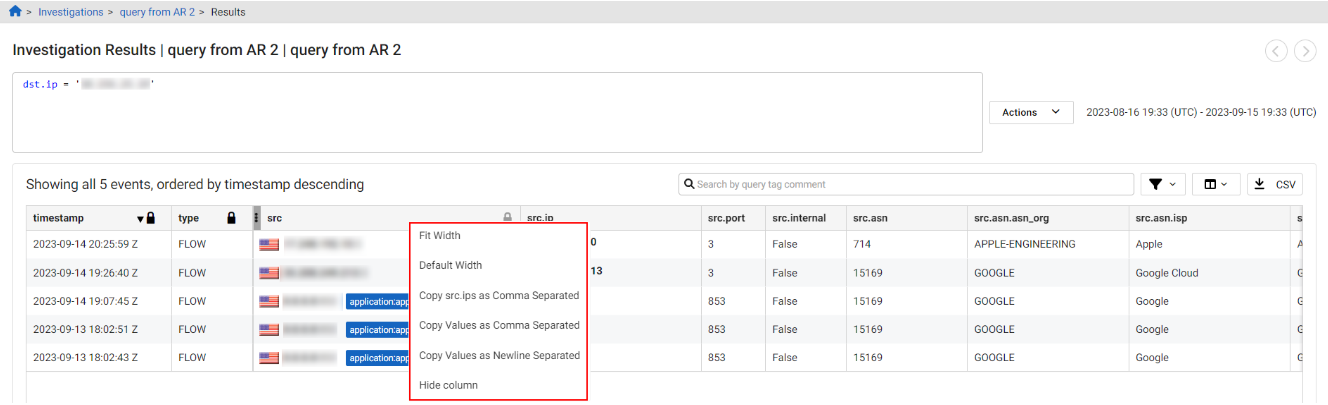
Showing all 5 events, ordered by timestamp descending

timestamp	type	src	src.ip	src.port	src.internal	src.asn	src.asn.asn_org	src.asn.isp	s
2023-09-14 20:25:59 Z	FLOW	[redacted]	[redacted]	3	False	714	APPLE-ENGINEERING	Apple	A
2023-09-14 19:26:40 Z	FLOW	[redacted]	[redacted]	3	False	15169	GOOGLE	Google Cloud	G
2023-09-14 19:07:45 Z	FLOW	[redacted] application:application:amelia_giamon_10.1	[redacted]	853	False	15169	GOOGLE	Google	G
2023-09-13 18:02:51 Z	FLOW	[redacted] application:application:amelia_giamon_10.1	[redacted]	853	False	15169	GOOGLE	Google	G
2023-09-13 18:02:43 Z	FLOW	[redacted] application:application:amelia_giamon_10.1	[redacted]	853	False	15169	GOOGLE	Google	G

Viewing column data

To quickly scroll through the column headings, hold down the Shift key and use the scroll wheel on your mouse.

To adjust the columns to fit the widest cell in the table or to hide a column, right-click the column header.



> Investigations > query from AR 2 > Results
Actions
CSV
Search by query tag comment
Fit Width
Default Width
Copy src.ips as Comma Separated
Copy Values as Comma Separated
Copy Values as Newline Separated
Hide column

Investigation Results | query from AR 2 | query from AR 2

```
dst.ip = '[redacted]'
```

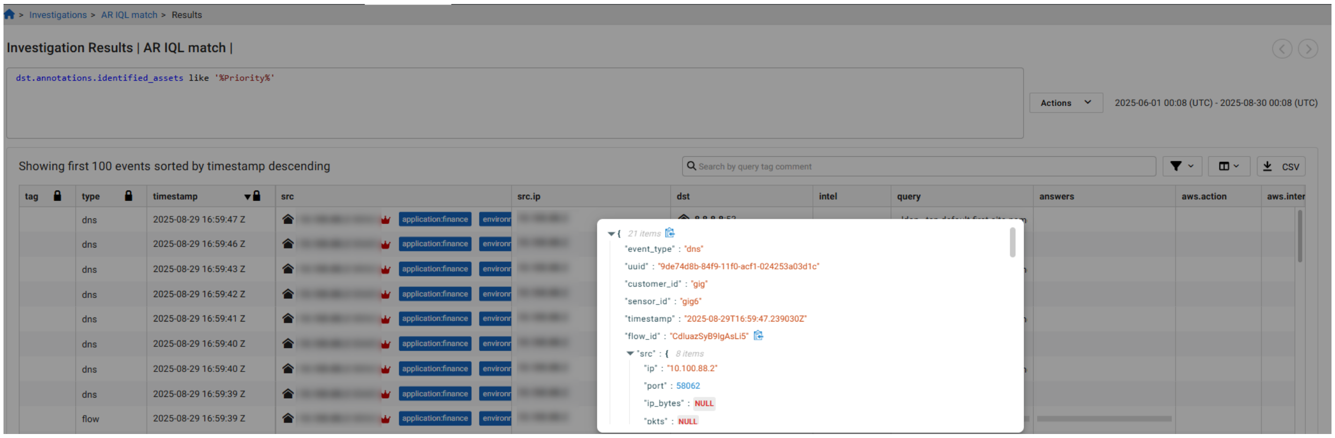
2023-08-16 19:33 (UTC) - 2023-09-15 19:33 (UTC)

Showing all 5 events, ordered by timestamp descending

timestamp	type	src	src.ip	src.port	src.internal	src.asn	src.asn.asn_org	src.asn.isp	s
2023-09-14 20:25:59 Z	FLOW	[redacted]	0	3	False	714	APPLE-ENGINEERING	Apple	A
2023-09-14 19:26:40 Z	FLOW	[redacted]	13	3	False	15169	GOOGLE	Google Cloud	G
2023-09-14 19:07:45 Z	FLOW	[redacted] application:app		853	False	15169	GOOGLE	Google	G
2023-09-13 18:02:51 Z	FLOW	[redacted] application:app		853	False	15169	GOOGLE	Google	G
2023-09-13 18:02:43 Z	FLOW	[redacted] application:app		853	False	15169	GOOGLE	Google	G

Single event view

You can view all details for a single event by double-clicking a blank area within the event row. This opens a pop-up displaying the full row data in JSON format. To copy the JSON, click the copy icon next to the first line. This saves time by eliminating the need to scroll through individual cells in the investigation results table.



> Investigations > AR IQL match > Results

Investigation Results | AR IQL match |

```
dst.annotations.identified_assets like '%Priority%'
```

2025-06-01 00:08 (UTC) - 2025-08-30 00:08 (UTC)

Showing first 100 events sorted by timestamp descending

tag	type	timestamp	src	src.ip	dst	intel	query	answers	aws.action	aws.inter
	dns	2025-08-29 16:59:47 Z	[redacted] application:finance environ	[redacted]	8.8.8.8:53					
	dns	2025-08-29 16:59:46 Z	[redacted] application:finance environ	[redacted]						
	dns	2025-08-29 16:59:43 Z	[redacted] application:finance environ	[redacted]						
	dns	2025-08-29 16:59:42 Z	[redacted] application:finance environ	[redacted]						
	dns	2025-08-29 16:59:41 Z	[redacted] application:finance environ	[redacted]						
	dns	2025-08-29 16:59:40 Z	[redacted] application:finance environ	[redacted]						
	dns	2025-08-29 16:59:40 Z	[redacted] application:finance environ	[redacted]						
	dns	2025-08-29 16:59:39 Z	[redacted] application:finance environ	[redacted]						
	flow	2025-08-29 16:59:39 Z	[redacted] application:finance environ	[redacted]						

```
{  21 items
  "event_type" : "dns"
  "uuid" : "9de74d8b-84f9-11f0-acf1-024253a03d1c"
  "customer_id" : "gig"
  "sensor_id" : "gig6"
  "timestamp" : "2025-08-29T16:59:47.239030Z"
  "flow_id" : "CdluazSyB9lgAsLi5"
  "src" : {  8 items
    "ip" : "10.100.88.2"
    "port" : 58062
    "ip_bytes" : NULL
    "pkts" : NULL
```

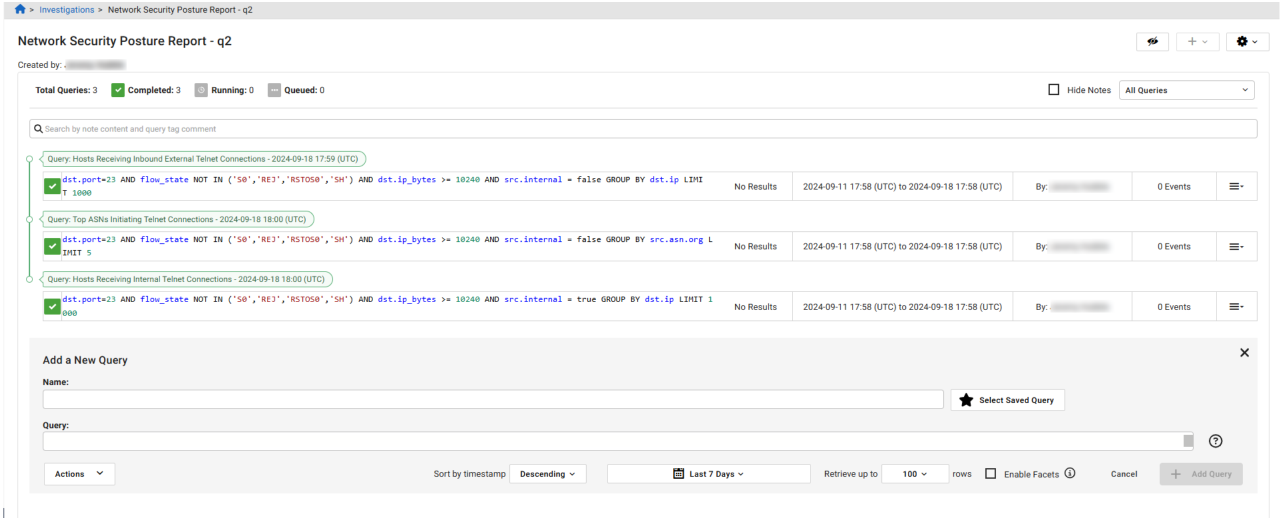
Adding queries to an investigation

You can add one or more queries to an investigation.

To add a query to an investigation:

1. Go to *Investigations* and click an investigation the list.
2. Click *Add Query*. The *Add a New Query* page opens.
3. Configure the query settings.

Name	Enter a name for the query.
Select Saved Query	Click to base the new query on a saved query.
Query	Enter the query string.
Actions	Options are: • *Bulk Add Indicators* • *Create a Detection*
Sort by timestamp	Select *Ascending* or *Descending*.
Last 7 Days	Use the date picker to update the date range and click *Apply*.
Retrieve up to *xxx* rows	Select between 100 to 10,000 rows.
Enable Facets	Select to return the panel that allows narrowing the search. This may make the query longer to complete. For more information, see Facet Search on page 82.



Investigations > Network Security Posture Report - q2

Network Security Posture Report - q2

Created by: [redacted]

Total Queries: 3 ✓ Completed: 3 Running: 0 Queued: 0 □ Hide Notes All Queries

Search by note content and query tag comment

Query: Hosts Receiving Inbound External Telnet Connections - 2024-09-18 17:59 (UTC)

```
dst.port=23 AND flow_state NOT IN ('S0','REJ','RSTOS0','SH') AND dst.ip_bytes >= 10240 AND src.internal = false GROUP BY dst.ip LIMI
T 1000
```

No Results | 2024-09-11 17:58 (UTC) to 2024-09-18 17:58 (UTC) | By: [redacted] | 0 Events

Query: Top ASNs Initiating Telnet Connections - 2024-09-18 18:00 (UTC)

```
dst.port=23 AND flow_state NOT IN ('S0','REJ','RSTOS0','SH') AND dst.ip_bytes >= 10240 AND src.internal = false GROUP BY src.asn.org L
IMIT 5
```

No Results | 2024-09-11 17:58 (UTC) to 2024-09-18 17:58 (UTC) | By: [redacted] | 0 Events

Query: Hosts Receiving Internal Telnet Connections - 2024-09-18 18:00 (UTC)

```
dst.port=23 AND flow_state NOT IN ('S0','REJ','RSTOS0','SH') AND dst.ip_bytes >= 10240 AND src.internal = true GROUP BY dst.ip LIMIT 1
000
```

No Results | 2024-09-11 17:58 (UTC) to 2024-09-18 17:58 (UTC) | By: [redacted] | 0 Events

Add a New Query

Name:

Query:

4. Click *Add Query*.
5. (Optional) To add another query to the investigation, click *Add Query*.

To rename a query:

1. From the Investigation Detail page, locate the query you want to rename.
2. Click the *Actions* menu on the right side of the page and select *Rename*.

   ≡▾

3. Enter the name in the *Query name* field.
4. Click *Rename*.

To clone a query:

> You can clone a query in a closed investigation. However, the cloned query must be added to a different investigation.

1. Click *Investigations*.
2. Click the investigation that contains the query you want to clone.
3. Click the *Actions* menu on the right side of the page and select *Clone*. The *Add Query to Investigation* dialog opens.
4. Configure the query settings.
5. Create a new investigation or save the query to an existing investigation.

Create a New Investigation	Enter an *Investigation Name* and *Description*.
Add to Existing Investigation	From the *Choose Investigation* dropdown, select an investigation. By default the cloned query is added to current investigation.
Run a Private Query	Select this option to add a query to an adhoc search.

6. Click *Add Query*.

To delete a query:

1. Click *Investigations*.
2. Click the investigation that contains the query you want to delete.
3. Click the *Actions* menu on the right side of the page and select *Delete*. The *Delete Query* dialog opens.
4. Click *Confirm*.

To save a query:

1. Click *Investigations*.
2. Click the investigation that contains the query you want to save.
3. Click the *Actions* menu on the right side of the page and select *Save*. The *Save Query* dialog opens.
4. Enter a *Query Name* and *Description*.
5. Click *Save*.

Adding notes to an investigation

To add a note to investigation:

1. Go to *Investigations > Investigate*.
2. Click Select to open an investigion.
3. Click *Add Note*. Optionally, you can click the Add menu (**+**) in the top-right of the page and select *Add Note*.
4. In the *Notes* field enter the details in plain text or markdown. Rendered markdown text will be visible. The note contents will be displayed along with the timestamp of when it was created.

To update a note:

1. Click the Actions menu on the right side of the note and select *Update*.
2. Update the note and click *Update Note*.

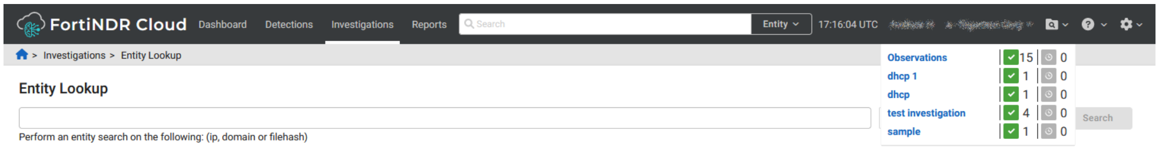
To delete a note:

1. Click the Actions menu on the right side of the note and select *Delete*. The *Delete Note* dialog opens.
2. Click *Confirm*.

Watch an investigation

You can check the status of your query by clicking the *Notification* icon to the right of the account name in the top navigation. A panel displays the list of queries being watched, along with the number of queries completed and running.

When the query is complete, you will see a green check mark in the top right corner.



[redacted]

Investigations > Entity Lookup

Entity Lookup

Perform an entity search on the following: (ip, domain or filehash)

Observations	✓ 15	0
dhcp 1	✓ 1	0
dhcp	✓ 1	0
test investigation	✓ 4	0
sample	✓ 1	0

To watch an investigation:

1. Go to *Investigations* and click *Select* to open the investigation you want to watch.
2. Click the *Not Watching* icon.

To unwatch an investigation:

1. Go to *Investigations* and click *Select* to open the investigation you want to watch.
2. Click the *Watching* icon.

Facet Search

A *Facet* filters results of an IQL query in a pane adjacent to the main results table of an IQL query. A facet is an automatic filter that saves time configuring a search with the GUI.

The facet options are results-based attributes from a sample of the events found in the initial search. The facets will change based on the data in the records found by the search.

Faceted Searches are useful for getting a quick multidimensional view of the results to identify the most or least common elements.

You can enable Facets when:

- Adding queries to an investigation on page 79
- Adding a guided query to an investigation on page 107

Enabling facet search, may increase the time to process the query.

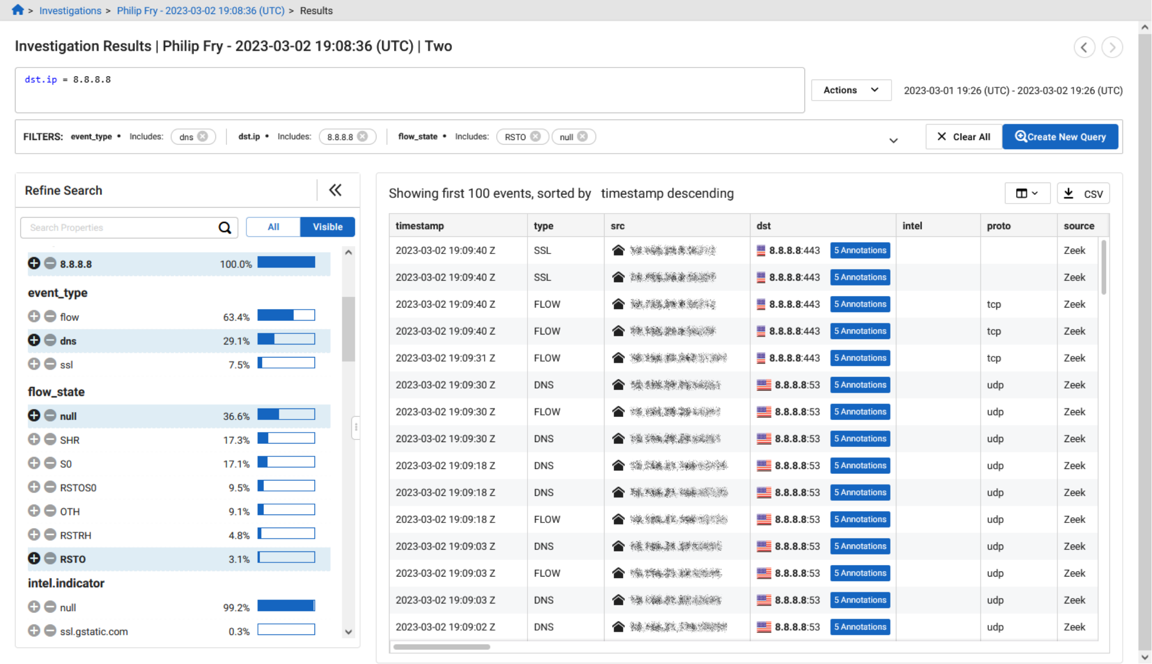
Refine results using facet search

You can further refine your search on the results from the original query using facet search.

To refine the results in a facet search:

1. Click *Investigations*.
2. Click *Select* next to the investigation you want to open.

3. Click *View Results* for the facet search query you want to refine. The *Refine Search* pane displays a breakdown of the query results.



Investigations > Philip Fry - 2023-03-02 19:08:36 (UTC) > Results

Investigation Results | Philip Fry - 2023-03-02 19:08:36 (UTC) | Two

```
dst.ip = 8.8.8.8
```

Actions ⌄ 2023-03-01 19:26 (UTC) - 2023-03-02 19:26 (UTC)

FILTERS: event_type • Includes: dns | dst.ip • Includes: 8.8.8.8 | flow_state • Includes: RSTO null

Refine Search

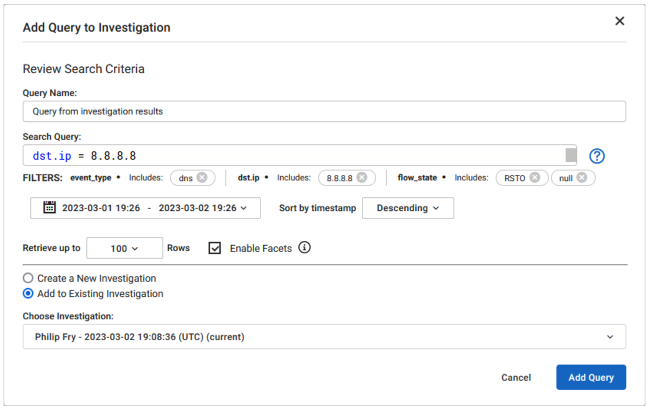
8.8.8.8	100.0%
event_type	
flow	63.4%
dns	29.1%
ssl	7.5%
flow_state	
null	36.6%
SHR	17.3%
S0	17.1%
RSTOS0	9.5%
OTH	9.1%
RSTRH	4.8%
RSTO	3.1%
intel.indicator	
null	99.2%
ssl.gstatic.com	0.3%

Showing first 100 events, sorted by timestamp descending

timestamp	type	src	dst	intel	proto	source
2023-03-02 19:09:40 Z	SSL	[redacted]	8.8.8.8:443 5 Annotations			Zeek
2023-03-02 19:09:40 Z	SSL	[redacted]	8.8.8.8:443 5 Annotations			Zeek
2023-03-02 19:09:40 Z	FLOW	[redacted]	8.8.8.8:443 5 Annotations		tcp	Zeek
2023-03-02 19:09:40 Z	FLOW	[redacted]	8.8.8.8:443 5 Annotations		tcp	Zeek
2023-03-02 19:09:31 Z	FLOW	[redacted]	8.8.8.8:443 5 Annotations		tcp	Zeek
2023-03-02 19:09:30 Z	DNS	[redacted]	8.8.8.8:53 5 Annotations		udp	Zeek
2023-03-02 19:09:30 Z	FLOW	[redacted]	8.8.8.8:53 5 Annotations		udp	Zeek
2023-03-02 19:09:30 Z	DNS	[redacted]	8.8.8.8:53 5 Annotations		udp	Zeek
2023-03-02 19:09:18 Z	DNS	[redacted]	8.8.8.8:53 5 Annotations		udp	Zeek
2023-03-02 19:09:18 Z	DNS	[redacted]	8.8.8.8:53 5 Annotations		udp	Zeek
2023-03-02 19:09:18 Z	FLOW	[redacted]	8.8.8.8:53 5 Annotations		udp	Zeek
2023-03-02 19:09:03 Z	DNS	[redacted]	8.8.8.8:53 5 Annotations		udp	Zeek
2023-03-02 19:09:03 Z	FLOW	[redacted]	8.8.8.8:53 5 Annotations		udp	Zeek
2023-03-02 19:09:03 Z	DNS	[redacted]	8.8.8.8:53 5 Annotations		udp	Zeek
2023-03-02 19:09:02 Z	DNS	[redacted]	8.8.8.8:53 5 Annotations		udp	Zeek

4. Add or remove the filters based on your requirement. The selected filters appear under the original search query. You can also clear the selected filters by clicking *Clear All* .

5. Click *Create New Query*.



Add Query to Investigation

Review Search Criteria

Query Name: Query from investigation results

Search Query:

```
dst.ip = 8.8.8.8
```

FILTERS: event_type • Includes: dns | dst.ip • Includes: 8.8.8.8 | flow_state • Includes: RSTO null

2023-03-01 19:26 - 2023-03-02 19:26 ⌄ Sort by timestamp Descending ⌄

Retrieve up to 100 ⌄ Rows ☑ Enable Facets

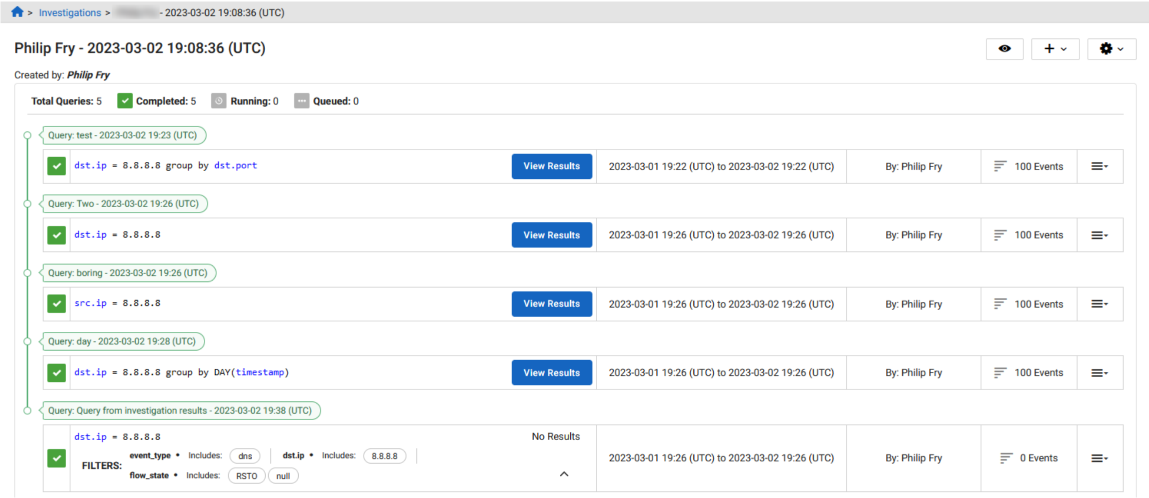
○ Create a New Investigation
● Add to Existing Investigation

Choose Investigation: Philip Fry - 2023-03-02 19:08:36 (UTC) (current)

6. Create a new investigation or add the query to an existing investigation. By default, the new query is added to the current investigation.

Create a New Investigation	Select this option to create a new investigation. Enter the *Investigation Name* and *Description*. The default name for new investigations is the first and last name of the user creating the investigation as well as a date stamp of when the investigation was created.
Add to Existing Investigation	From the *Choose Investigation* dropdown, select and investigation.

7. Click *Add Query*. The query and all the included and excluded facets will be shown in the investigation details page.



Investigations > [redacted] - 2023-03-02 19:08:36 (UTC)

Philip Fry - 2023-03-02 19:08:36 (UTC)

Created by: *Philip Fry*

Total Queries: 5 ☑ **Completed:** 5 **Running:** 0 **Queued:** 0

Query: test - 2023-03-02 19:23 (UTC)

	Query		Time range	By	Events
☑	`dst.ip = 8.8.8.8 group by dst.port`	View Results	2023-03-01 19:22 (UTC) to 2023-03-02 19:22 (UTC)	By: Philip Fry	100 Events

Query: Two - 2023-03-02 19:26 (UTC)

	Query		Time range	By	Events
☑	`dst.ip = 8.8.8.8`	View Results	2023-03-01 19:26 (UTC) to 2023-03-02 19:26 (UTC)	By: Philip Fry	100 Events

Query: boring - 2023-03-02 19:26 (UTC)

	Query		Time range	By	Events
☑	`src.ip = 8.8.8.8`	View Results	2023-03-01 19:26 (UTC) to 2023-03-02 19:26 (UTC)	By: Philip Fry	100 Events

Query: day - 2023-03-02 19:28 (UTC)

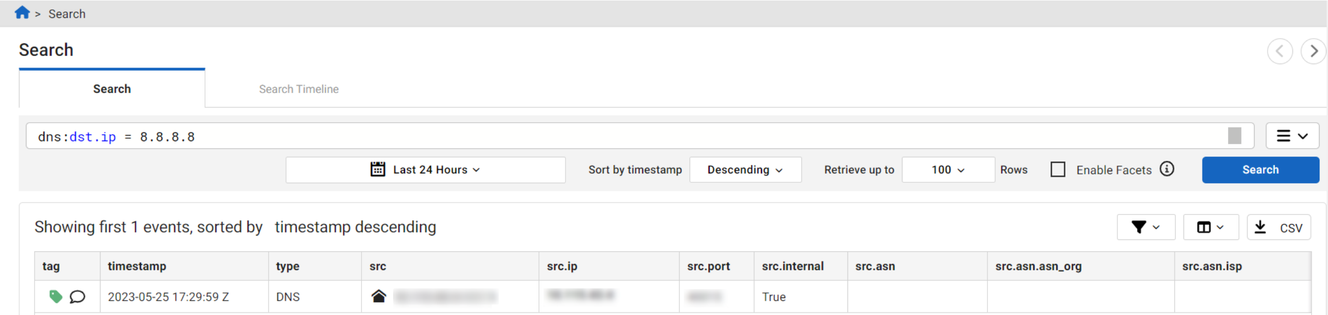
	Query		Time range	By	Events
☑	`dst.ip = 8.8.8.8 group by DAY(timestamp)`	View Results	2023-03-01 19:26 (UTC) to 2023-03-02 19:26 (UTC)	By: Philip Fry	100 Events

Query: Query from investigation results - 2023-03-02 19:38 (UTC)

	Query		Time range	By	Events
☑	`dst.ip = 8.8.8.8` FILTERS: event_type • Includes: dns | dst.ip • Includes: 8.8.8.8 flow_state • Includes: RSTO null	No Results	2023-03-01 19:26 (UTC) to 2023-03-02 19:26 (UTC)	By: Philip Fry	0 Events

Tag and comment events

Use the *tag* column to communicate with members of the security team about an event in an investigation. Tags and comments are viewable to any user with access to the investigation. You can use filters to view only tagged investigations or use the *Search* function to search for text in notes and comments.



`dns:dst.ip = 8.8.8.8`

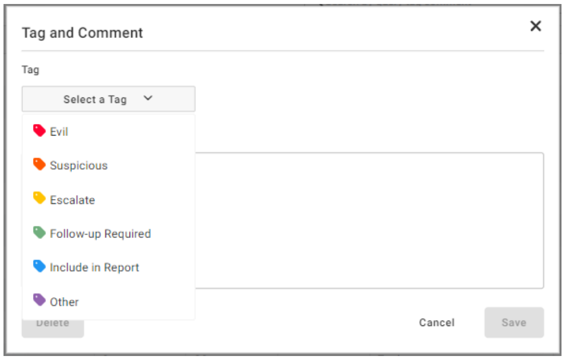
Last 24 Hours · Sort by timestamp: Descending · Retrieve up to 100 Rows · □ Enable Facets · Search

Showing first 1 events, sorted by timestamp descending

tag	timestamp	type	src	src.ip	src.port	src.internal	src.asn	src.asn.asn_org	src.asn.isp
	2023-05-25 17:29:59 Z	DNS	[redacted]	[redacted]	[redacted]	True			

To add a tag to an event:

1. Do one of the following:
   - Click the *Investigations* tab, open an investigation and click *View Results*.
   - Go to *Investigations > Private Search*. In the *Private Search* tab, click *View Results*.
2. Click the *tag* column next to the event. The *Tag and Comment* dialog opens.



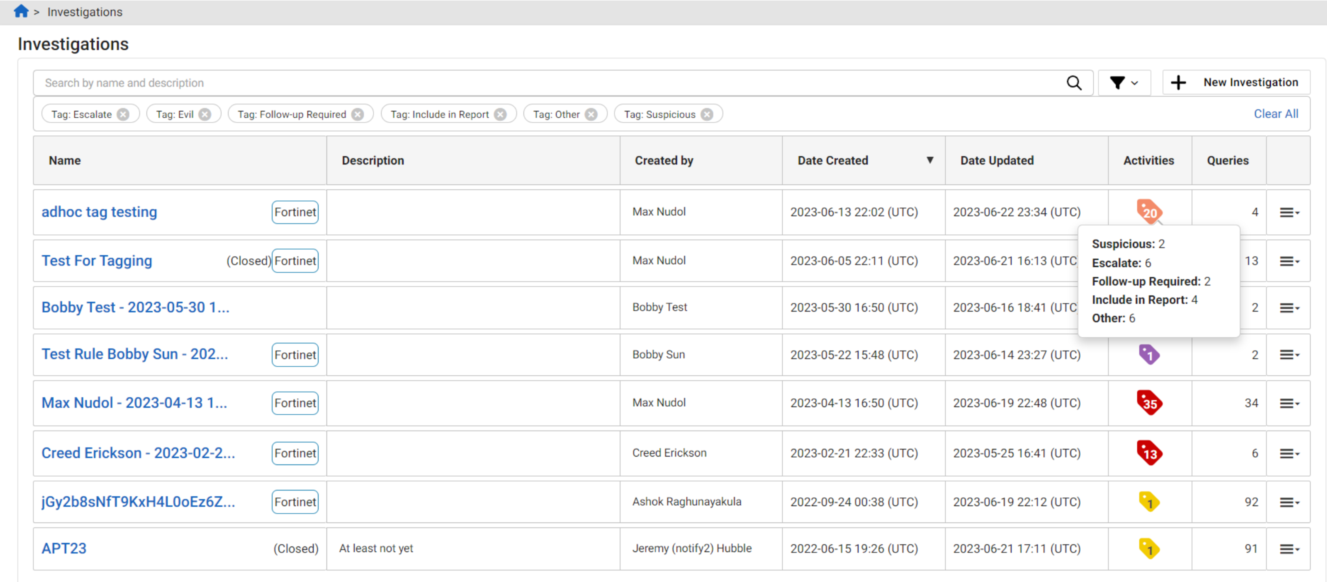
3. Select a tag from the dropdown.
4. (Optional) Add a comment to the event.
5. Click *Save*. The tag and comment icons are displayed in the *tag* column.

To remove a tag from an event:

1. Click the *tag* column next to the event. The *Tag and Comment* dialog opens.
2. Click *Delete* and then click *Confirm* in the dialog that opens.

Viewing and filtering tagged events

Tagged events are displayed in the *Investigations* and *Private Search* tabs. Hover over a tag to see an overview of the tagged events in the investigation.



Name	Description	Created by	Date Created ▼	Date Updated	Activities	Queries
adhoc tag testing Fortinet		Max Nudol	2023-06-13 22:02 (UTC)	2023-06-22 23:34 (UTC)	20	4
Test For Tagging (Closed) Fortinet		Max Nudol	2023-06-05 22:11 (UTC)	2023-06-21 16:13 (UTC		13
Bobby Test - 2023-05-30 1...		Bobby Test	2023-05-30 16:50 (UTC)	2023-06-16 18:41 (UTC		2
Test Rule Bobby Sun - 202... Fortinet		Bobby Sun	2023-05-22 15:48 (UTC)	2023-06-14 23:27 (UTC)	1	2
Max Nudol - 2023-04-13 1... Fortinet		Max Nudol	2023-04-13 16:50 (UTC)	2023-06-19 22:48 (UTC)	35	34
Creed Erickson - 2023-02-2... Fortinet		Creed Erickson	2023-02-21 22:33 (UTC)	2023-05-25 16:41 (UTC)	13	6
jGy2b8sNfT9KxH4L0oEz6Z... Fortinet		Ashok Raghunayakula	2022-09-24 00:38 (UTC)	2023-06-19 22:12 (UTC)	1	92
APT23 (Closed)	At least not yet	Jeremy (notify2) Hubble	2022-06-15 19:26 (UTC)	2023-06-21 17:11 (UTC)	1	91

Suspicious: 2
Escalate: 6
Follow-up Required: 2
Include in Report: 4
Other: 6

To use tags and notes to filter investigations:

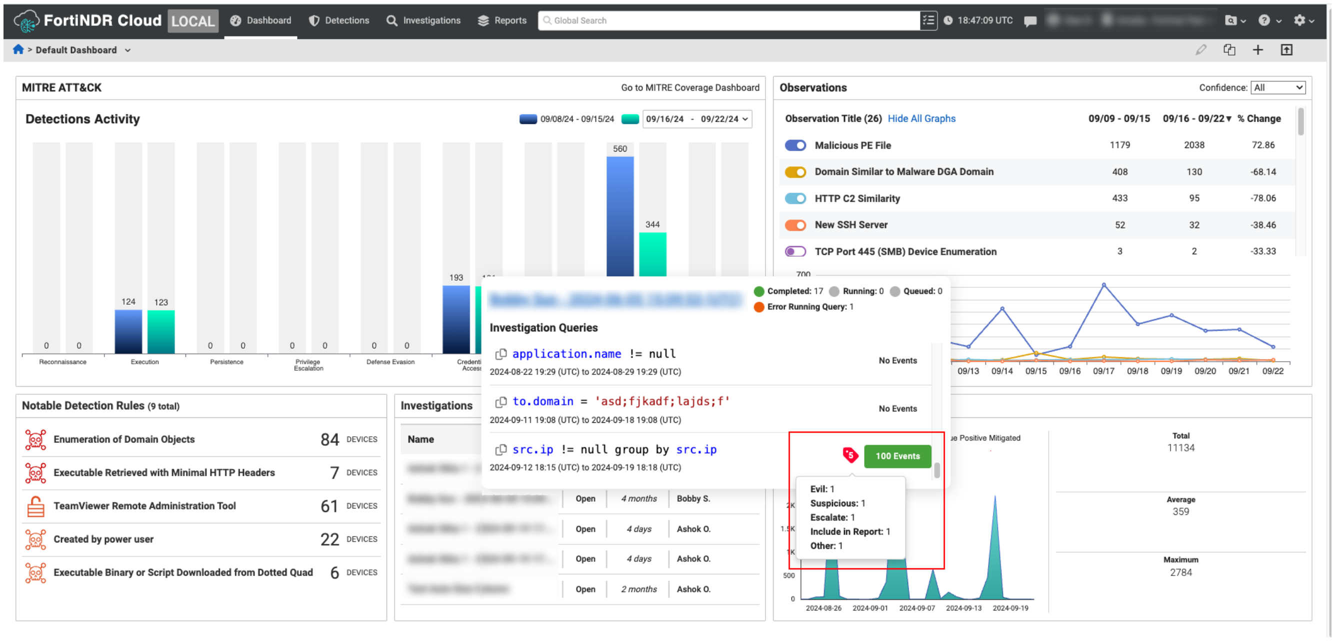
Option	Description
Go to *Investigations* >	1. Click the *Filter* icon.

Option	Description
Investigate	▼⌄ **2.** In the *Tag* section, select *Tagged Investigations*. **3.** (Optional) To refine results, select a tag label from the list (such as *Evil*). **4.** Click the investigation name. **5.** (Optional) Click *Hide Notes* to only see the tags. **6.** Click *View Results*.
Go to *Investigations > Private Search*	**1.** Click the *All Queries* dropdown. **2.** In the *Tag* section, select *Tagged Investigations*. **3.** (Optional) To refine results, select a tag label from the list (such as *Evil*). **4.** Click *View Results*.
Go to *Investigations*	**1.** Enter keywords in the *Search* field to search for text in comments and notes. Matching results are highlighted in yellow. **2.** Hover over the results in the *Activities* and *Notes* column. • Click a matched note to open the results table displaying the matched results. • Click *View Details* to open the investigation. The matched text will be highlighted.

After you filter the investigations, you can copy the URL to send the filtered view a member of your team.

Using tags to pivot to the events table

You can use a tagged event in the investigation dialog to quickly pivot to the *Events* table in an investigation. This function is available in the *Dashboard*, *Investigations* and *Private Search* pages. Click the tag icon in the tooltip.



Observations

Observation Title (26) Hide All Graphs	09/09 - 09/15	09/16 - 09/22 ▾	% Change
Malicious PE File	1179	2038	72.86
Domain Similar to Malware DGA Domain	408	130	-68.14
HTTP C2 Similarity	433	95	-78.06
New SSH Server	52	32	-38.46
TCP Port 445 (SMB) Device Enumeration	3	2	-33.33

Notable Detection Rules (9 total)

Enumeration of Domain Objects	84	DEVICES
Executable Retrieved with Minimal HTTP Headers	7	DEVICES
TeamViewer Remote Administration Tool	61	DEVICES
Created by power user	22	DEVICES
Executable Binary or Script Downloaded from Dotted Quad	6	DEVICES

Investigations

Name			
[redacted]			
[redacted]	Open	4 months	Bobby S.
[redacted]	Open	4 days	Ashok O.
[redacted]	Open	4 days	Ashok O.
[redacted]	Open	2 months	Ashok O.

[redacted]

● Completed: 17 ● Running: 0 ● Queued: 0
● Error Running Query: 1

Investigation Queries

```
application.name != null
```
2024-08-22 19:29 (UTC) to 2024-08-29 19:29 (UTC) — No Events

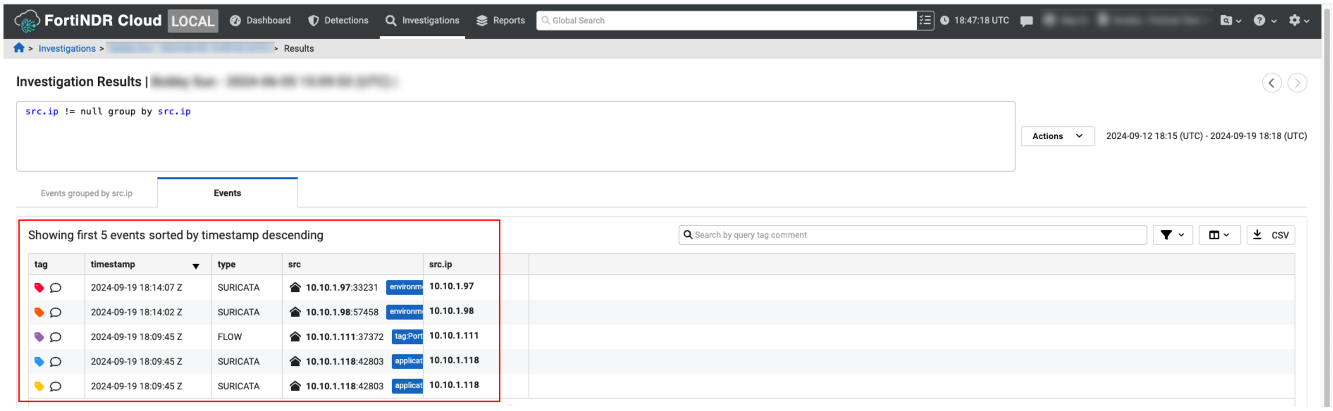
```
to.domain = 'asd;fjkadf;lajds;f'
```
2024-09-11 19:08 (UTC) to 2024-09-18 19:08 (UTC) — No Events

```
src.ip != null group by src.ip
```
2024-09-12 18:15 (UTC) to 2024-09-19 18:18 (UTC) — 5 — 100 Events

Evil: 1
Suspicious: 1
Escalate: 1
Include in Report: 1
Other: 1

Total	Average	Maximum
11134	359	2784

The *Events* table will display the same number of events tagged in the investigation tooltip.



Investigation Results | [redacted]

```
src.ip != null group by src.ip
```

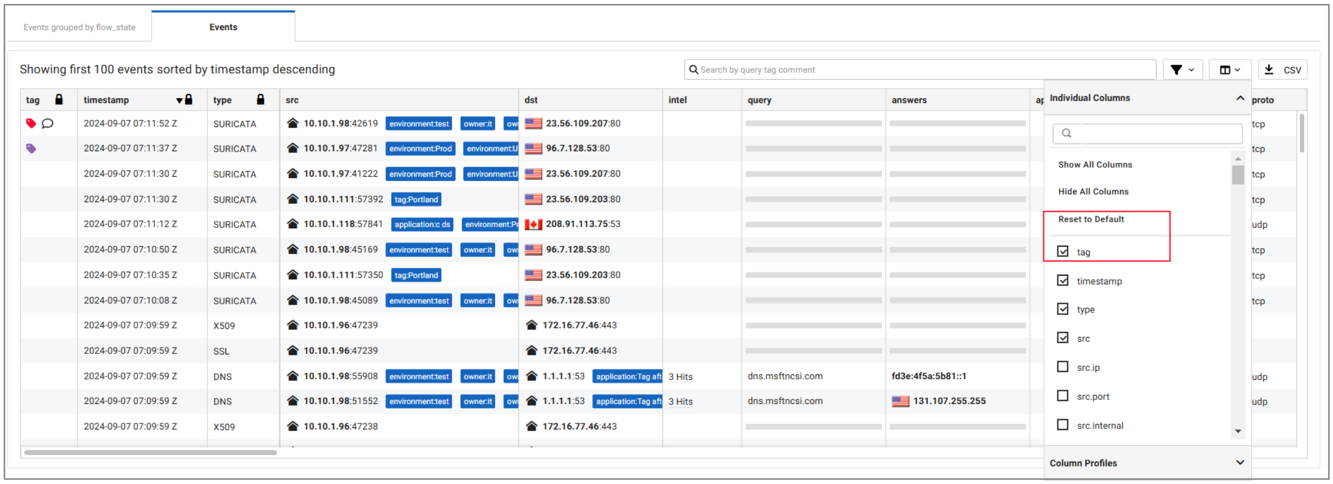
2024-09-12 18:15 (UTC) - 2024-09-19 18:18 (UTC)

Showing first 5 events sorted by timestamp descending

tag	timestamp ▼	type	src	src.ip
● 💬	2024-09-19 18:14:07 Z	SURICATA	10.10.1.97:33231 environm	10.10.1.97
● 💬	2024-09-19 18:14:02 Z	SURICATA	10.10.1.98:57458 environm	10.10.1.98
● 💬	2024-09-19 18:09:45 Z	FLOW	10.10.1.111:37372 tag:Port	10.10.1.111
● 💬	2024-09-19 18:09:45 Z	SURICATA	10.10.1.118:42803 applicat	10.10.1.118
● 💬	2024-09-19 18:09:45 Z	SURICATA	10.10.1.118:42803 applicat	10.10.1.118

Locking the tags column

To lock the *tag* column to the left side of the table, in the *Individual columns* filter under *Individual Columns*, select *Reset to Default* or *tag*. You can also lock the column by selecting *Default* under the *Column Profile* in the same menu.



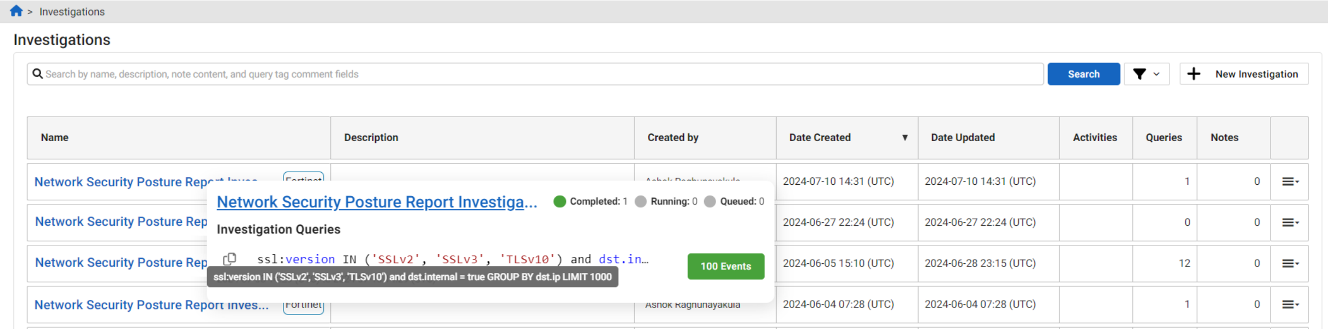
Showing first 100 events sorted by timestamp descending

tag	timestamp	type	src	dst	intel	query	answers	proto
	2024-09-07 07:11:52 Z	SURICATA	10.10.1.98:42619 environment:test owner:it ow	23.56.109.207:80				tcp
	2024-09-07 07:11:37 Z	SURICATA	10.10.1.97:47281 environment:Prod environment:U	96.7.128.53:80				tcp
	2024-09-07 07:11:30 Z	SURICATA	10.10.1.97:41222 environment:Prod environment:U	23.56.109.207:80				tcp
	2024-09-07 07:11:30 Z	SURICATA	10.10.1.111:57392 tag:Portland	23.56.109.203:80				tcp
	2024-09-07 07:11:12 Z	SURICATA	10.10.1.118:57841 application:c ds environment:Pr	208.91.113.75:53				udp
	2024-09-07 07:10:50 Z	SURICATA	10.10.1.98:45169 environment:test owner:it ow	96.7.128.53:80				tcp
	2024-09-07 07:10:35 Z	SURICATA	10.10.1.111:57350 tag:Portland	23.56.109.203:80				tcp
	2024-09-07 07:10:08 Z	SURICATA	10.10.1.98:45089 environment:test owner:it ow	96.7.128.53:80				tcp
	2024-09-07 07:09:59 Z	X509	10.10.1.96:47239	172.16.77.46:443				
	2024-09-07 07:09:59 Z	SSL	10.10.1.96:47239	172.16.77.46:443				
	2024-09-07 07:09:59 Z	DNS	10.10.1.98:55908 environment:test owner:it ow	1.1.1.1:53 application:Tag aft	3 Hits	dns.msftncsi.com	fd3e:4f5a:5b81::1	udp
	2024-09-07 07:09:59 Z	DNS	10.10.1.98:51552 environment:test owner:it ow	1.1.1.1:53 application:Tag aft	3 Hits	dns.msftncsi.com	131.107.255.255	udp
	2024-09-07 07:09:59 Z	X509	10.10.1.96:47238	172.16.77.46:443				

Investigation tooltip

The investigation tooltip is available in the *Investigations* page, the *Investigation* widget in the default dashboard, and global search results. The tooltip can be disabled from the *Profile Settings* page.

Hover over the investigation name to view a summary of the query status. The investigation tooltip shows the number of queries that are *Completed*, *Running* and *Queued* as well as the tags associated with the query. To view the query parameters at a glance, hover over the query string in the tooltip. To copy the query string, click the *Copy Query* icon at the left-side of the string.



> Investigations
Investigations
Search by name, description, note content, and query tag comment fields
Search
New Investigation
100 Events

Name	Description	Created by	Date Created	Date Updated	Activities	Queries	Notes
Network Security Posture Repor Inves...			2024-07-10 14:31 (UTC)	2024-07-10 14:31 (UTC)		1	0
Network Security Posture Rep			2024-06-27 22:24 (UTC)	2024-06-27 22:24 (UTC)		0	0
Network Security Posture Rep			2024-06-05 15:10 (UTC)	2024-06-28 23:15 (UTC)		12	0
Network Security Posture Report Inves...		Ashok Raghunayakula	2024-06-04 07:28 (UTC)	2024-06-04 07:28 (UTC)		1	0

Network Security Posture Report Investiga... ● Completed: 1 ● Running: 0 ● Queued: 0

Investigation Queries

```
ssl:version IN ('SSLv2', 'SSLv3', 'TLSv10') and dst.in…
```

```
ssl:version IN ('SSLv2', 'SSLv3', 'TLSv10') and dst.internal = true GROUP BY dst.ip LIMIT 1000
```

To disable the investigation tooltip:

1. Click gear icon at the top-right of the page and select *Profile Settings*. The *My Profile* page opens.
2. Under *User Information*, disable *Tooltip*.

Share investigations

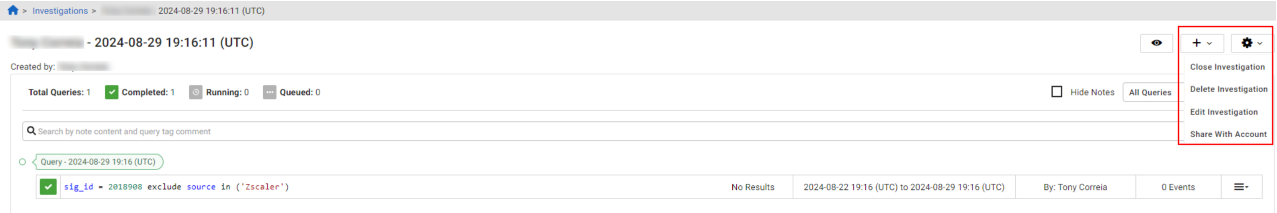
Users with multiple accounts can share investigations in their primary account with users in their secondary account. Sharing an investigation will allow all users with access to the secondary account to see and make changes to the investigation. Once the investigation is shared, it cannot be undone.

Requirements:

- The user must have multiple accounts
- The investigation must be active.
- Users in the primary and secondary accounts must have a *User* role.

To share an investigation:

1. Go to *Investigations* and do one of the following:
   - Create a new investigation.
   - Open an investigation in the list. Investigations in your primary account are indicated with an account icon.
2. Click the gear icon at the top-right of the page and select *Share With Account*. The *Share with Account* dialog opens.



Investigations > [redacted] 2024-08-29 19:16:11 (UTC)

[redacted] - 2024-08-29 19:16:11 (UTC)

Created by: [redacted]

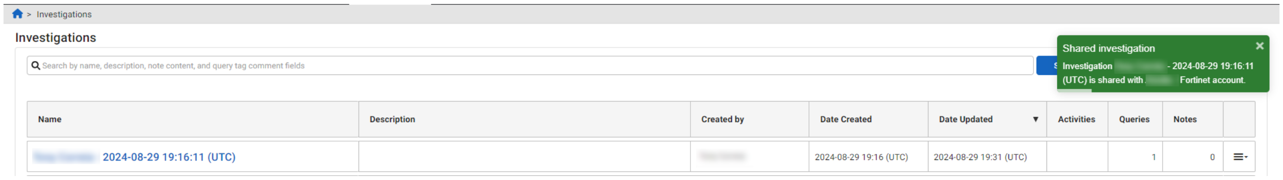
Total Queries: 1 ✓ Completed: 1 Running: 0 Queued: 0

Query - 2024-08-29 19:16 (UTC)

```
sig_id = 2018908 exclude source in ('Zscaler')
```

No Results | 2024-08-22 19:16 (UTC) to 2024-08-29 19:16 (UTC) | By: Tony Correia | 0 Events

3. Click *Confirm*. The *Investigations* page opens. The account icon is removed from the investigation and a confirmation message appears at the top of the page.



Investigations > Investigations

Investigations

Shared investigation

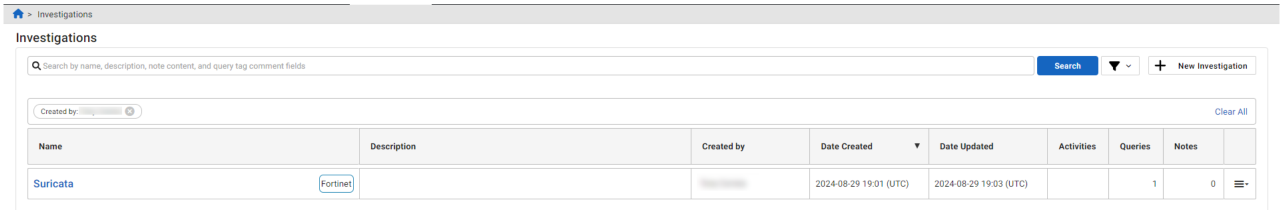
Investigation [redacted] - 2024-08-29 19:16:11 (UTC) is shared with [redacted] Fortinet account.

Name	Description	Created by	Date Created	Date Updated ▼	Activities	Queries	Notes	
[redacted] 2024-08-29 19:16:11 (UTC)		[redacted]	2024-08-29 19:16 (UTC)	2024-08-29 19:31 (UTC)		1	0	≡

Search by name, description, note content, and query tag comment fields

To share an investigation with the action menu:

1. Go to *Investigations*.
2. Locate an investigation in your primary account. Investigations in your primary account are indicated with an account badge.



Investigations > Investigations

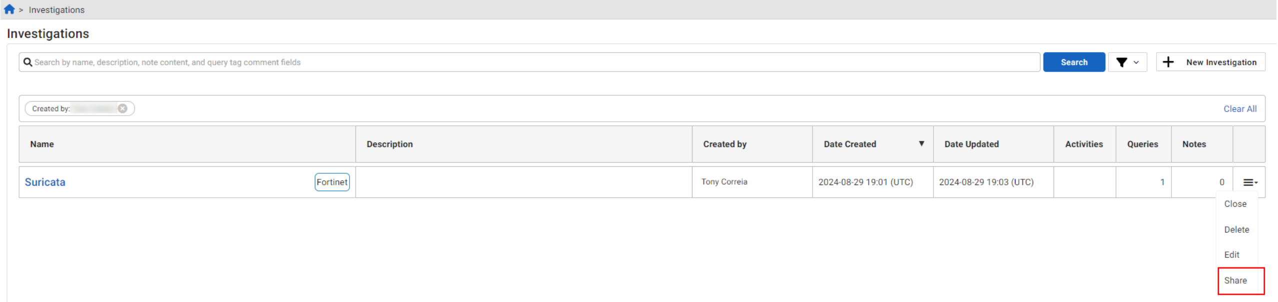
Investigations

Created by: [redacted]

Name	Description	Created by	Date Created ▼	Date Updated	Activities	Queries	Notes	
Suricata Fortinet		[redacted]	2024-08-29 19:01 (UTC)	2024-08-29 19:03 (UTC)		1	0	≡

Search by name, description, note content, and query tag comment fields
Search
New Investigation
Clear All

3. From the actions menu, select *Share*. The *Share with Account* dialog opens.



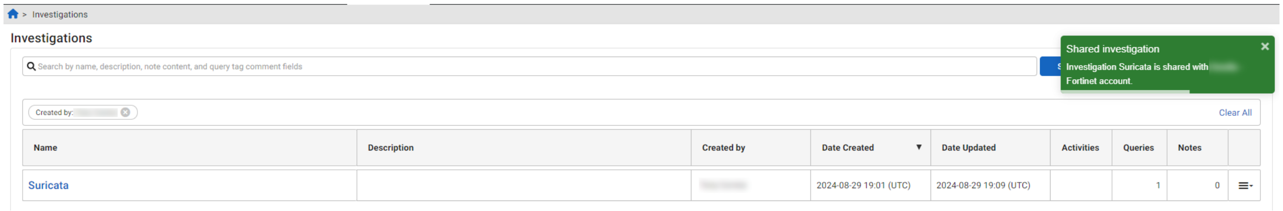
Investigations

Search by name, description, note content, and query tag comment fields

Created by: [redacted] Clear All

Name	Description	Created by	Date Created ▼	Date Updated	Activities	Queries	Notes
Suricata Fortinet		Tony Correia	2024-08-29 19:01 (UTC)	2024-08-29 19:03 (UTC)		1	0

4. Click *Confirm*. The account icon is removed from the investigation and confirmation message appears at the top of the page.



Investigations

Search by name, description, note content, and query tag comment fields

Shared investigation

Investigation Suricata is shared with [redacted] Fortinet account.

Created by: [redacted] Clear All

Name	Description	Created by	Date Created ▼	Date Updated	Activities	Queries	Notes
Suricata		[redacted]	2024-08-29 19:01 (UTC)	2024-08-29 19:09 (UTC)		1	0

Packet capture

Packet capture tasks

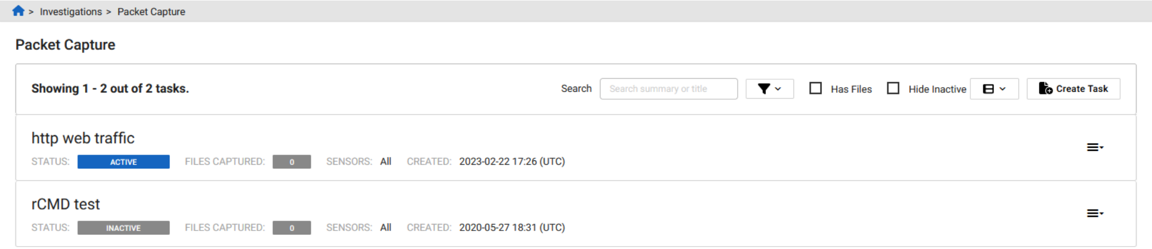
Packet Capture tasks are defined and deployed on a per-sensor basis. A single task can be deployed to one, all, or any combination of sensors. Each sensor can spool up to four individual tasks, but only one task may run at a time.

The active task will execute for 60 minutes or until it captures 1 MB of data, whichever comes first. Once either of those conditions are met, the active task will pause, and the next spooled task will execute. The same task will begin again if it is the only one spooled. Tasks will continue to be spooled until they pass the specified expiration time or are terminated manually.

Packet capture tasks can have one of two states:

State	Description
Active	The task is currently in rotation for execution.
Inactive	The task has reached the requested end time or has been terminated by a user.

Packet capture tasks can be created, viewed, or terminated from the *Packet Capture* page. All tasks, both *Active* and *Inactive*, are displayed by default.



> Investigations > Packet Capture

Packet Capture

Showing 1 - 2 out of 2 tasks. Search [Search summary or title] ☐ Has Files ☐ Hide Inactive Create Task

http web traffic
STATUS: ACTIVE FILES CAPTURED: 0 SENSORS: All CREATED: 2023-02-22 17:26 (UTC)

rCMD test
STATUS: INACTIVE FILES CAPTURED: 0 SENSORS: All CREATED: 2020-05-27 18:31 (UTC)

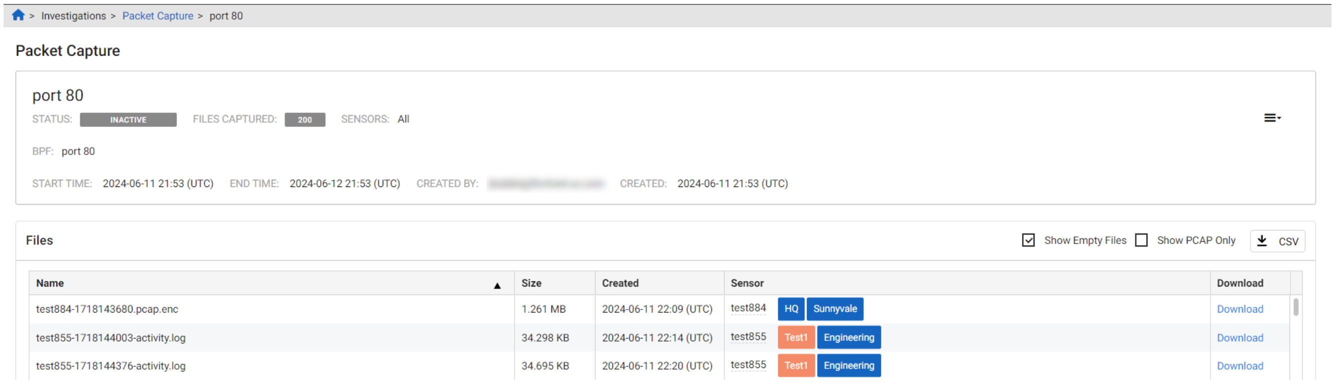
Reviewing a task

Click a task on the page to view metadata for the task and any PCAP data captured. Each execution of a task will produce exactly one log file and one PCAP.

- The log file will specify the start and end times of the respective execution .
- The PCAP file will contain any captured traffic.

The PCAP file will be empty if no traffic matched the BPF. Each file collected as part of the PCAP task can then be downloaded and viewed within WireShark or another preferred PCAP analysis tool. You can adjust which files are displayed (only PCAP, all PCAP, only non-empty PCAP) by checking or unchecking the respective options on the task page.

PCAP files are retained for 180 days. They can be deleted earlier by deleting the PCAP task.



> Investigations > Packet Capture > port 80

Packet Capture

port 80
STATUS: INACTIVE FILES CAPTURED: 200 SENSORS: All

BPF: port 80

START TIME: 2024-06-11 21:53 (UTC) END TIME: 2024-06-12 21:53 (UTC) CREATED BY: [redacted] CREATED: 2024-06-11 21:53 (UTC)

Files ☑ Show Empty Files ☐ Show PCAP Only CSV

Name ▲	Size	Created	Sensor	Download
test884-1718143680.pcap.enc	1.261 MB	2024-06-11 22:09 (UTC)	test884 HQ Sunnyvale	Download
test855-1718144003-activity.log	34.298 KB	2024-06-11 22:14 (UTC)	test855 Test1 Engineering	Download
test855-1718144376-activity.log	34.695 KB	2024-06-11 22:20 (UTC)	test855 Test1 Engineering	Download

Creating a packet capture

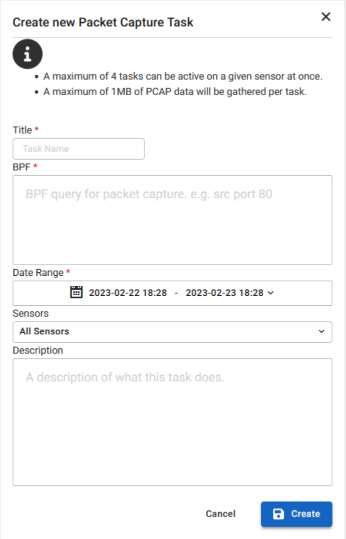
To create a new task, the selected account should have one or more sensors with the PCAP feature enabled.

To create a packet capture task:

1. Go to *Investigations > Packet Capture*.
2. Click *Create Task*. The *Create New Packet Capture Task* window opens.

3. Configure the task settings.

Field	Required	Description
Title	Yes	The name of the task.
BPF	Yes	The BPF for traffic to match.
Date Range	Yes	The interval that the task will be active for, default = the next 24 hours.
Sensors	No	The sensors that the task will run on, default = All Sensors.
Description	No	A description of the task.



Create new Packet Capture Task ✕

- A maximum of 4 tasks can be active on a given sensor at once.
- A maximum of 1MB of PCAP data will be gathered per task.

Title *
Task Name

BPF *
BPF query for packet capture. e.g. src port 80

Date Range *
2023-02-22 18:28 - 2023-02-23 18:28

Sensors
All Sensors

Description
A description of what this task does.

Cancel | Create

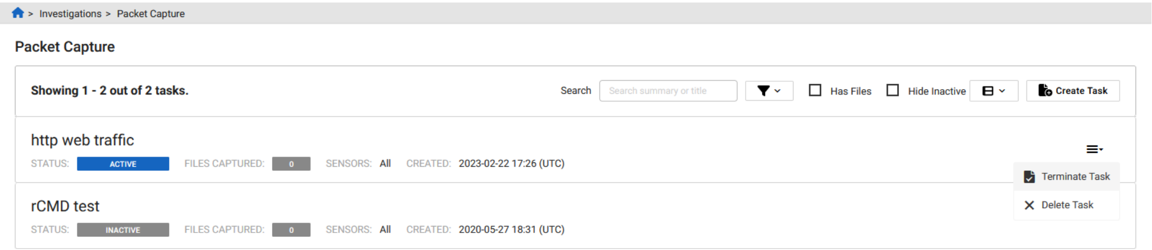
Sensors can only spool four (4) tasks at once, so only specify sensors that the task is relevant to. For example, if you are trying to troubleshoot one particular host in a particular data center, you probably only need to deploy the task to one sensor.

4. Click *Create*.

Terminating and deleting packet captures

To terminate a packet capture task:

1. Go to *Investigations > Packet Capture*.
2. Click the *Actions* menu at the right side of the task and click *Terminate Task*. A confirmation dialog opens.



> Investigations > Packet Capture

Packet Capture

Showing 1 - 2 out of 2 tasks.

Search: Search summary or title | □ Has Files | □ Hide Inactive | Create Task

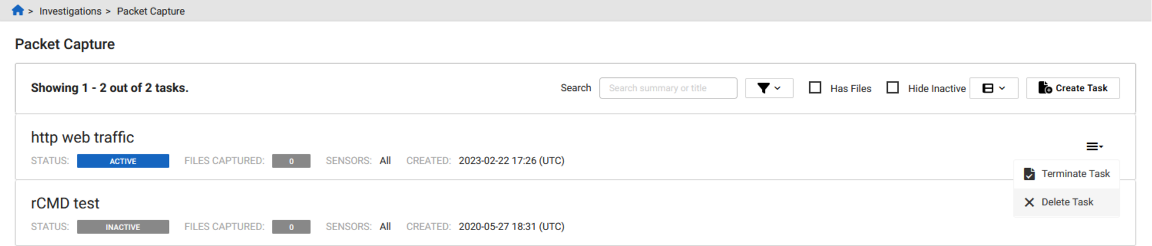
http web traffic
STATUS: ACTIVE FILES CAPTURED: 0 SENSORS: All CREATED: 2023-02-22 17:26 (UTC)

rCMD test
STATUS: INACTIVE FILES CAPTURED: 0 SENSORS: All CREATED: 2020-05-27 18:31 (UTC)

3. Click *Confirm*. The task changes to *Inactive*.

To delete a packet capture:

1. *Go to Investigate > Packet Capture*.
2. Click the *Actions* menu at the right side of the task and click *Delete*. A confirmation dialog opens.



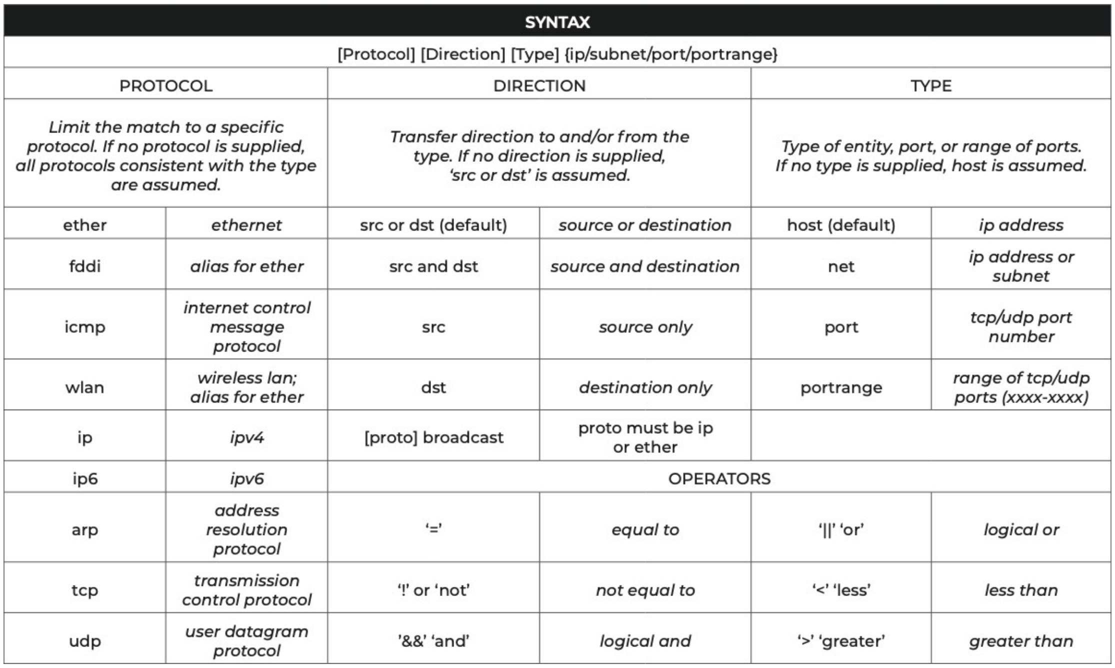
http web traffic
STATUS: ACTIVE FILES CAPTURED: 0 SENSORS: All CREATED: 2023-02-22 17:26 (UTC)

rCMD test
STATUS: INACTIVE FILES CAPTURED: 0 SENSORS: All CREATED: 2020-05-27 18:31 (UTC)

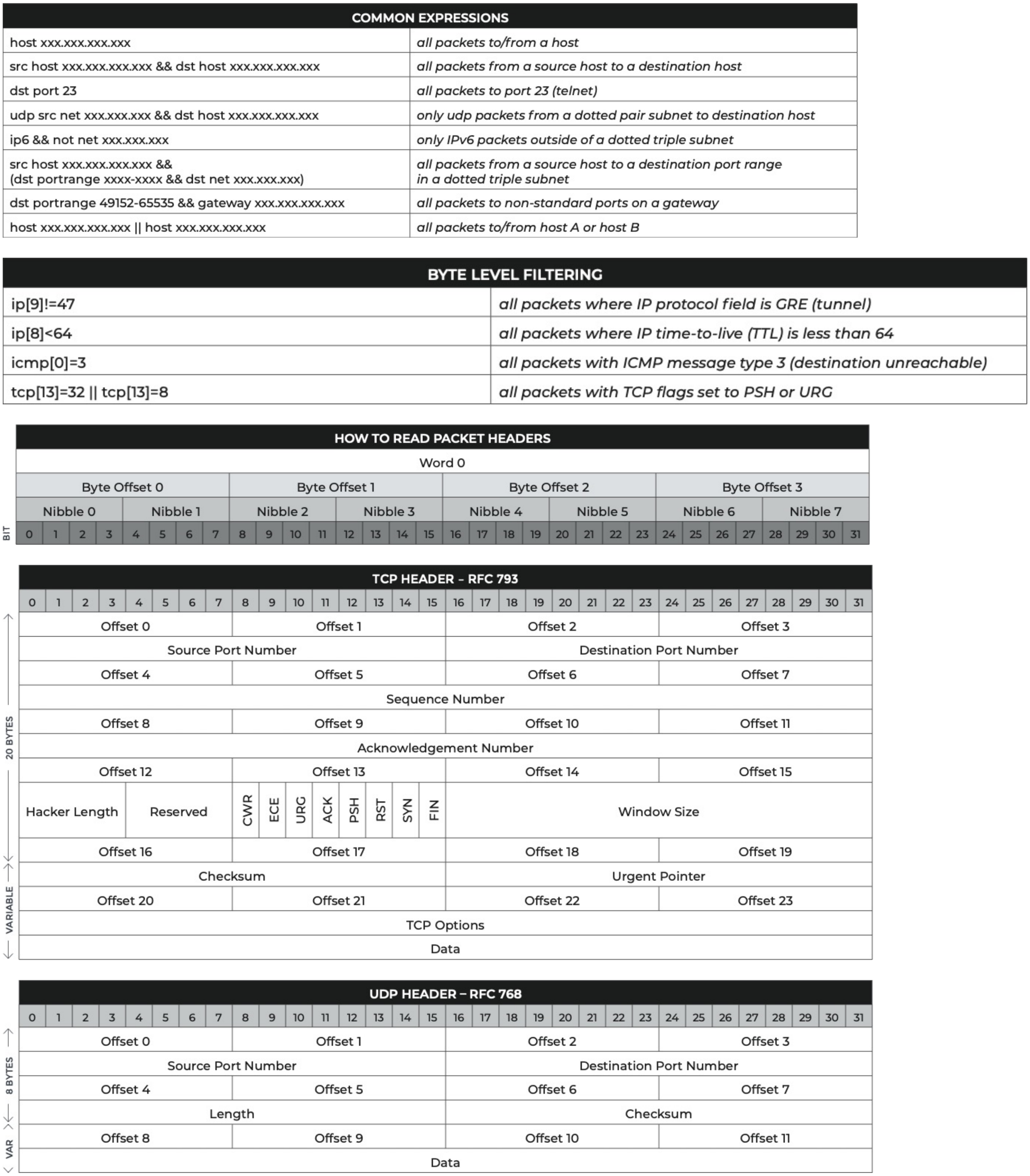
3. Click *Confirm*.

BPF resources

For in-depth information on Berkeley Packet Filters (BPFs), see The Linux Kernel Archives web site at https://www.kernel.org/. You can also download the BPF reference guide from here.



SYNTAX					
[Protocol] [Direction] [Type] {ip/subnet/port/portrange}					
PROTOCOL		DIRECTION		TYPE	
Limit the match to a specific protocol. If no protocol is supplied, all protocols consistent with the type are assumed.		*Transfer direction to and/or from the type. If no direction is supplied, 'src or dst' is assumed.*		*Type of entity, port, or range of ports. If no type is supplied, host is assumed.*	
ether	*ethernet*	src or dst (default)	*source or destination*	host (default)	*ip address*
fddi	*alias for ether*	src and dst	*source and destination*	net	*ip address or subnet*
icmp	*internet control message protocol*	src	*source only*	port	*tcp/udp port number*
wlan	*wireless lan; alias for ether*	dst	*destination only*	portrange	*range of tcp/udp ports (xxxx-xxxx)*
ip	*ipv4*	[proto] broadcast	proto must be ip or ether		
ip6	*ipv6*	OPERATORS			
arp	*address resolution protocol*	'='	*equal to*	'||' 'or'	*logical or*
tcp	*transmission control protocol*	'!' or 'not'	*not equal to*	'<' 'less'	*less than*
udp	*user datagram protocol*	'&&' 'and'	*logical and*	'>' 'greater'	*greater than*



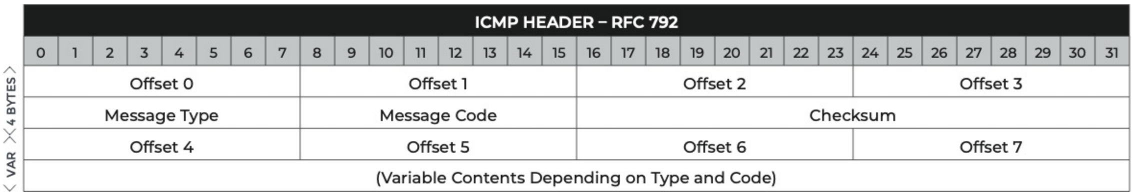
COMMON EXPRESSIONS	
host xxx.xxx.xxx.xxx	*all packets to/from a host*
src host xxx.xxx.xxx.xxx && dst host xxx.xxx.xxx.xxx	*all packets from a source host to a destination host*
dst port 23	*all packets to port 23 (telnet)*
udp src net xxx.xxx.xxx && dst host xxx.xxx.xxx.xxx	*only udp packets from a dotted pair subnet to destination host*
ip6 && not net xxx.xxx.xxx	*only IPv6 packets outside of a dotted triple subnet*
src host xxx.xxx.xxx.xxx && (dst portrange xxxx-xxxx && dst net xxx.xxx.xxx)	*all packets from a source host to a destination port range* *in a dotted triple subnet*
dst portrange 49152-65535 && gateway xxx.xxx.xxx.xxx	*all packets to non-standard ports on a gateway*
host xxx.xxx.xxx.xxx || host xxx.xxx.xxx.xxx	*all packets to/from host A or host B*

BYTE LEVEL FILTERING	
ip[9]!=47	*all packets where IP protocol field is GRE (tunnel)*
ip[8]<64	*all packets where IP time-to-live (TTL) is less than 64*
icmp[0]=3	*all packets with ICMP message type 3 (destination unreachable)*
tcp[13]=32 || tcp[13]=8	*all packets with TCP flags set to PSH or URG*

<table>
<tr><th></th><th colspan="32">HOW TO READ PACKET HEADERS</th></tr>
<tr><td></td><td colspan="32">Word 0</td></tr>
<tr><td></td><td colspan="8">Byte Offset 0</td><td colspan="8">Byte Offset 1</td><td colspan="8">Byte Offset 2</td><td colspan="8">Byte Offset 3</td></tr>
<tr><td></td><td colspan="4">Nibble 0</td><td colspan="4">Nibble 1</td><td colspan="4">Nibble 2</td><td colspan="4">Nibble 3</td><td colspan="4">Nibble 4</td><td colspan="4">Nibble 5</td><td colspan="4">Nibble 6</td><td colspan="4">Nibble 7</td></tr>
<tr><td>BIT</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td><td>31</td></tr>
</table>

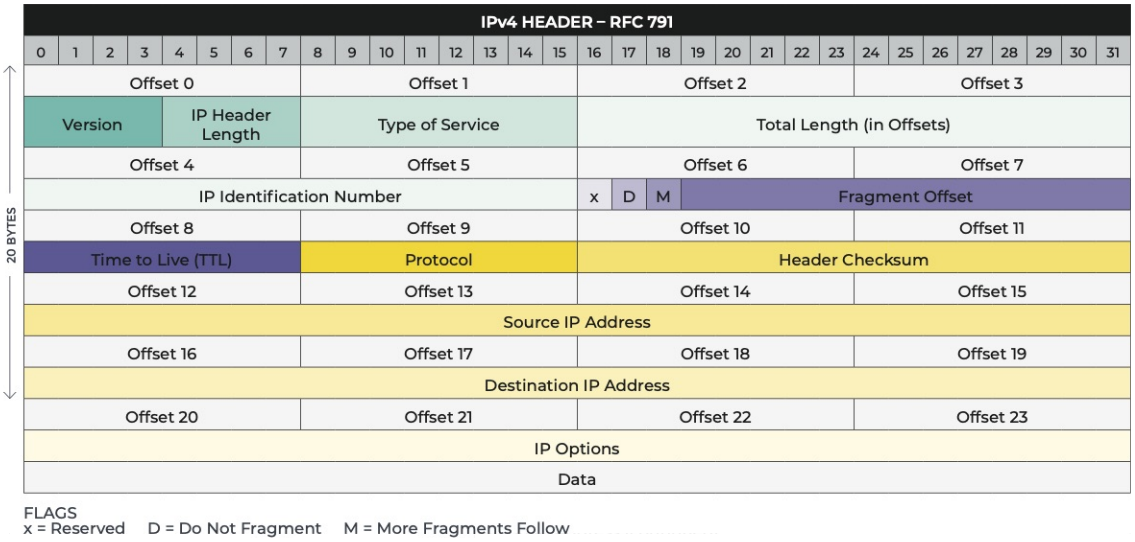
<table>
<tr><th></th><th colspan="32">TCP HEADER – RFC 793</th></tr>
<tr><td></td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td><td>31</td></tr>
<tr><td rowspan="9">20 BYTES</td><td colspan="8">Offset 0</td><td colspan="8">Offset 1</td><td colspan="8">Offset 2</td><td colspan="8">Offset 3</td></tr>
<tr><td colspan="16">Source Port Number</td><td colspan="16">Destination Port Number</td></tr>
<tr><td colspan="8">Offset 4</td><td colspan="8">Offset 5</td><td colspan="8">Offset 6</td><td colspan="8">Offset 7</td></tr>
<tr><td colspan="32">Sequence Number</td></tr>
<tr><td colspan="8">Offset 8</td><td colspan="8">Offset 9</td><td colspan="8">Offset 10</td><td colspan="8">Offset 11</td></tr>
<tr><td colspan="32">Acknowledgement Number</td></tr>
<tr><td colspan="8">Offset 12</td><td colspan="8">Offset 13</td><td colspan="8">Offset 14</td><td colspan="8">Offset 15</td></tr>
<tr><td colspan="4">Hacker Length</td><td colspan="4">Reserved</td><td>CWR</td><td>ECE</td><td>URG</td><td>ACK</td><td>PSH</td><td>RST</td><td>SYN</td><td>FIN</td><td colspan="16">Window Size</td></tr>
<tr><td colspan="8">Offset 16</td><td colspan="8">Offset 17</td><td colspan="8">Offset 18</td><td colspan="8">Offset 19</td></tr>
<tr><td rowspan="4">VARIABLE</td><td colspan="16">Checksum</td><td colspan="16">Urgent Pointer</td></tr>
<tr><td colspan="8">Offset 20</td><td colspan="8">Offset 21</td><td colspan="8">Offset 22</td><td colspan="8">Offset 23</td></tr>
<tr><td colspan="32">TCP Options</td></tr>
<tr><td colspan="32">Data</td></tr>
</table>

<table>
<tr><th></th><th colspan="32">UDP HEADER – RFC 768</th></tr>
<tr><td></td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td><td>31</td></tr>
<tr><td rowspan="4">8 BYTES</td><td colspan="8">Offset 0</td><td colspan="8">Offset 1</td><td colspan="8">Offset 2</td><td colspan="8">Offset 3</td></tr>
<tr><td colspan="16">Source Port Number</td><td colspan="16">Destination Port Number</td></tr>
<tr><td colspan="8">Offset 4</td><td colspan="8">Offset 5</td><td colspan="8">Offset 6</td><td colspan="8">Offset 7</td></tr>
<tr><td colspan="16">Length</td><td colspan="16">Checksum</td></tr>
<tr><td rowspan="2">VAR</td><td colspan="8">Offset 8</td><td colspan="8">Offset 9</td><td colspan="8">Offset 10</td><td colspan="8">Offset 11</td></tr>
<tr><td colspan="32">Data</td></tr>
</table>



ICMP HEADER – RFC 792

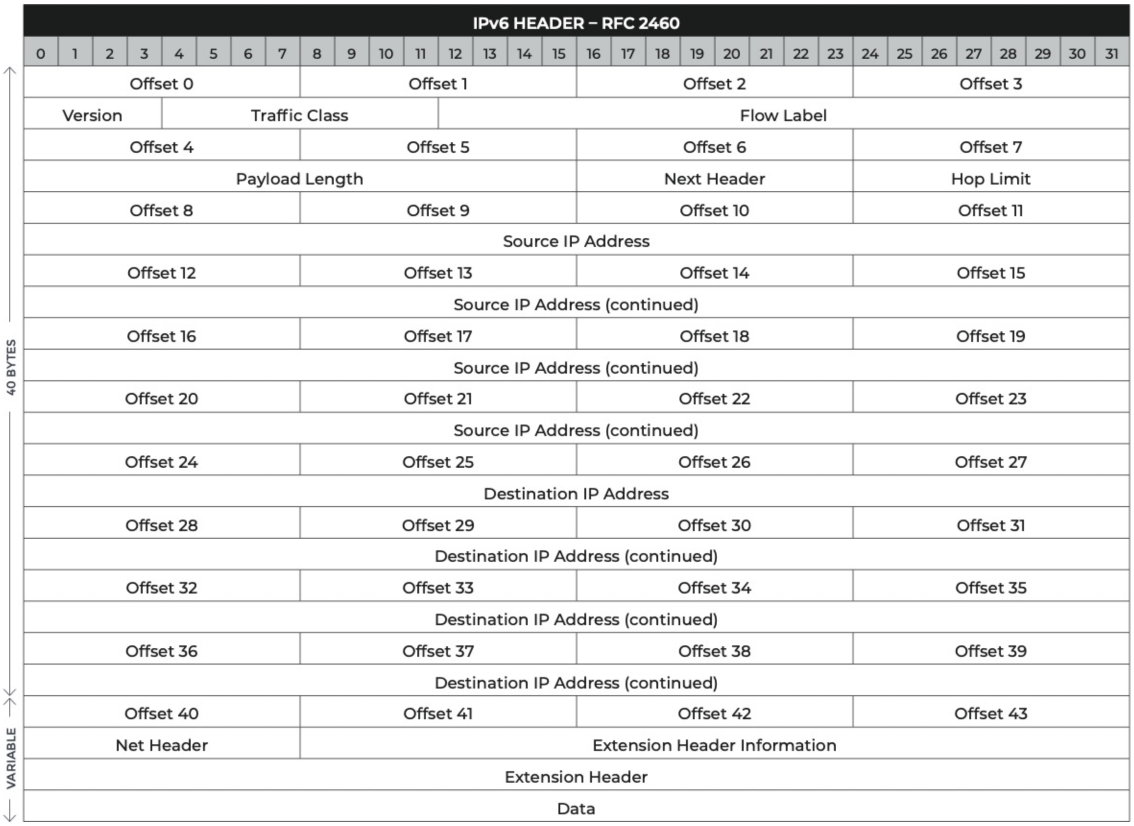
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Offset 0								Offset 1								Offset 2								Offset 3							
Message Type								Message Code								Checksum															
Offset 4								Offset 5								Offset 6								Offset 7							
(Variable Contents Depending on Type and Code)																															



IPv4 HEADER – RFC 791

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Offset 0								Offset 1								Offset 2								Offset 3							
Version				IP Header Length				Type of Service								Total Length (in Offsets)															
Offset 4								Offset 5								Offset 6								Offset 7							
IP Identification Number																x	D	M	Fragment Offset												
Offset 8								Offset 9								Offset 10								Offset 11							
Time to Live (TTL)								Protocol								Header Checksum															
Offset 12								Offset 13								Offset 14								Offset 15							
Source IP Address																															
Offset 16								Offset 17								Offset 18								Offset 19							
Destination IP Address																															
Offset 20								Offset 21								Offset 22								Offset 23							
IP Options																															
Data																															

FLAGS
x = Reserved D = Do Not Fragment M = More Fragments Follow



40 BYTES
VARIABLE

IPv6 HEADER – RFC 2460

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Offset 0								Offset 1								Offset 2								Offset 3							
Version				Traffic Class								Flow Label																			
Offset 4								Offset 5								Offset 6								Offset 7							
Payload Length																Next Header								Hop Limit							
Offset 8								Offset 9								Offset 10								Offset 11							
Source IP Address																															
Offset 12								Offset 13								Offset 14								Offset 15							
Source IP Address (continued)																															
Offset 16								Offset 17								Offset 18								Offset 19							
Source IP Address (continued)																															
Offset 20								Offset 21								Offset 22								Offset 23							
Source IP Address (continued)																															
Offset 24								Offset 25								Offset 26								Offset 27							
Destination IP Address																															
Offset 28								Offset 29								Offset 30								Offset 31							
Destination IP Address (continued)																															
Offset 32								Offset 33								Offset 34								Offset 35							
Destination IP Address (continued)																															
Offset 36								Offset 37								Offset 38								Offset 39							
Destination IP Address (continued)																															
Offset 40								Offset 41								Offset 42								Offset 43							
Net Header								Extension Header Information																							
Extension Header																															
Data																															

PCAP encryption

FortiNDR Cloud requires the encryption of all PCAP data captured and stored on the platform, backed by public key cryptography. Adding a PEM-encoded RSA key to an account on the Account management page will enable this feature.

Activation of the PCAP encryption feature prevents FortiNDR Cloud analysts from reviewing the contents of any captured packet data, and renders that data unrecoverable should the private key associated with the uploaded public key be lost.

Generating a key

Be sure to only upload the contents of the `public.pem` file and keep the `private.pem` file safe. In the event that `private.pem` is lost, FortiNDR Cloud is unable to recover either it or the contents of any PCAP encrypted with the matching public key

For instructions on how to upload the generated public key, see the Settings on page 116 page.

Windows

To generate a key pair on Windows, we recommended using the PCAPUtil program. You can download the binary here or fromAccount management settings on page 141 in Account management on page 135.

You must be logged in to FortiNDR Cloud to download the binary.

Generate a key pair with files named `public.pem` (public key) and `private.pem` (private key) in the current directory. PCAPUtil supports overriding all file names and locations via command line arguments.

```
bash
pcaputil generate
```

macOS and Linux

Generate a public/private key pair using the built-in OpenSSL library.

```
bash
openssl genrsa -out private.pem 4096
openssl rsa -in private.pem -outform PEM -pubout -out public.pem
```

Decrypting a PCAP

Unencrypted PCAP files are denoted with an extension of `.pcap`, and encrypted PCAP files are denoted with the extension `.pcap.enc`.

Windows

Encrypted PCAP files can be decrypted with the FortiNDR CloudPCAPUtil binary.

You must be logged in to FortiNDR Cloud to access this file.

```
pcaputil decrypt -private private.pem -src sen1-1502499443.pcap.enc -dst sen1-1502499443.pcap
```

macOS and Linux

Use the following script to extract and decrypt the PCAP:

```
#!/usr/bin/env bash
show_help () {
echo "Usage: $0 private_key encrypted_pcap decrypted_pcap"
}
if [ -z $3 ]; then
show_help
exit 0
fi
tar zxf $2
openssl pkeyutl -decrypt -inkey $1 -in session.key.enc -out session.key
#openssl rsautl -decrypt -inkey $1 -in session.key.enc -out session.key
key=$(xxd -p -c 96 session.key | cut -c 1-64)
iv=$(xxd -p -c 96 session.key | cut -c 65-96)
openssl enc -aes-256-cbc -d -in data -out $3 -nosalt -K $key -iv $iv
rm data
rm session.key
rm session.key.enc
```

Managing encryption keys

Any PCAP captured and stored in FortiNDR Cloud will be encrypted by adding the associated keys to the account.

FortiNDR Cloud requires the encryption of all PCAP data captured and stored on the platform, backed by public key cryptography.

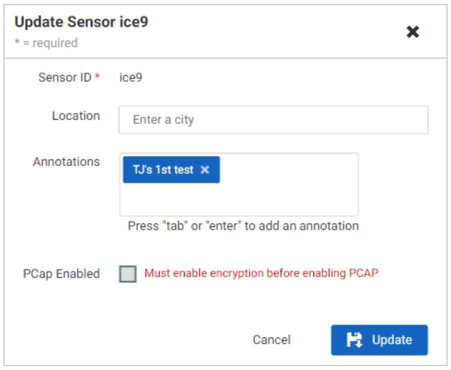
Encryption key requirement impact on existing sensors

If you do not have a PCAP-enabled sensor	The encryption key will be required to enable PCAP on sensors
If you have a PCAP-enabled sensor	• There is no change in behavior for existing PCAP-enabled sensors. • After the encryption key is provided, the PCAP-enabled sensor will upload encrypted PCAP files. • For existing PCAP-enabled sensors that are capturing without a key, you should still be able to disable them without a key. • Encryption keys can be updated directly without needing to delete an existing key. Existing behaviors and PCAP-enabled sensors will not be impacted.
When deleting the encryption key	• PCAP will be disabled on all the sensors for this account. • All PCAP upload requests for those sensors will be silently ignored. • When the encryption key is provided again after it's been deleted, you will need to enable PCAP on the sensor manually.

Enabling PCAP on a sensor requires encryption

When enabling PCAP on an individual sensor, the *PCAP Enabled* option is disabled unless you have encryption enabled and display a note advising that you must enable encryption before enabling PCAP.

Warning appears on Sensor Update dialog accessed from the list of sensors:



Update Sensor ice9

* = required

Sensor ID * ice9

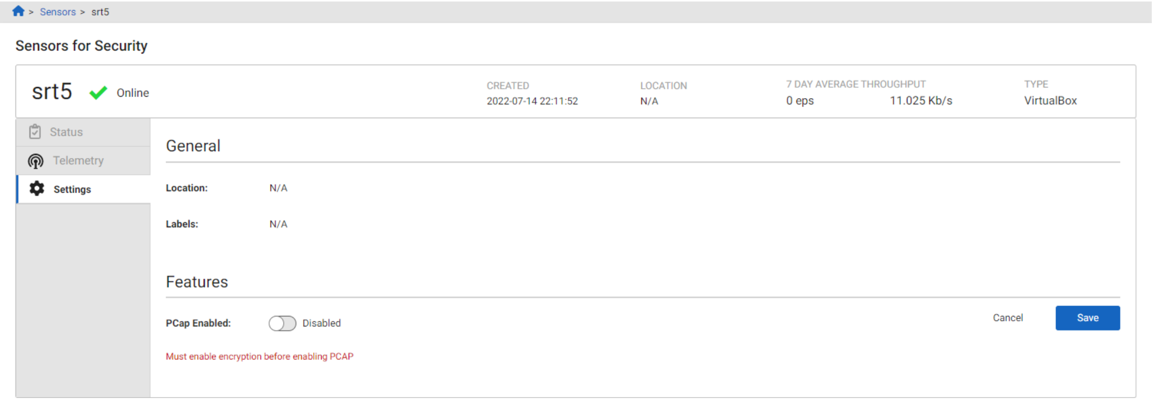
Location Enter a city

Annotations TJ's 1st test ✕

Press "tab" or "enter" to add an annotation

PCap Enabled □ Must enable encryption before enabling PCAP

Warning appears on the detailed Sensor Settings page:



Sensors for Security

srt5 ✓ Online

CREATED	LOCATION	7 DAY AVERAGE THROUGHPUT		TYPE
2022-07-14 22:11:52	N/A	0 eps	11.025 Kb/s	VirtualBox

General

Location: N/A

Labels: N/A

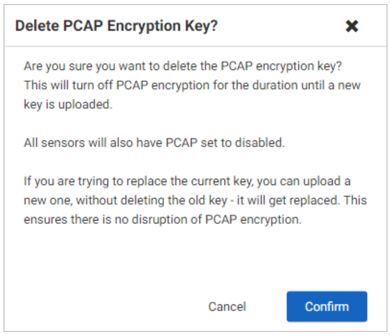
Features

PCap Enabled: Disabled

Must enable encryption before enabling PCAP

Deleting a PCAP encryption key

When deleting a PCAP key for an account, a warning will appear advising that PCAP will be disabled for sensors associated with that account.



Delete PCAP Encryption Key?

Are you sure you want to delete the PCAP encryption key? This will turn off PCAP encryption for the duration until a new key is uploaded.

All sensors will also have PCAP set to disabled.

If you are trying to replace the current key, you can upload a new one, without deleting the old key - it will get replaced. This ensures there is no disruption of PCAP encryption.

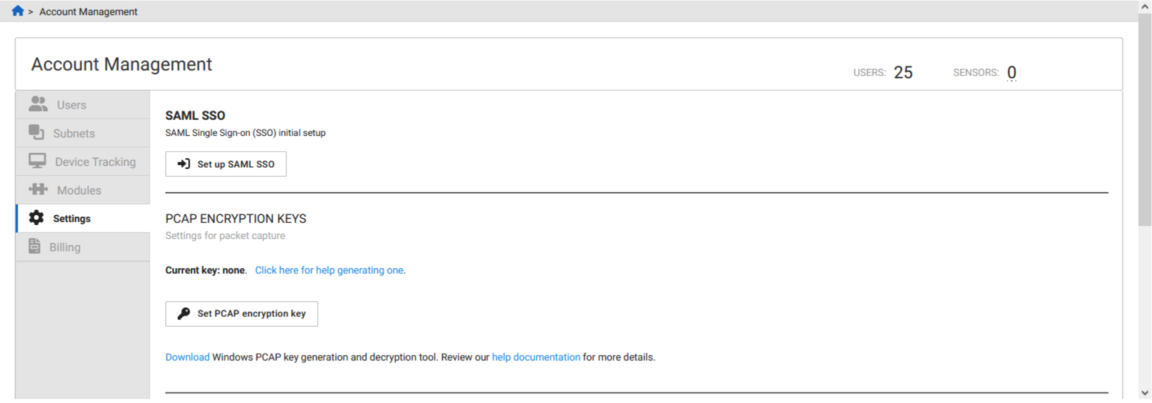
Click *Confirm* to acknowledge the message and proceed.

Encryption key settings

To access PCAP Encryption Keys settings:

1. Click on the gear icon on the top right and select *Account Management*.
2. Select an account.

3. On the left navigation, select *Settings*.



Account Management

USERS: 25 SENSORS: 0

SAML SSO

SAML Single Sign-on (SSO) initial setup

PCAP ENCRYPTION KEYS

Settings for packet capture

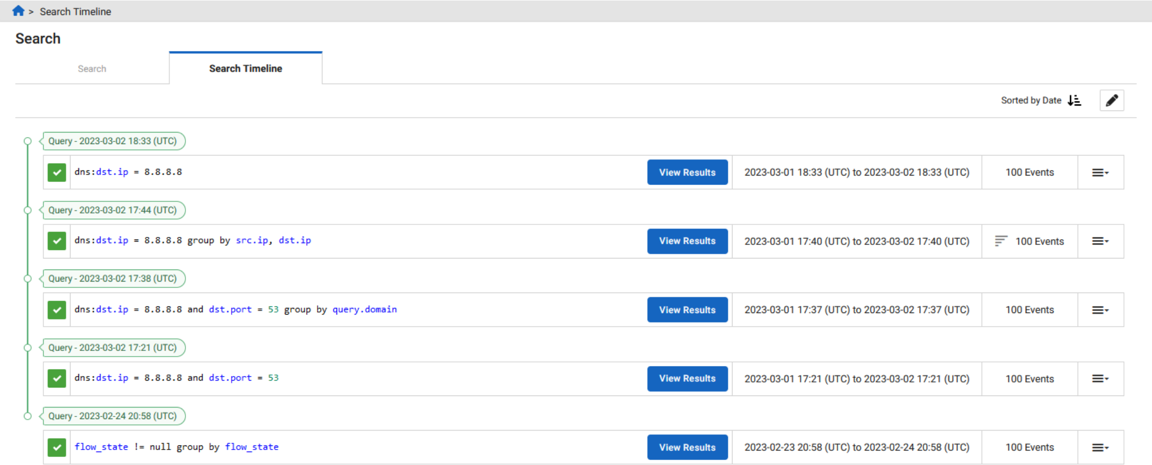
Current key: none. Click here for help generating one.

Download Windows PCAP key generation and decryption tool. Review our help documentation for more details.

The *Set PCAP encryption key* button will only appear for the Admin role.

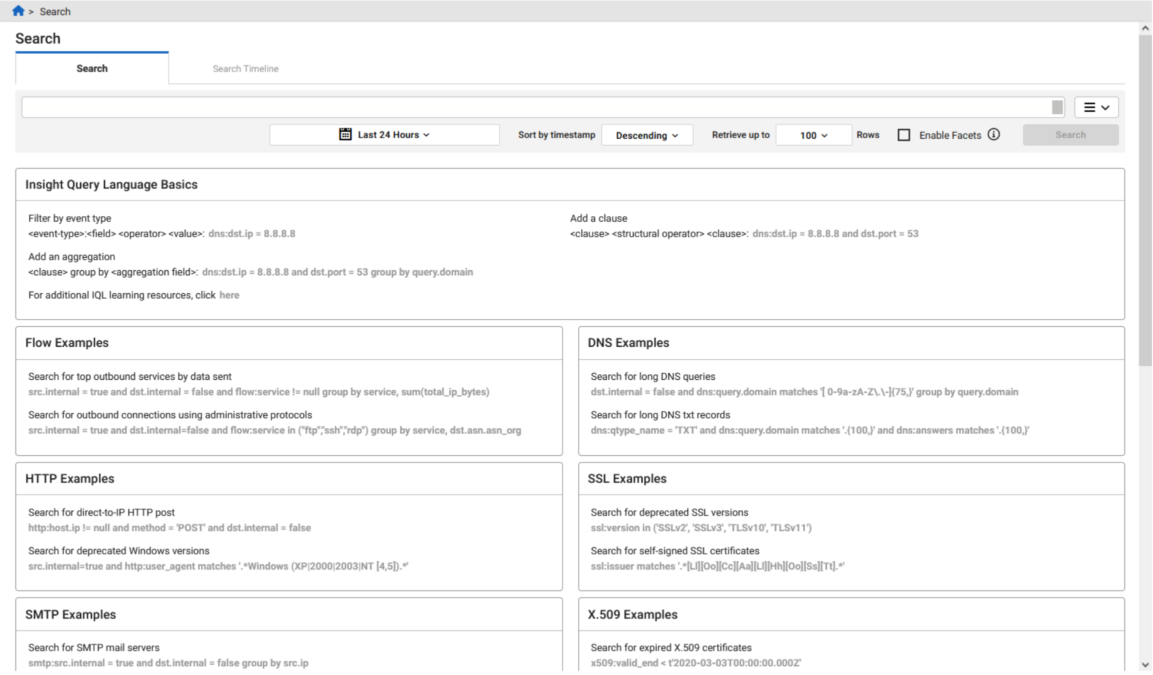
Private search

The *Private Search* page shows the history of Adhoc queries. Use this page to view the query status, past query results, delete query, and create detection out of the selected Adhoc query.



Query	Query text	Time range	Events
Query - 2023-03-02 18:33 (UTC)	dns:dst.ip = 8.8.8.8	2023-03-01 18:33 (UTC) to 2023-03-02 18:33 (UTC)	100 Events
Query - 2023-03-02 17:44 (UTC)	dns:dst.ip = 8.8.8.8 group by src.ip, dst.ip	2023-03-01 17:40 (UTC) to 2023-03-02 17:40 (UTC)	100 Events
Query - 2023-03-02 17:38 (UTC)	dns:dst.ip = 8.8.8.8 and dst.port = 53 group by query.domain	2023-03-01 17:37 (UTC) to 2023-03-02 17:37 (UTC)	100 Events
Query - 2023-03-02 17:21 (UTC)	dns:dst.ip = 8.8.8.8 and dst.port = 53	2023-03-01 17:21 (UTC) to 2023-03-02 17:21 (UTC)	100 Events
Query - 2023-02-24 20:58 (UTC)	flow_state != null group by flow_state	2023-02-23 20:58 (UTC) to 2023-02-24 20:58 (UTC)	100 Events

The Search tab contains example queries of topics such as Flow, DNS, X.509, RDP, HTTP, SSH, SMTP, FTP, SSL, Kerberos, SMB, NTLM, DCE-RPC and PE are added. You can click any of the example queries, modify them, and then perform the search operation.



Insight Query Language Basics

Filter by event type
<event-type>:<field> <operator> <value>: dns:dst.ip = 8.8.8.8

Add a clause
<clause> <structural operator> <clause>: dns:dst.ip = 8.8.8.8 and dst.port = 53

Add an aggregation
<clause> group by <aggregation field>: dns:dst.ip = 8.8.8.8 and dst.port = 53 group by query.domain

For additional IQL learning resources, click here

Flow Examples

Search for top outbound services by data sent
src.internal = true and dst.internal = false and flow:service != null group by service, sum(total_ip_bytes)

Search for outbound connections using administrative protocols
src.internal = true and dst.internal=false and flow:service in ("ftp","ssh","rdp") group by service, dst.asn.asn_org

DNS Examples

Search for long DNS queries
dst.internal = false and dns:query.domain matches '[0-9a-zA-Z\.\-]{75,}' group by query.domain

Search for long DNS txt records
dns:qtype_name = 'TXT' and dns:query.domain matches '.{100,}' and dns:answers matches '.{100,}'

HTTP Examples

Search for direct-to-IP HTTP post
http:host.ip != null and method = 'POST' and dst.internal = false

Search for deprecated Windows versions
src.internal=true and http:user_agent matches '.*Windows (XP|2000|2003|NT [4,5]).*'

SSL Examples

Search for deprecated SSL versions
ssl:version in ('SSLv2', 'SSLv3', 'TLSv10', 'TLSv11')

Search for self-signed SSL certificates
ssl:issuer matches '.*[Ll][Oo][Cc][Aa][Ll][Hh][Oo][Ss][Tt].*'

SMTP Examples

Search for SMTP mail servers
smtp:src.internal = true and dst.internal = false group by src.ip

X.509 Examples

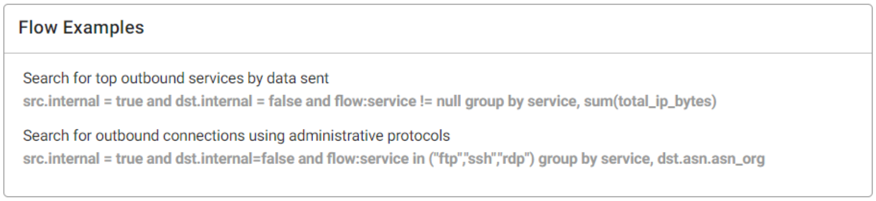
Search for expired X.509 certificates
x509:valid_end < t'2020-03-03T00:00:00.000Z'

Creating queries with Private Search

Privately search and iterate over recent events. You can quickly modify and re-run the queries. You can use a query in Private Search to create a new detector or investigation, or use the query in an existing investigation.

To perform a search:

1. Go to *Investigations* > *Private Search*.
2. Click the *Search* tab.
3. Enter the query in the search box using one of the following options:
   - Enter the IQL query in the *Search* field. By default, you can view the results of the events that occurred in the last 24 hours. For more information, see IQL reference guide on page 174.
   - Click an example search string to add it to the Search field.



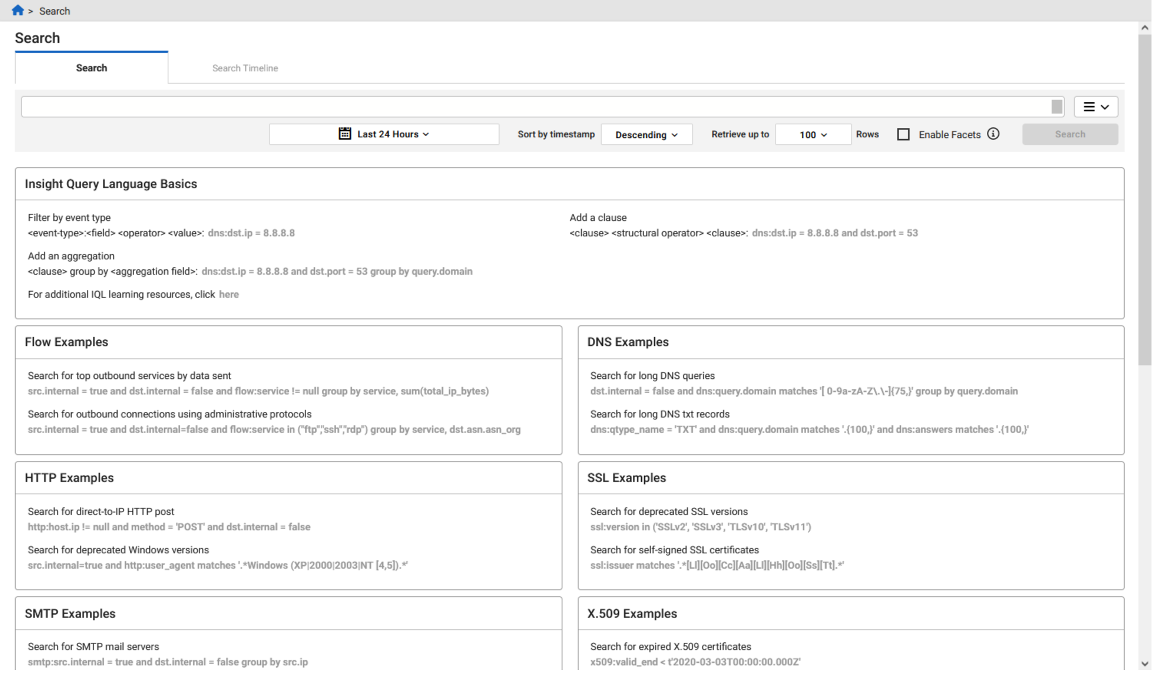
Flow Examples

Search for top outbound services by data sent
src.internal = true and dst.internal = false and flow:service != null group by service, sum(total_ip_bytes)

Search for outbound connections using administrative protocols
src.internal = true and dst.internal=false and flow:service in ("ftp","ssh","rdp") group by service, dst.asn.asn_org

4. Configure the search settings.

Date range	Use the date picker to configure the date range or select *Last Hour*, *Last 24 Hours*, or *Last 7 days* and click *Apply*. You can select any time period within the last 365 days as long as it is limited to seven days.
Sort by timestamp	Select *Ascending* or *Descending*.
Retrieve up to *xxx* Rows	Select *100*, *500* or *1,000* rows.
Add to Existing Investigation	From the *Choose Investigation* dropdown, select and investigation.
Enable Facets	Select to return the panel that allows narrowing the search. This may make the query longer to complete. For more information, see Facet Search on page 82.



Insight Query Language Basics

Filter by event type
<event-type>:<field> <operator> <value>: dns:dst.ip = 8.8.8.8

Add a clause
<clause> <structural operator> <clause>: dns:dst.ip = 8.8.8.8 and dst.port = 53

Add an aggregation
<clause> group by <aggregation field>: dns:dst.ip = 8.8.8.8 and dst.port = 53 group by query.domain

For additional IQL learning resources, click here

Flow Examples

Search for top outbound services by data sent
src.internal = true and dst.internal = false and flow:service != null group by service, sum(total_ip_bytes)

Search for outbound connections using administrative protocols
src.internal = true and dst.internal=false and flow:service in ("ftp","ssh","rdp") group by service, dst.asn.asn_org

DNS Examples

Search for long DNS queries
dst.internal = false and dns:query.domain matches '[0-9a-zA-Z\.\-]{75,}' group by query.domain

Search for long DNS txt records
dns:qtype_name = 'TXT' and dns:query.domain matches '.{100,}' and dns:answers matches '.{100,}'

HTTP Examples

Search for direct-to-IP HTTP post
http:host.ip != null and method = 'POST' and dst.internal = false

Search for deprecated Windows versions
src.internal=true and http:user_agent matches '.*Windows (XP|2000|2003|NT [4,5]).*'

SSL Examples

Search for deprecated SSL versions
ssl:version in ('SSLv2', 'SSLv3', 'TLSv10', 'TLSv11')

Search for self-signed SSL certificates
ssl:issuer matches '.*[Ll][Oo][Cc][Aa][Ll][Hh][Oo][Ss][Tt].*'

SMTP Examples

Search for SMTP mail servers
smtp:src.internal = true and dst.internal = false group by src.ip

X.509 Examples

Search for expired X.509 certificates
x509:valid_end < t'2020-03-03T00:00:00.000Z'

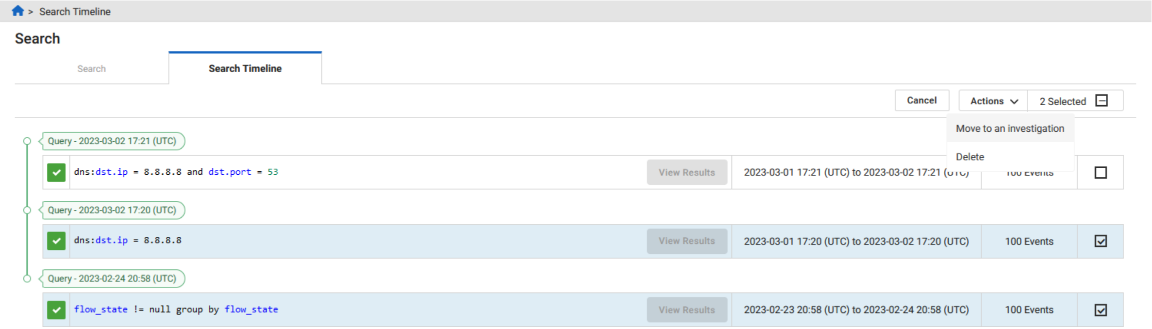
5. Click *Search*.

To move Private Search queries to Investigations:

1. Click Investigations > Private Search.
2. Click the *Private Search* tab.

To move a query	Click the Actions menu at the end of the row and select *Move to an Investigation*. ≡▾
To move multiple queries	1. Click the Edit button and select the queries to be moved.

	✎ 2. Click *Actions* > *Move to an Investigation* .



Query - 2023-03-02 17:21 (UTC)				
✓ dns:dst.ip = 8.8.8.8 and dst.port = 53	View Results	2023-03-01 17:21 (UTC) to 2023-03-02 17:21 (UTC)	100 Events	□
Query - 2023-03-02 17:20 (UTC)				
✓ dns:dst.ip = 8.8.8.8	View Results	2023-03-01 17:20 (UTC) to 2023-03-02 17:20 (UTC)	100 Events	☑
Query - 2023-02-24 20:58 (UTC)				
✓ flow_state != null group by flow_state	View Results	2023-02-23 20:58 (UTC) to 2023-02-24 20:58 (UTC)	100 Events	☑

3. Create a new investigation or add the query to an existing investigation.

Create a New Investigation	Select this option to create a new investigation. Enter the *Investigation Name* and *Description*. The default name for new investigations is the first and last name of the user creating the investigation as well as a date stamp of when the investigation was created.
Add to Existing Investigation	From the *Choose Investigation* dropdown, select and investigation.

4. Click *Move*.

To delete queries in the Private Search tab:

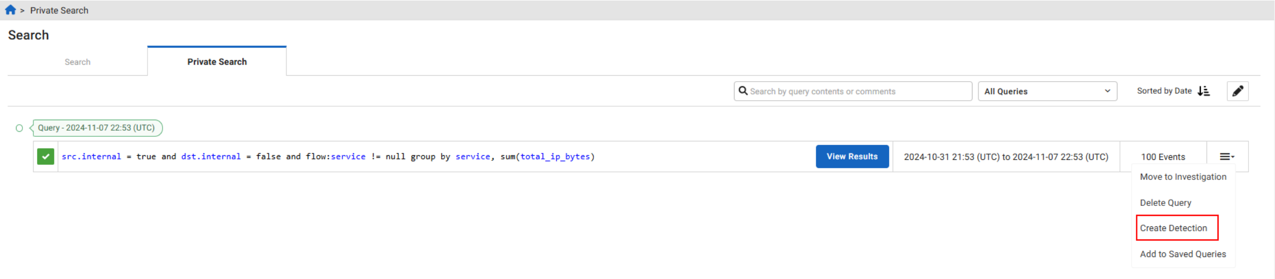
1. Click *Investigations* > *Private Search*.
2. Click the *Private Search* tab.

To delete a query	Click the Actions menu at the end of the row and select *Delete Query*. ≡
To delete multiple queries	1. Click the Edit button and select the queries to be deleted. ✎ 2. Click *Actions* > *Delete Query* .

3. In the confirmation dialog, click *Confirm*.

To create a detection from an adhoc query:

1. Click the *Private Search* tab.
2. Click the *Actions* menu at the end of the row and click *Create Detection*.The *Create A Detector* page opens.



```
src.internal = true and dst.internal = false and flow:service != null group by service, sum(total_ip_bytes)
```

3. Configure the detector and click *Save Detector*.

Detector Query	You have the option of selecting a new query or using the query parameters the results are based on. • The query field displays the facet filters used in the query. • Click *Select a new Query* to select a saved query or a query from your history.
Impacted Device IP can appear in the fields	Click *Change Fields* to select the specific fields you want to use to generate a detection. By default, any internal IP address in the *src.ip* or *dst.ip* fields will be used to generate detections.
Indicators are captured in the fields	Click *Change Fields* to add or remove an Indicator Field for a detector. You can choose up to five fields.
Name	Enter a name for the detector query.
Severity	Select *High*, *Moderate* or *Low* from the dropdown list.
Confidence	Select *High*, *Moderate* or *Low* from the dropdown list.
Category	Select the detector category from the dropdown list.
Primary Technique	Select the Primary Technique from the dropdown list.
Secondary Technique	Select the Secondary Technique from the dropdown list.
Specificity	Select *Campaign*, *Tool Implementation*, *Procedure*, *Technique*, or *Tactic* from the dropdown.
Description	Enter a description of the new detector.
Run on Accounts	Click *Manage Run List* to choose which accounts the new detector should run in. In the dialog that opens, choose an account and click *Save*. This is applicable only if you have access to multiple accounts. For example, if your organization acquired another organization, once you deploy sensors in their network, it might be easier to ingest that data into a separate account and give your team access to it. If you were to write a detector targeting specific subnets in your account, that detector wouldn't be applicable to the acquired company's network, so you would only want to deploy it in your account.
Data Sources	Enable *Zeek*, *Fortinet*, *Suricata*, or *Zscaler*.
Resolution Settings	**Resolution Style** Select *Auto* or *Manual*.

	Automatic Resolution Period	Select between *6 hours* and *1 Month*. The default is *1 Week*.

To save a query:

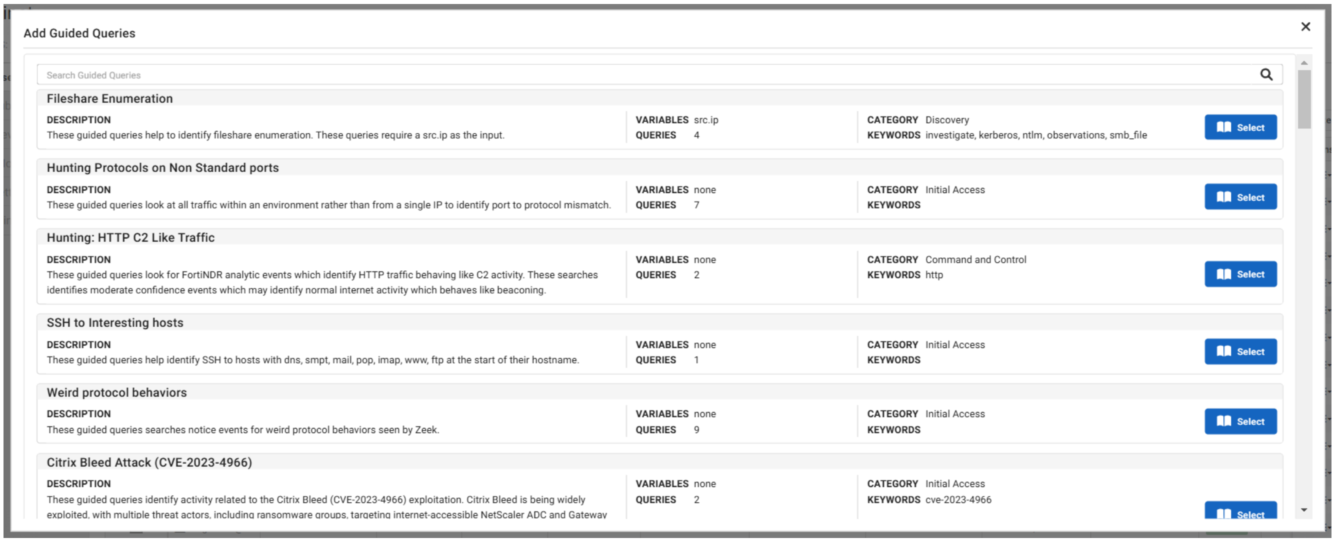
1. Click the *Private Search* tab.
2. Click the Actions menu at the end of the row and click *Add to Saved Queries*.The *Save Query* dialog opens.
3. Enter the query details and click *Save*.

Query Name	Enter a name for the query.
Search Query	This field cannot be edited.
Description	Enter a description of the query.

You can use a saved query when you create a new detector or investigation.

Guided queries

Use *Guided Queries* to start a new investigation, add queries to expand upon an existing one, or run event queries. The pre-defined queries on this page have been created by FortiGuard Labs with a focus on identifying potential security vulnerabilities or suspicious activities within a network.



Add Guided Queries

Search Guided Queries

Fileshare Enumeration
DESCRIPTION
These guided queries help to identify fileshare enumeration. These queries require a src.ip as the input.
VARIABLES src.ip
QUERIES 4
CATEGORY Discovery
KEYWORDS investigate, kerberos, ntlm, observations, smb_file

Hunting Protocols on Non Standard ports
DESCRIPTION
These guided queries look at all traffic within an environment rather than from a single IP to identify port to protocol mismatch.
VARIABLES none
QUERIES 7
CATEGORY Initial Access
KEYWORDS

Hunting: HTTP C2 Like Traffic
DESCRIPTION
These guided queries look for FortiNDR analytic events which identify HTTP traffic behaving like C2 activity. These searches identifies moderate confidence events which may identify normal internet activity which behaves like beaconing.
VARIABLES none
QUERIES 2
CATEGORY Command and Control
KEYWORDS http

SSH to Interesting hosts
DESCRIPTION
These guided queries help identify SSH to hosts with dns, smpt, mail, pop, imap, www, ftp at the start of their hostname.
VARIABLES none
QUERIES 1
CATEGORY Initial Access
KEYWORDS

Weird protocol behaviors
DESCRIPTION
These guided queries searches notice events for weird protocol behaviors seen by Zeek.
VARIABLES none
QUERIES 9
CATEGORY Initial Access
KEYWORDS

Citrix Bleed Attack (CVE-2023-4966)
DESCRIPTION
These guided queries identify activity related to the Citrix Bleed (CVE-2023-4966) exploitation. Citrix Bleed is being widely exploited, with multiple threat actors, including ransomware groups, targeting internet-accessible NetScaler ADC and Gateway
VARIABLES none
QUERIES 2
CATEGORY Initial Access
KEYWORDS cve-2023-4966

To run a guided query:

1. Go to *Investigations* > *Guided Queries*.
2. Scroll through the list of guided queries, or use the search field to find a query by keyword. Click *Select*. The query details page opens.

> If this is your first query, we suggest running the query named *Example Hunt* to start.

3. Configure the query settings:

Date range	Use the date picker to configure the date range.
Enable Facets	Select to return the panel that allows narrowing the search. This may make the query longer to complete. For more information, see Facet Search on page 82.
Variables	Enter the required variable(s) for the queries. Multiple variables are supported. Values can be entered either as: • Individual items, followed by the tab or enter key. The value appears as a pill that can then be deleted, if required. • *Bulk indicator* icon. This brings up an entry screen. Pasting the text is supported. After pressing the button, FortiNDR Cloud extracts the applicable indicators from the text and adds them as variables. You can also delete the unneeded variables.
Create a New Investigation	Select this option to create a new investigation. Enter the *Investigation Name* and *Description*. The default name for new investigations is the first and last name of the user creating the investigation as well as a date stamp of when the investigation was created.
Add to Existing Investigation	From the *Choose Investigation* dropdown, select and investigation.

> Not all guided queries use variables.

4. (Optional) In the *Investigation Name* field, enter a unique name for the query.
5. Click *Run Guided Queries*. The query starts to run.
6. After the query has run, go to *Investigations* and click the query name. The Investigation details page opens.
7. Click *View Results*. The query results are displayed.

Adding a guided query to an investigation

To add a guided query to an investigation:

1. Go to *Investigations* > *Investigate* and open an investigation in the list.
2. Click the *Add Guided Queries* button. Alternatively, click on Add menu (**+**) in the top-right corner of the page and select *Add Guided Queries*. The *Add Guided Queries* page opens.
3. Click *Select*.
4. Configure the query settings.

Date range	Use the date picker to configure the date range.
Enable Facets	Select to return the panel that allows narrowing the search. This may make the query longer to complete. For more information, see Facet Search on page 82.
Variables	Enter the required variable(s) for the queries. Multiple variables are supported. Values can be entered either as: • Individual items, followed by the tab or enter key. The value appears as a pill that can then be deleted, if required. • *Bulk indicator* icon. This brings up an entry screen. Pasting the text is supported. After pressing the button, FortiNDR Cloud extracts the applicable indicators from the text and adds them as variables. You can also delete the unneeded variables.
Create a New Investigation	Select this option to create a new investigation. Enter the *Investigation Name* and *Description*. The default name for new investigations is the first and last name of the user creating the investigation as well as a date stamp of when the investigation was created.
Add to Existing Investigation	From the *Choose Investigation* dropdown, select and investigation.

5. Click *Run Guided Query*.

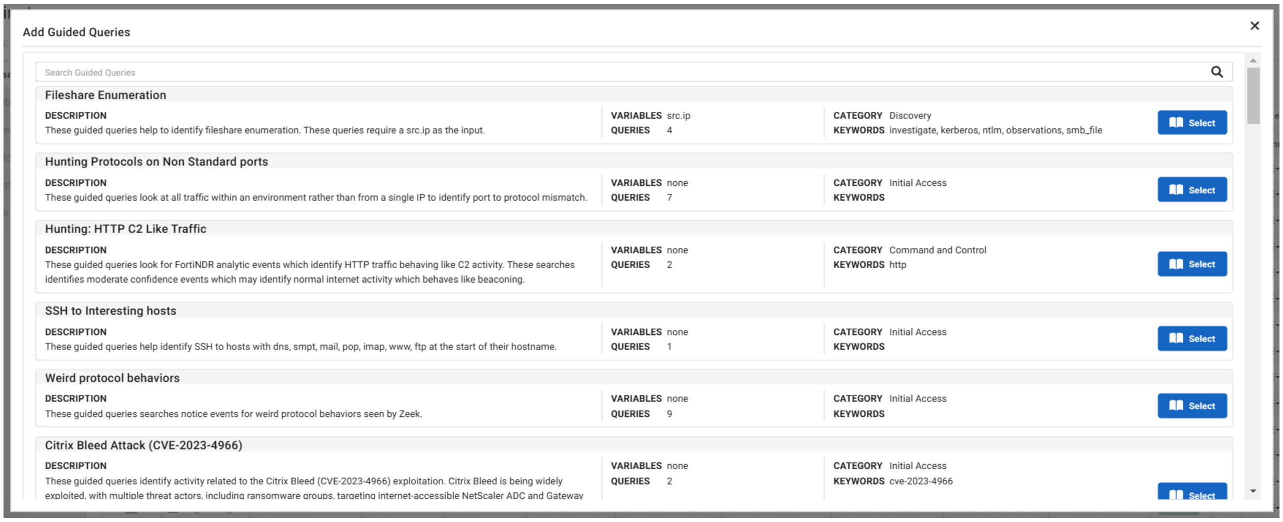
Running a guided query of event records

Query event records to retrieve specific information from event logs during an investigation.

Query event records

To run a guided query of event records:

1. Go to *Investigations* > *Investigate* and select an investigation from the list.
2. Click *View Results* to view the investigation results.
3. Right click on an entity to open the context menu and select *Guided Queries*.



Add Guided Queries

Search Guided Queries

Fileshare Enumeration

DESCRIPTION
These guided queries help to identify fileshare enumeration. These queries require a src.ip as the input.
VARIABLES src.ip
QUERIES 4
CATEGORY Discovery
KEYWORDS investigate, kerberos, ntlm, observations, smb_file

Hunting Protocols on Non Standard ports

DESCRIPTION
These guided queries look at all traffic within an environment rather than from a single IP to identify port to protocol mismatch.
VARIABLES none
QUERIES 7
CATEGORY Initial Access
KEYWORDS

Hunting: HTTP C2 Like Traffic

DESCRIPTION
These guided queries look for FortiNDR analytic events which identify HTTP traffic behaving like C2 activity. These searches identifies moderate confidence events which may identify normal internet activity which behaves like beaconing.
VARIABLES none
QUERIES 2
CATEGORY Command and Control
KEYWORDS http

SSH to Interesting hosts

DESCRIPTION
These guided queries help identify SSH to hosts with dns, smpt, mail, pop, imap, www, ftp at the start of their hostname.
VARIABLES none
QUERIES 1
CATEGORY Initial Access
KEYWORDS

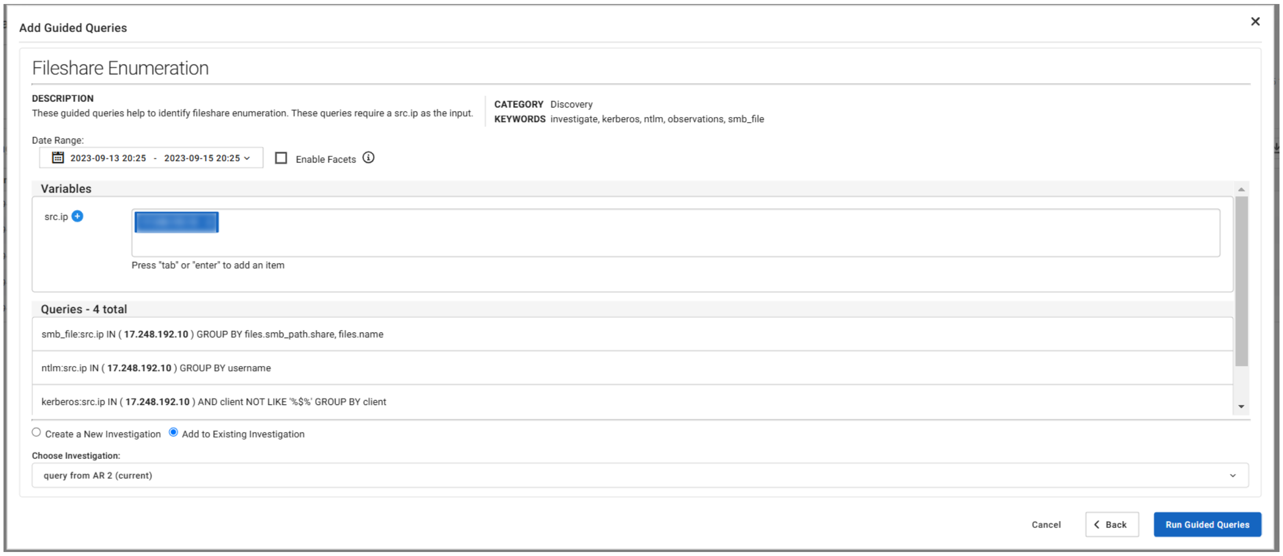
Weird protocol behaviors

DESCRIPTION
These guided queries searches notice events for weird protocol behaviors seen by Zeek.
VARIABLES none
QUERIES 9
CATEGORY Initial Access
KEYWORDS

Citrix Bleed Attack (CVE-2023-4966)

DESCRIPTION
These guided queries identify activity related to the Citrix Bleed (CVE-2023-4966) exploitation. Citrix Bleed is being widely exploited, with multiple threat actors, including ransomware groups, targeting internet-accessible NetScaler ADC and Gateway
VARIABLES none
QUERIES 2
CATEGORY Initial Access
KEYWORDS cve-2023-4966

4. Select a guided query from the list. If the event record has matching variables in the query , then the variables will be populated with values from the event record.



Add Guided Queries

Fileshare Enumeration

DESCRIPTION
These guided queries help to identify fileshare enumeration. These queries require a src.ip as the input.
CATEGORY Discovery
KEYWORDS investigate, kerberos, ntlm, observations, smb_file

Date Range: 2023-09-13 20:25 - 2023-09-15 20:25
□ Enable Facets

Variables

src.ip [redacted]

Press "tab" or "enter" to add an item

Queries - 4 total

```
smb_file:src.ip IN ( 17.248.192.10 ) GROUP BY files.smb_path.share, files.name
ntlm:src.ip IN ( 17.248.192.10 ) GROUP BY username
kerberos:src.ip IN ( 17.248.192.10 ) AND client NOT LIKE '%$%' GROUP BY client
```

○ Create a New Investigation ● Add to Existing Investigation

Choose Investigation: query from AR 2 (current)

5. Add or modify the values for the variables.
6. Create a new investigation or add the guided query to an investigation.

Create a New Investigation	Select this option to create a new investigation. Enter the *Investigation Name* and *Description*. The default name for new investigations is the first and last name of the user creating the investigation as well as a date stamp of when the investigation was created.
Add to Existing Investigation	From the *Choose Investigation* dropdown, select and investigation.

7. Click *Run Guided Queries*.

Threat intelligence

FortiNDR Cloud ingests threat intelligence from a wide variety of sources, including commercially purchased feeds, open source threat intelligence data, vertical/industry/government information sharing organizations, and closed trust-based communities. This threat intelligence is reviewed and curated by the Fortinet FortiGuard Labs team, and allows for real-time matching of network traffic against known indicators.

Events are enriched with ingested threat intelligence by matching indicators from the data to entities within an event. All matched intel records are contained within the `intel` field, which is a common field across all event types. The intel records are then searchable with IQL.

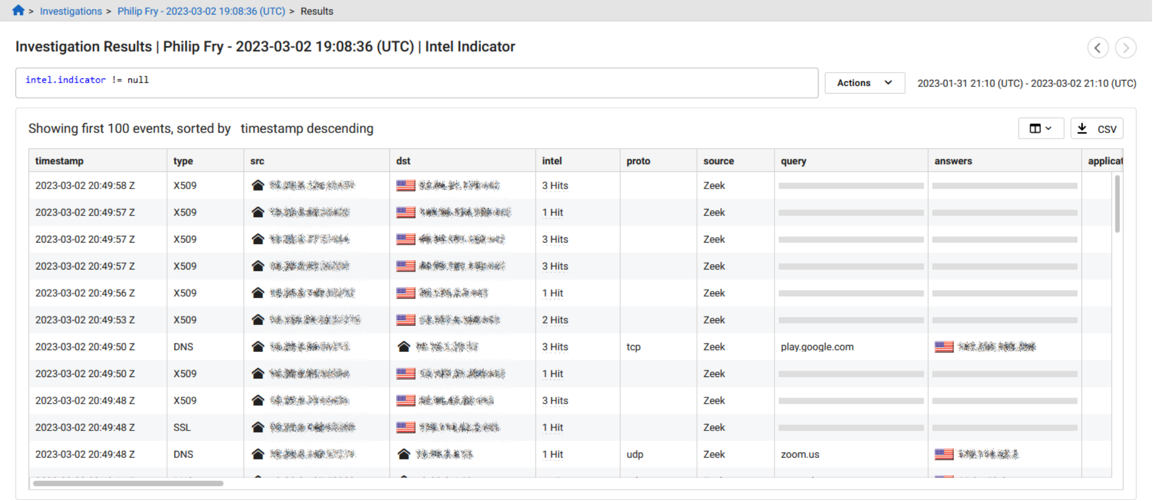
Contact your TSM if you have access to an intel source or feed that you would like integrated with FortiNDR Cloud.

Example query:

The following query is a simple way to determine whether or not network traffic has matched with threat intelligence data in your network. When the results load, you will notice the `intel` column shows whether or not an event has a match against a threat intelligence source.

```
// show events that have at least one matched intel record
```

```
intel.indicator != null
```



> Investigations > Philip Fry - 2023-03-02 19:08:36 (UTC) > Results

Investigation Results | Philip Fry - 2023-03-02 19:08:36 (UTC) | Intel Indicator

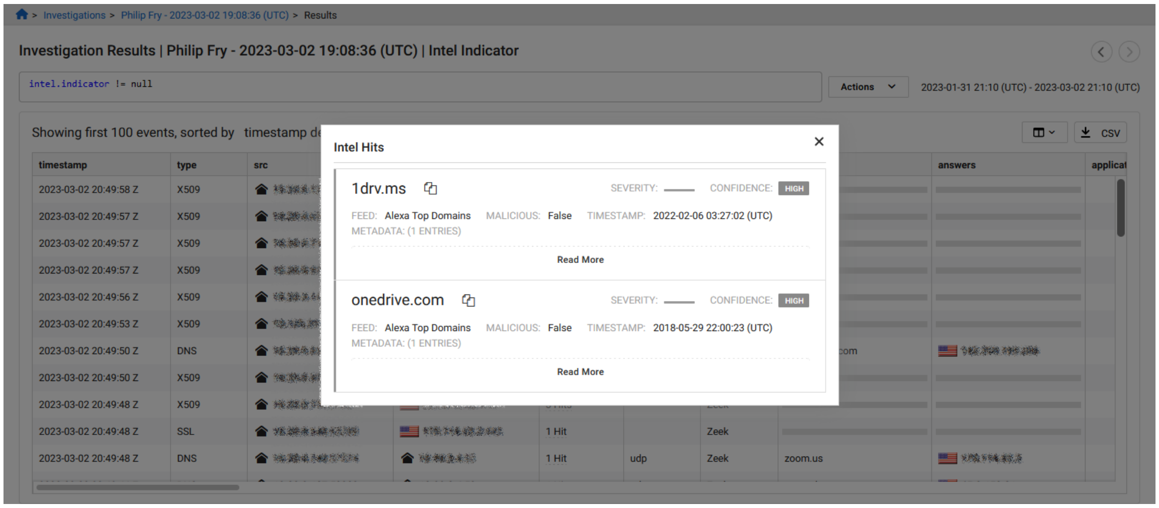
```
intel.indicator != null
```

2023-01-31 21:10 (UTC) - 2023-03-02 21:10 (UTC)

Showing first 100 events, sorted by timestamp descending

timestamp	type	src	dst	intel	proto	source	query	answers	applicat
2023-03-02 20:49:58 Z	X509	[redacted]	[redacted]	3 Hits		Zeek			
2023-03-02 20:49:57 Z	X509	[redacted]	[redacted]	1 Hit		Zeek			
2023-03-02 20:49:57 Z	X509	[redacted]	[redacted]	3 Hits		Zeek			
2023-03-02 20:49:57 Z	X509	[redacted]	[redacted]	3 Hits		Zeek			
2023-03-02 20:49:56 Z	X509	[redacted]	[redacted]	1 Hit		Zeek			
2023-03-02 20:49:53 Z	X509	[redacted]	[redacted]	2 Hits		Zeek			
2023-03-02 20:49:50 Z	DNS	[redacted]	[redacted]	3 Hits	tcp	Zeek	play.google.com	[redacted]	
2023-03-02 20:49:50 Z	X509	[redacted]	[redacted]	1 Hit		Zeek			
2023-03-02 20:49:48 Z	X509	[redacted]	[redacted]	3 Hits		Zeek			
2023-03-02 20:49:48 Z	SSL	[redacted]	[redacted]	1 Hit		Zeek			
2023-03-02 20:49:48 Z	DNS	[redacted]	[redacted]	1 Hit	udp	Zeek	zoom.us	[redacted]	

Click the number of *hits* in the *Intel* column to view the matched *intel* records.



Investigations > Philip Fry - 2023-03-02 19:08:36 (UTC) > Results

Investigation Results | Philip Fry - 2023-03-02 19:08:36 (UTC) | Intel Indicator

```
intel.indicator != null
```

2023-01-31 21:10 (UTC) - 2023-02-02 21:10 (UTC)

Showing first 100 events, sorted by timestamp d

timestamp	type	src
2023-03-02 20:49:58 Z	X509	[redacted]
2023-03-02 20:49:57 Z	X509	[redacted]
2023-03-02 20:49:57 Z	X509	[redacted]
2023-03-02 20:49:57 Z	X509	[redacted]
2023-03-02 20:49:56 Z	X509	[redacted]
2023-03-02 20:49:53 Z	X509	[redacted]
2023-03-02 20:49:50 Z	DNS	[redacted]
2023-03-02 20:49:50 Z	X509	[redacted]
2023-03-02 20:49:48 Z	X509	[redacted]
2023-03-02 20:49:48 Z	SSL	[redacted]
2023-03-02 20:49:48 Z	DNS	[redacted]

Intel Hits

1drv.ms SEVERITY: — CONFIDENCE: HIGH

FEED: Alexa Top Domains MALICIOUS: False TIMESTAMP: 2022-02-06 03:27:02 (UTC)
METADATA: (1 ENTRIES)

Read More

onedrive.com SEVERITY: — CONFIDENCE: HIGH

FEED: Alexa Top Domains MALICIOUS: False TIMESTAMP: 2018-05-29 22:00:23 (UTC)
METADATA: (1 ENTRIES)

Read More

Search for intel

The `intel` field is an array of *intel-objects*, meaning there could be multiple records for a given event. When a query is applied to an event with multiple intel records, the values for each field are flattened into individual arrays before the query logic is applied to the values.

The following table lists the fields contain in *intel-objects*:

Field	Type	Description	Example
`confidence`	String	The overall confidence rating of the intel source	`high`
`feed`	String	The name of the intel source	`Sinkholes`
`indicator`	String	The matched entity	`131.253.18.12`
`indicator_type`	String	The entity type	`ip_address`
`is_malicious`	Boolean	Indicates whether the indicator is believed to be malicious	`false`
`meta`	String	A JSON string of all metadata provided by the intel source	`{"description":"Observed C2 Activity","references":["Fortinet FortiGuard Labs"]}`
`severity`	String	The overall severity rating of the intel source	`high`
`timestamp`	Timestamp	The creation time of the intel record	`2019-01-01T00:00:00.000Z`

Example search for intel

In this example, we will create two queries to search for the following events:

- **Event 1**: `[{confidence: high, severity: low}, {confidence: low, severity: high}]`
- **Event 2**: `[{confidence: high, severity: high}, {confidence: low, severity: low}]`

Example 1:

In this example we will use a query to compare an array of records in *Event 1* and *Event 2*.

Query string:

```
intel.confidence = high & intel.severity = high
```

What the query will do:

1. The two records are flattened into arrays of values for each field, so the query logic is applied to all values all at once and not to records individually.
2. The query is compared to the array of records in *Event 1* and *Event 2*.

Response:

This query will return Event 1 and 2 because at least one inner object contains `confidence=high` and at least one inner object contains `severity=high`.

- Event 1: `confidence =[high,low]` and `severity = [high,low]`
- Event 2: `confidence =[high,high]` and `severity = [high,low]`

Example 2:

In this example, we will create a query to match individual objects of a nested field (such as intel, path, files, etc.).

Query string:

```
intel {confidence=high & severity=high}
```

Response:

This query will only return Event 2 because at least one of the objects in the event meets both criteria.

- Event 2: `confidence =[high,high]` and `severity = [low,low]`

Reports

The following reports are available: *FortiNDR Cloud Network Security Posture Report*, *FortiNDR Cloud Network Traffic Usage Report*, *FortiNDR Cloud Network Traffic Usage of a Sensor Report* and *FortiNDR Cloud Detections Report*.

Generating reports

To generate a report:

1. From the top navigation, select *Reports*. The *Reports* page opens.
2. Select the date range and click *Apply*.
3. Click *Run Report*.The browser will transition from the template list to the report page while retrieving data to complete the report. Each section will update individually as data is retrieved. Sections will appear as data is ready.
4. Click *Print*. The *Print* dialog opens.
5. Click *Save*. Select a location to save your report and click *Save* again.

FortiNDR Cloud Network Traffic Usage of a Sensor Report

This report provides daily insights into network traffic patterns for an individual sensor by identifying top source and destination IPs, high-volume IP pairs (Top Talkers), busiest destination ports, and ports with unidentified protocols.

FortiNDR Cloud Network Traffic Usage Report

This report analyzes daily network traffic to enhance monitoring and anomaly detection. It highlights top source and destination IPs, high-volume IP pairs (Top Talkers), busiest destination ports, and ports with unidentified protocols by traffic volume.

FortiNDR Cloud Detections Report

This report provides an overview of the number detections within a specific time range and can be useful for threat hunting. The report includes only resolved detections when calculating metrics. Any active detections within the selected time range are excluded from these calculations.

The report criteria includes detections observed, attack category and severity. For each detection there is an overview and the number of events that satisfy the detector. The Executive Summary displays:

Total Detections	Number of detections within the specified time range.
Devices with detections	Number of devices with detections within the specified time range.
Mean Time to Detect (MTTD)	Average time in seconds between when an incident was first seen and when it was created in the system. *Mean Time to Detect* is calculated by averaging the time difference (in seconds) between the *FirstSeen* and *Created* timestamps for all detections with a status of *Resolved*.
Mean Time to Resolve (MTTR)	Average time in seconds between when an incident was created and when it was resolved. *Mean Time to Resolve* is calculated by averaging the time (in seconds) between the *Created* timestamp and the *ResolutionTimestamp* for all detections marked as *Resolved*.
Mean Dwell Time (Dwell)	Average time in seconds between when an incident was first seen and when it was resolved. Dwell Time is calculated by averaging the time (in seconds) between the *FirstSeen* and *ResolutionTimestamp* for all detections with a status of *Resolved*.
Devices with Detections	Total of unique device IP from all detections

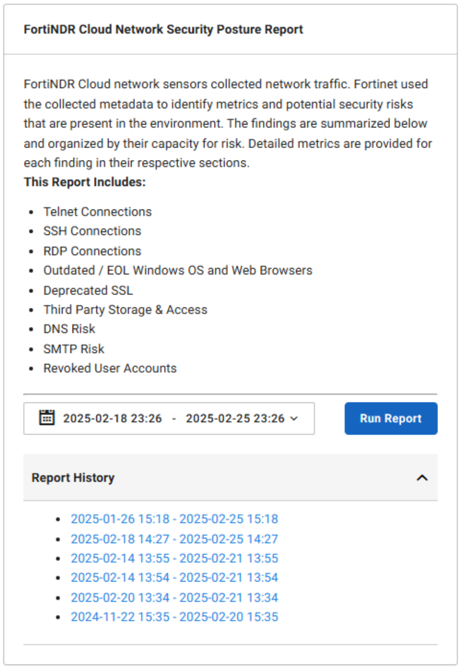
FortiNDR Cloud Network Security Posture Report

This report analyzes 10 aspects related to your overall security posture. This report allows you to view an investigation and the results for an event. The report also provides a list a of generated reports in the *Report History*. Please a allow a few minutes for the report to generate.

You can navigate away from the Posture Report page after clicking *Run Report*. However, the report will remain incomplete indefinitely if you close your browser tab or log out of the portal. When this occurs, the following error message is displayed: *The report is incomplete. Please run it again*.

Report history

The *Report History* panel in the *FortiNDR Cloud Network Security Posture Report* tile, displays a log or previous reports by time range. You can click a range in the list to regenerate the report.



FortiNDR Cloud Network Security Posture Report

FortiNDR Cloud network sensors collected network traffic. Fortinet used the collected metadata to identify metrics and potential security risks that are present in the environment. The findings are summarized below and organized by their capacity for risk. Detailed metrics are provided for each finding in their respective sections.

This Report Includes:

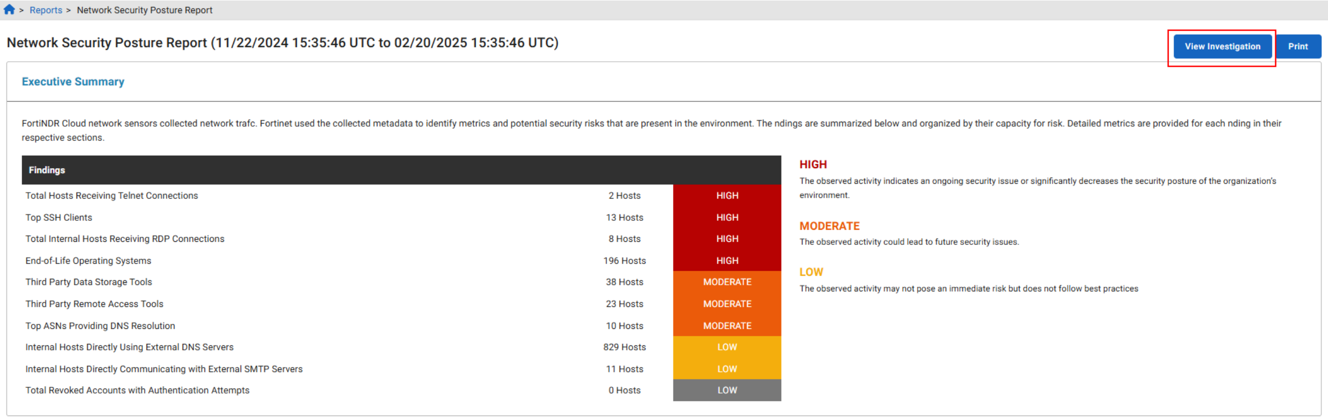
- Telnet Connections
- SSH Connections
- RDP Connections
- Outdated / EOL Windows OS and Web Browsers
- Deprecated SSL
- Third Party Storage & Access
- DNS Risk
- SMTP Risk
- Revoked User Accounts

Report History

- 2025-01-26 15:18 - 2025-02-25 15:18
- 2025-02-18 14:27 - 2025-02-25 14:27
- 2025-02-14 13:55 - 2025-02-21 13:55
- 2025-02-14 13:54 - 2025-02-21 13:54
- 2025-02-20 13:34 - 2025-02-21 13:34
- 2024-11-22 15:35 - 2025-02-20 15:35

View investigations

After the report is generated, click the *View Investigations* button in the report to view the investigation in *Read-Only* mode.



Network Security Posture Report (11/22/2024 15:35:46 UTC to 02/20/2025 15:35:46 UTC)

Executive Summary

FortiNDR Cloud network sensors collected network traffic. Fortinet used the collected metadata to identify metrics and potential security risks that are present in the environment. The findings are summarized below and organized by their capacity for risk. Detailed metrics are provided for each finding in their respective sections.

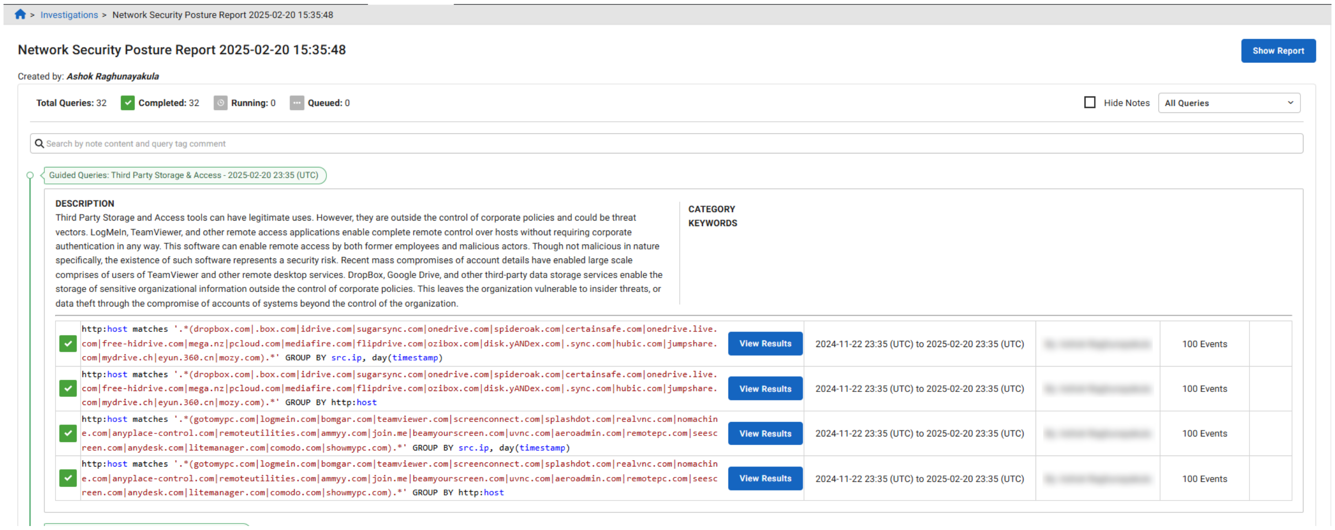
Findings		
Total Hosts Receiving Telnet Connections	2 Hosts	HIGH
Top SSH Clients	13 Hosts	HIGH
Total Internal Hosts Receiving RDP Connections	8 Hosts	HIGH
End-of-Life Operating Systems	196 Hosts	HIGH
Third Party Data Storage Tools	38 Hosts	MODERATE
Third Party Remote Access Tools	23 Hosts	MODERATE
Top ASNs Providing DNS Resolution	10 Hosts	MODERATE
Internal Hosts Directly Using External DNS Servers	829 Hosts	LOW
Internal Hosts Directly Communicating with External SMTP Servers	11 Hosts	LOW
Total Revoked Accounts with Authentication Attempts	0 Hosts	LOW

HIGH
The observed activity indicates an ongoing security issue or significantly decreases the security posture of the organization's environment.

MODERATE
The observed activity could lead to future security issues.

LOW
The observed activity may not pose an immediate risk but does not follow best practices

In the report, click *View Results* to view individual results for an event, or click *Show Report* to return to the report.



> Investigations > Network Security Posture Report 2025-02-20 15:35:48
Show Report
Hide Notes
All Queries
Search by note content and query tag comment
View Results

Network Security Posture Report 2025-02-20 15:35:48

Created by: ***Ashok Raghunayakula***

Total Queries: 32 ✓ **Completed:** 32 **Running:** 0 **Queued:** 0

□ Hide Notes

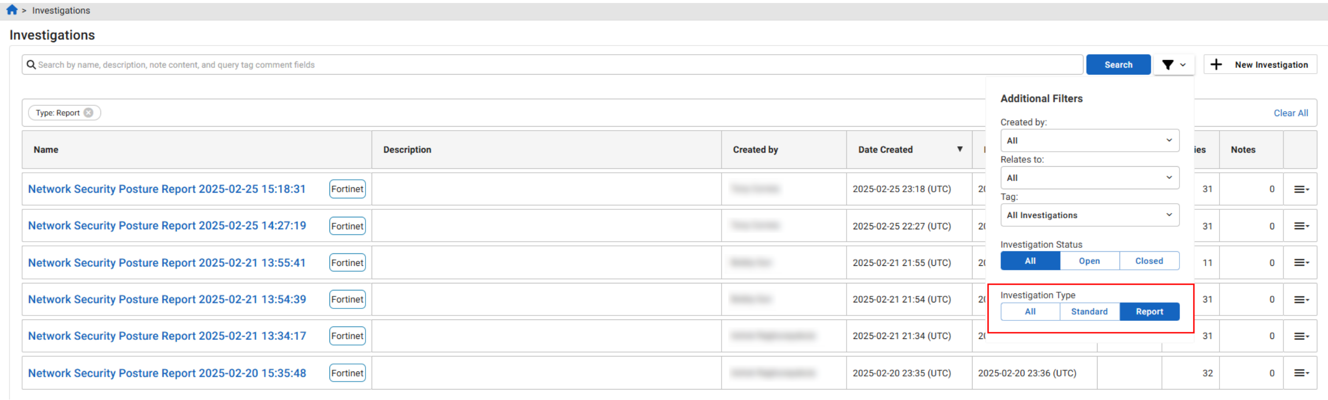
Guided Queries: Third Party Storage & Access - 2025-02-20 23:35 (UTC)

DESCRIPTION
Third Party Storage and Access tools can have legitimate uses. However, they are outside the control of corporate policies and could be threat vectors. LogMeIn, TeamViewer, and other remote access applications enable complete remote control over hosts without requiring corporate authentication in any way. This software can enable remote access by both former employees and malicious actors. Though not malicious in nature specifically, the existence of such software represents a security risk. Recent mass compromises of account details have enabled large scale comprises of users of TeamViewer and other remote desktop services. DropBox, Google Drive, and other third-party data storage services enable the storage of sensitive organizational information outside the control of corporate policies. This leaves the organization vulnerable to insider threats, or data theft through the compromise of accounts of systems beyond the control of the organization.

CATEGORY
KEYWORDS

✓	`http:host matches '.*(dropbox.com|.box.com|idrive.com|sugarsync.com|onedrive.com|spideroak.com|certainsafe.com|onedrive.live.com|free-hidrive.com|mega.nz|pcloud.com|mediafire.com|flipdrive.com|ozibox.com|disk.yANDex.com|.sync.com|hubic.com|jumpshare.com|mydrive.ch|eyun.360.cn|mozy.com).*' GROUP BY src.ip, day(timestamp)`	View Results	2024-11-22 23:35 (UTC) to 2025-02-20 23:35 (UTC)	[redacted]	100 Events
✓	`http:host matches '.*(dropbox.com|.box.com|idrive.com|sugarsync.com|onedrive.com|spideroak.com|certainsafe.com|onedrive.live.com|free-hidrive.com|mega.nz|pcloud.com|mediafire.com|flipdrive.com|ozibox.com|disk.yANDex.com|.sync.com|hubic.com|jumpshare.com|mydrive.ch|eyun.360.cn|mozy.com).*' GROUP BY http:host`	View Results	2024-11-22 23:35 (UTC) to 2025-02-20 23:35 (UTC)	[redacted]	100 Events
✓	`http:host matches '.*(gotomypc.com|logmein.com|bomgar.com|teamviewer.com|screenconnect.com|splashdot.com|realvnc.com|nomachine.com|anyplace-control.com|remoteutilities.com|ammyy.com|join.me|beamyourscreen.com|uvnc.com|aeroadmin.com|remotepc.com|seescreen.com|anydesk.com|litemanager.com|comodo.com|showmypc.com).*' GROUP BY src.ip, day(timestamp)`	View Results	2024-11-22 23:35 (UTC) to 2025-02-20 23:35 (UTC)	[redacted]	100 Events
✓	`http:host matches '.*(gotomypc.com|logmein.com|bomgar.com|teamviewer.com|screenconnect.com|splashdot.com|realvnc.com|nomachine.com|anyplace-control.com|remoteutilities.com|ammyy.com|join.me|beamyourscreen.com|uvnc.com|aeroadmin.com|remotepc.com|seescreen.com|anydesk.com|litemanager.com|comodo.com|showmypc.com).*' GROUP BY http:host`	View Results	2024-11-22 23:35 (UTC) to 2025-02-20 23:35 (UTC)	[redacted]	100 Events

In the *Investigations* page, you can use the *Report* filter to search for *FortiNDR Cloud Network Security Posture Report* investigations.



> Investigations
Search by name, description, note content, and query tag comment fields
Search
New Investigation
Type: Report
Clear All

Investigations

Additional Filters

Created by: All

Relates to: All

Tag: All Investigations

Investigation Status: [✓ All] Open Closed

Investigation Type: All Standard [✓ Report]

Name		Description	Created by	Date Created ▼			ies	Notes	
Network Security Posture Report 2025-02-25 15:18:31	Fortinet		[redacted]	2025-02-25 23:18 (UTC)	20		31	0	☰
Network Security Posture Report 2025-02-25 14:27:19	Fortinet		[redacted]	2025-02-25 22:27 (UTC)	20		31	0	☰
Network Security Posture Report 2025-02-21 13:55:41	Fortinet		[redacted]	2025-02-21 21:55 (UTC)	20		11	0	☰
Network Security Posture Report 2025-02-21 13:54:39	Fortinet		[redacted]	2025-02-21 21:54 (UTC)	20		31	0	☰
Network Security Posture Report 2025-02-21 13:34:17	Fortinet		[redacted]	2025-02-21 21:34 (UTC)	20		31	0	☰
Network Security Posture Report 2025-02-20 15:35:48	Fortinet		[redacted]	2025-02-20 23:35 (UTC)	2025-02-20 23:36 (UTC)		32	0	☰

Pending queries in reports

FortiNDR Cloud can support up to 35 pending queries simultaneously. To prevent system overload, a tooltip will appear across all of your accounts advising users to wait before running another report.

Settings

You can apply global settings FortiNDR Cloud by clicking on the gear in the top-right corner of the portal.

Profile settings

Use *Profile Settings* to configure your profiles such as your account and configure authentication.

My profile

User Information	
User Email	The email the user logs into the application with.
User Name	The user's first and last name.
User UUID	The user's unique ID.
User MFA	Indicates if Multifactor Authentication is disabled or enabled.
Tooltip	Disables the investigation tooltip in the *Investigations* page, the *Investigations* widget in the in the default dashboard, and global search results. For more information, see *Investigate >* .
Account Information	
Account Name	The name of the account the user belongs to.
Account UUID	The account's unique ID. The Account UUID is useful when interacting with the APIs. Most APIs allow you to specify an account UUID to pull data for; this is equivalent to setting the Account Selector to a specific account. If you do not specify an account UUID, you receive data from all accounts you have access to.
Subscription Serial Number	The serial number for the account.

Authentication

Password	Click Change my password to update your FortiNDR Cloud password.

	Passwords must be a minimum of eight characters and are valid for 180 days. FortiNDR Cloud will notify you when your password is about to expire. If you attempt to log in after your password has expired, you will be prompted to create a new password.
Multi-Factor Authentication	Click Enable MFA to enter a token each time you log into FortiNDR Cloud. Multi-Factor Authentication requires a Time-based one-time password (TOTP) such as FortiToken. You will be required to configure an MFA token as soon as you long in.

API Tokens

API tokens are used to access FortiNDR Cloud cloud APIs. The token is only shown when it is created. With the exception of the token description, the actual token will not be visible in the portal. Older tokens may be revoked.

For integrations or scenarios where multiple users will rely on the token, a token tied to an API-only user is highly recommended. See, Creating users and assigning roles on page 136.

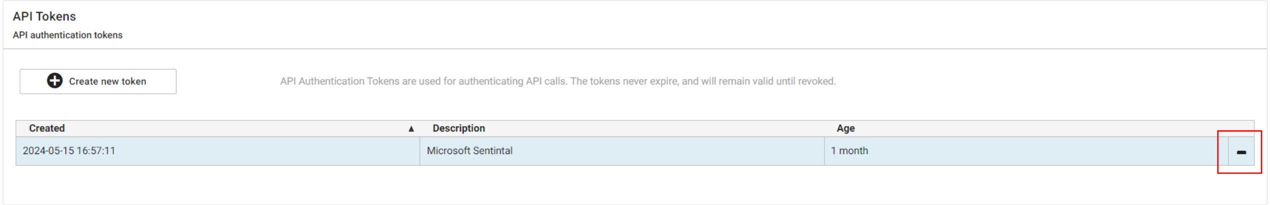
API Tokens	Click *Create New Token* to create permanent authentication tokens for authenticating API calls. These tokens never expire, and remain valid until revoked.

To create an API token:

1. Go to *Profile Settings* and scroll down to *API Tokens*.
2. Click *Create new token*. The *Create New API Auth Token* dialog opens.
3. In the Description field, enter a description of the token. The description will be visible in the *API Tokens* columns of the *Users* page and the *User Details*.
4. Click *Create*.

To revoke an API token:

1. Go to *Profile Settings* and scroll down to *API Tokens*.
2. In the last column of the table click, *Revoke token*. The *Revoke API Token?* dialog opens.



API Tokens

API authentication tokens

API Authentication Tokens are used for authenticating API calls. The tokens never expire, and will remain valid until revoked.

Created ▲	Description	Age	
2024-05-15 16:57:11	Microsoft Sentintal	1 month	−

3. Click *Confirm*.

Email notifications

Receive an email notification when a detector triggers a detection. Notifications are configured and applied on a per-user basis using the email address tied to a user's account. If you are logging in for the first time or have never updated your notifications, you will see the *Default Notification* created for every user.

The *Email Notifications* page displays the notifications for the account. You can filter the page by *Email Type* (*Assigned Detections* or *New Detections*) and by *Status* (*All*, *Enabled*, or *Disabled*).

To create a notification:

1. In the toolbar, click the gear icon and select *Email Notifications*. The *Notifications* page opens.
2. Click the *Create Notification* button at the top right-side of the page. The *Create a New Notification* dialog opens.
3. Enter the *Notification Name*.
4. From the *Account* dropdown, select an account.
5. Select the *Detection Type*.
   - *Assigned Detections*: Select to send an email notification to the user the detection is assigned to.
   - *New Detections*: Select to create and configure a new notification.
6. Configure the new notification:

<table>
<tr>
<td><b>Severities</b></td>
<td>Select one of the following:
<table>
<tr><th>Severity</th><th>Description</th><th>Examples</th></tr>
<tr><td><b>High</b></td><td>Significant to fair impact with the potential to spread or escalate</td><td>Malicious code execution, C2 communications, lateral movement, data exfiltration</td></tr>
<tr><td><b>Moderate</b></td><td>Fair impact with minimal potential to spread or escalate</td><td>Activity that could indicate malicious intent, untargeted attacks with unknown success, data leakage, subversion of security or monitoring tools</td></tr>
<tr><td><b>Low</b></td><td>Little to no impact expected</td><td>Potentially unauthorized software, devices, or resource use, untargeted adware or spyware, compromise of a personal device or device on an</td></tr>
</table>
</td>
</tr>
</table>

<table>
<tr><td></td><td><table><tr><th>Severity</th><th>Description</th><th>Examples</th></tr><tr><td></td><td></td><td>untrusted network, insecure configurations</td></tr></table></td></tr>
<tr><td><b>Confidences</b></td><td>Select one of the following:<table><tr><th>Confidence</th><th>Minimum True-Positive Rate</th></tr><tr><td><b>High</b></td><td>90%</td></tr><tr><td><b>Moderate</b></td><td>75%</td></tr><tr><td><b>Low</b></td><td>50%</td></tr></table></td></tr>
<tr><td><b>Categories</b></td><td>Select a category from the list. For information, see <i>Detections > Detector Categories</i>.</td></tr>
<tr><td><b>Email Type</b></td><td><ul><li><i>Individual</i>: Sends an email for each individual detector that becomes active.</li><li><i>Digest</i>: Sends you a single email each day at the specified time (default 08:00 Eastern) summarizing detectors that became active and/or were resolved during the previous day.
Select <i>Include Resolved Details</i> to include detection resolution information in the email The <i>Email Notifications</i> page will display <i>Digest with Resolve Details</i> next to the email when enabled.</li></ul></td></tr>
</table>

7. Click *Create*.

To edit a notification:

1. Click the *Actions* menu at right side of the notification.

   ≡▾

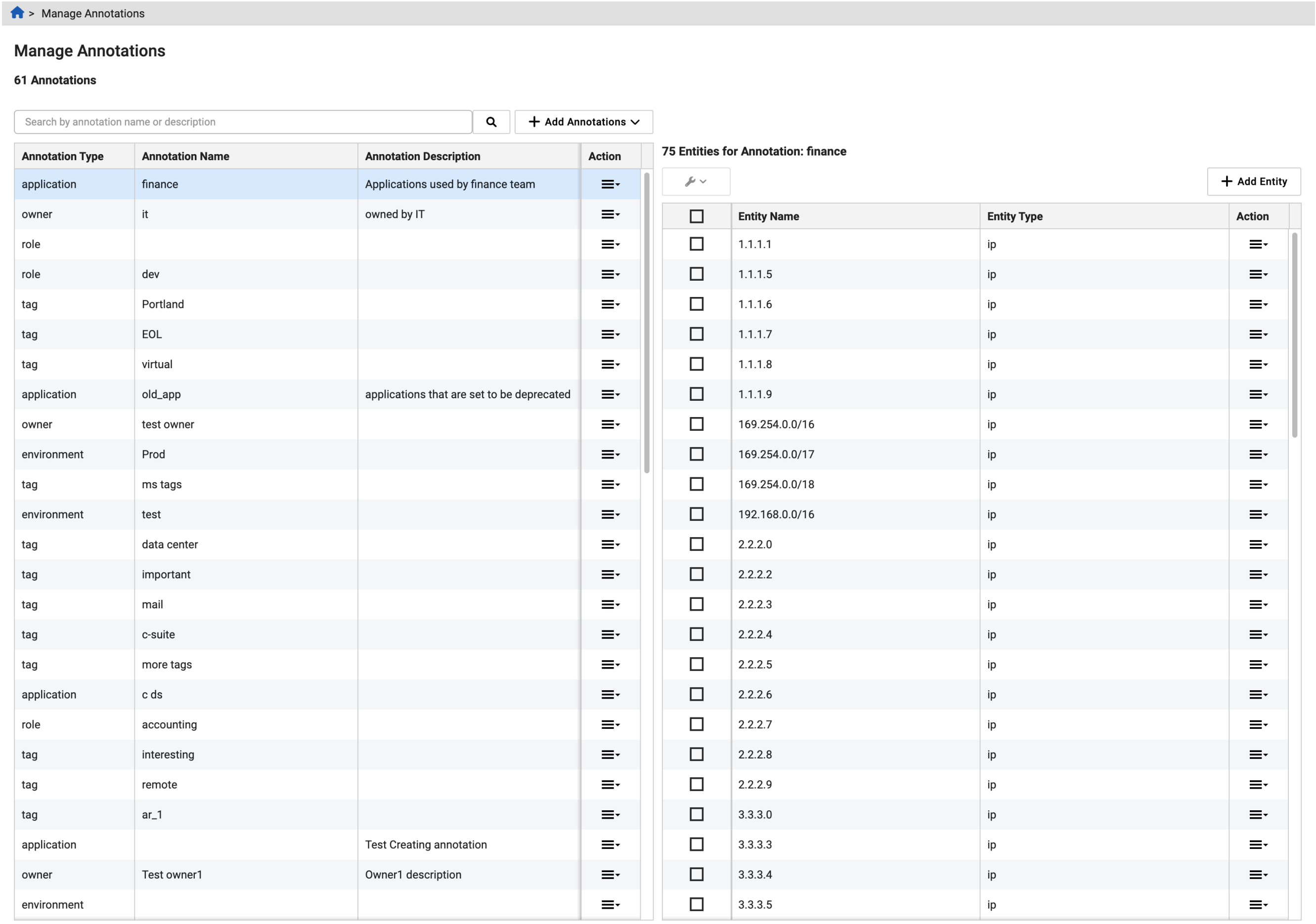
2. Click *Edit Notification* . The *Edit Notification* dialog opens.
3. Edit the notification details and click *Save*.

To delete or disable a notification:

1. Click the *Actions* menu at right side of the notification.
2. Click *Delete Notification* or *Disable Notification*. A confirmation dialog opens.
3. Click *Confirm*.

Manage annotations

Manage Annotations settings allow you to view and edit all your annotations in one place. The search function allows you to search for any text in the *Annotation Name* and *Annotation Description* columns.



Manage Annotations

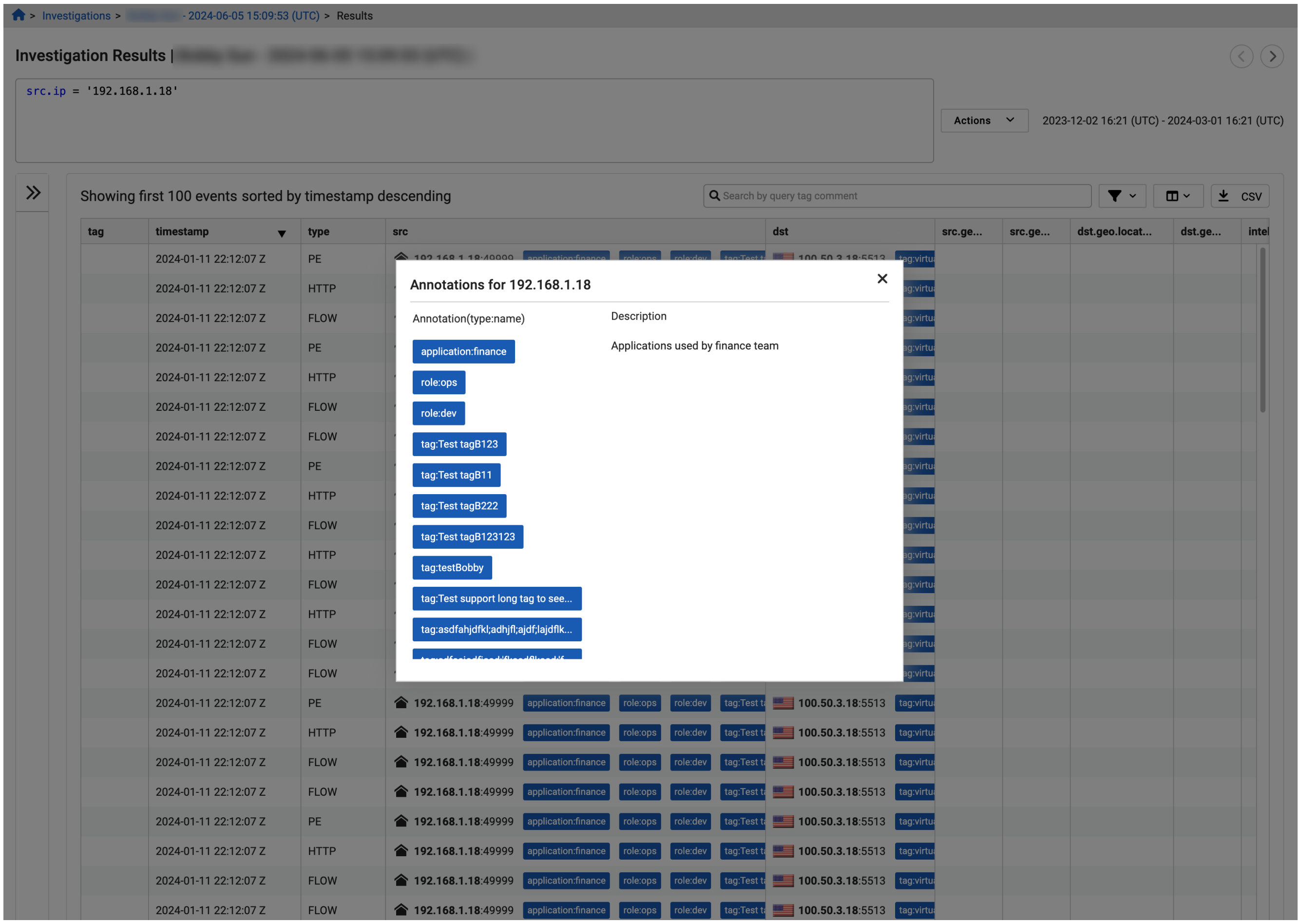
61 Annotations

Annotation Type	Annotation Name	Annotation Description	Action
application	finance	Applications used by finance team	≡▾
owner	it	owned by IT	≡▾
role			≡▾
role	dev		≡▾
tag	Portland		≡▾
tag	EOL		≡▾
tag	virtual		≡▾
application	old_app	applications that are set to be deprecated	≡▾
owner	test owner		≡▾
environment	Prod		≡▾
tag	ms tags		≡▾
environment	test		≡▾
tag	data center		≡▾
tag	important		≡▾
tag	mail		≡▾
tag	c-suite		≡▾
tag	more tags		≡▾
application	c ds		≡▾
role	accounting		≡▾
tag	interesting		≡▾
tag	remote		≡▾
tag	ar_1		≡▾
application		Test Creating annotation	≡▾
owner	Test owner1	Owner1 description	≡▾
environment			≡▾

75 Entities for Annotation: finance

□	Entity Name	Entity Type	Action
□	1.1.1.1	ip	≡▾
□	1.1.1.5	ip	≡▾
□	1.1.1.6	ip	≡▾
□	1.1.1.7	ip	≡▾
□	1.1.1.8	ip	≡▾
□	1.1.1.9	ip	≡▾
□	169.254.0.0/16	ip	≡▾
□	169.254.0.0/17	ip	≡▾
□	169.254.0.0/18	ip	≡▾
□	192.168.0.0/16	ip	≡▾
□	2.2.2.0	ip	≡▾
□	2.2.2.2	ip	≡▾
□	2.2.2.3	ip	≡▾
□	2.2.2.4	ip	≡▾
□	2.2.2.5	ip	≡▾
□	2.2.2.6	ip	≡▾
□	2.2.2.7	ip	≡▾
□	2.2.2.8	ip	≡▾
□	2.2.2.9	ip	≡▾
□	3.3.3.0	ip	≡▾
□	3.3.3.3	ip	≡▾
□	3.3.3.4	ip	≡▾
□	3.3.3.5	ip	≡▾

When you hover over an annotation in the *Events* table, a tooltip shows the annotation name and description. When you click the annotation, all the annotation details are displayed in a pop-up window.



Investigations > [redacted] - 2024-06-05 15:09:53 (UTC) > Results

Investigation Results | [redacted]

```
src.ip = '192.168.1.18'
```

Actions ⌄ 2023-12-02 16:21 (UTC) - 2024-03-01 16:21 (UTC)

Showing first 100 events sorted by timestamp descending

Search by query tag comment

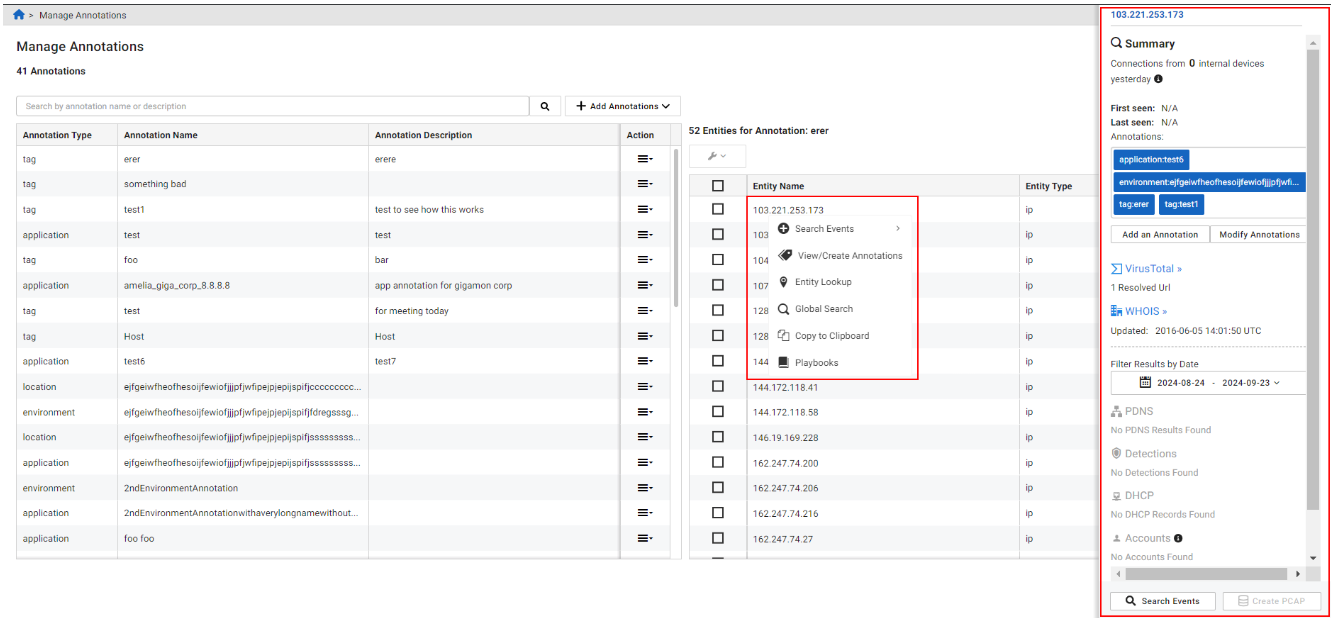
CSV

tag	timestamp	type	src	dst	src.ge...	src.ge...	dst.geo.locat...	dst.ge...	intel
	2024-01-11 22:12:07 Z	PE	192.168.1.18:49999 application:finance role:ops role:dev tag:Test t	100.50.3.18:5513 tag:virtu					
	2024-01-11 22:12:07 Z	HTTP		ag:virtu					
	2024-01-11 22:12:07 Z	FLOW		ag:virtu					
	2024-01-11 22:12:07 Z	PE		ag:virtu					
	2024-01-11 22:12:07 Z	HTTP		ag:virtu					
	2024-01-11 22:12:07 Z	FLOW		ag:virtu					
	2024-01-11 22:12:07 Z	FLOW		ag:virtu					
	2024-01-11 22:12:07 Z	PE		ag:virtu					
	2024-01-11 22:12:07 Z	HTTP		ag:virtu					
	2024-01-11 22:12:07 Z	FLOW		ag:virtu					
	2024-01-11 22:12:07 Z	HTTP		ag:virtu					
	2024-01-11 22:12:07 Z	FLOW		ag:virtu					
	2024-01-11 22:12:07 Z	HTTP		ag:virtu					
	2024-01-11 22:12:07 Z	FLOW		ag:virtu					
	2024-01-11 22:12:07 Z	FLOW		ag:virtu					
	2024-01-11 22:12:07 Z	PE	192.168.1.18:49999 application:finance role:ops role:dev tag:Test t	100.50.3.18:5513 tag:virtu					
	2024-01-11 22:12:07 Z	HTTP	192.168.1.18:49999 application:finance role:ops role:dev tag:Test t	100.50.3.18:5513 tag:virtu					
	2024-01-11 22:12:07 Z	FLOW	192.168.1.18:49999 application:finance role:ops role:dev tag:Test t	100.50.3.18:5513 tag:virtu					
	2024-01-11 22:12:07 Z	FLOW	192.168.1.18:49999 application:finance role:ops role:dev tag:Test t	100.50.3.18:5513 tag:virtu					
	2024-01-11 22:12:07 Z	PE	192.168.1.18:49999 application:finance role:ops role:dev tag:Test t	100.50.3.18:5513 tag:virtu					
	2024-01-11 22:12:07 Z	HTTP	192.168.1.18:49999 application:finance role:ops role:dev tag:Test t	100.50.3.18:5513 tag:virtu					
	2024-01-11 22:12:07 Z	FLOW	192.168.1.18:49999 application:finance role:ops role:dev tag:Test t	100.50.3.18:5513 tag:virtu					
	2024-01-11 22:12:07 Z	FLOW	192.168.1.18:49999 application:finance role:ops role:dev tag:Test t	100.50.3.18:5513 tag:virtu					

Annotations for 192.168.1.18 ✕

Annotation(type:name)	Description
application:finance	Applications used by finance team
role:ops	
role:dev	
tag:Test tagB123	
tag:Test tagB11	
tag:Test tagB222	
tag:Test tagB123123	
tag:testBobby	
tag:Test support long tag to see...	
tag:asdfahjdfkl;adhjfl;ajdf;lajdflk...	

You can open the *Entity Panel* by clicking the *Entity Name* when the entity is a valid IP, CIDR, domain, or URL. Right-click an entity with a valid IP to *Search Events*, *View/Create Annotations*, perform an *Entity Lookup* and *Global Search*, or open a *Guided Querey*.



Manage Annotations

Manage Annotations

41 Annotations

Search by annotation name or description

+ Add Annotations ⌄

Annotation Type	Annotation Name	Annotation Description	Action
tag	erer	erere	≡▾
tag	something bad		≡▾
tag	test1	test to see how this works	≡▾
application	test	test	≡▾
tag	foo	bar	≡▾
application	amelia_giga_corp_8.8.8.8	app annotation for gigamon corp	≡▾
tag	test	for meeting today	≡▾
tag	Host	Host	≡▾
application	test6	test7	≡▾
location	ejfgeiwfheofhesoijfewiofjjjpfjwfipejpjepijspifjcccccccccc...		≡▾
environment	ejfgeiwfheofhesoijfewiofjjjpfjwfipejpjepijspifjfdregsssg...		≡▾
location	ejfgeiwfheofhesoijfewiofjjjpfjwfipejpjepijspifjsssssssss...		≡▾
application	ejfgeiwfheofhesoijfewiofjjjpfjwfipejpjepijspifjsssssssss...		≡▾
environment	2ndEnvironmentAnnotation		≡▾
application	2ndEnvironmentAnnotationwithaverylongnamewithout...		≡▾
application	foo foo		≡▾

52 Entities for Annotation: erer

□	Entity Name	Entity Type
□	103.221.253.173	ip
□	103	ip
□	104	ip
□	107	ip
□	128	ip
□	128	ip
□	144	ip
□	144.172.118.41	ip
□	144.172.118.58	ip
□	146.19.169.228	ip
□	162.247.74.200	ip
□	162.247.74.206	ip
□	162.247.74.216	ip
□	162.247.74.27	ip

103.221.253.173

Summary

Connections from **0** internal devices yesterday

First seen: N/A
Last seen: N/A
Annotations:

application:test6
environment:ejfgeiwfheofhesoijfewiofjjjpfjwfi...
tag:erer tag:test1

VirusTotal »

1 Resolved Url

WHOIS »

Updated: 2016-06-05 14:01:50 UTC

Filter Results by Date

2024-08-24 - 2024-09-23

PDNS

No PDNS Results Found

Detections

No Detections Found

DHCP

No DHCP Records Found

Accounts

No Accounts Found

Adding and removing annotation

To create an annotation:

1. Click *Add Annotations* > *Create Annotation*.
2. Configure the annotation settings:

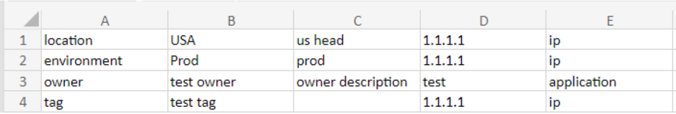
Select an annotation type	Select *Application*, *Environment*, *Location*, *Owner*, *Role*, *Tag* or *Identified Assets*. Note that *Identified Assets* only applies to FortiGuard ATR. A color-coded crown icon will appear only on assets annotated by FortiGuard ATR in the events and detections tables. See, Detections table on page 52.
Enter an annotation name	Enter a name for the annotation.
Enter a description	Enter the annotation.

3. Click *Save*.

To add annotations with a CSV file:

1. Create the CSV file. The file must contain the following : *annotation type*, *annotation name*, *description*, *entity*, *entity_type*.

   The *annotation type* must begin with a lower case letter, and the *annotation name* must be unique within the same type.



	A	B	C	D	E
1	location	USA	us head	1.1.1.1	ip
2	environment	Prod	prod	1.1.1.1	ip
3	owner	test owner	owner description	test	application
4	tag	test tag		1.1.1.1	ip

2. Click *Add Annotations* > *Upload CSV*.
3. Upload the CSV file.
4. Click *Save*.

To edit an annotation:

1. Click the gear icon in the top-right corner of the page.
2. Click *Manage Annotations*.
3. Click the *Actions* menu at the right side of the annotation and select *Edit Annotation*.

   ≡▾

4. Update the annotation and click *Save*.

To delete an annotation:

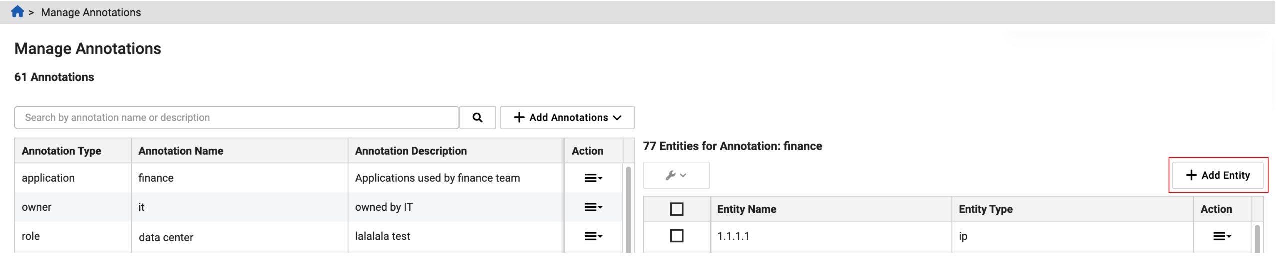
1. Click the gear icon in the top-right corner of the application.
2. Click *Manage Annotations*.

3. Click the *Actions* menu at the right side of the annotation and select *Remove Annotation*.
   ≡▾
4. Click *Confirm*.

Adding and removing entities

To add entities:

1. Click the gear icon in the top-right corner of the page.
2. Click *Manage Annotations*.
3. Click *+Add Entity*. The *Add Entities* dialog opens.



Manage Annotations

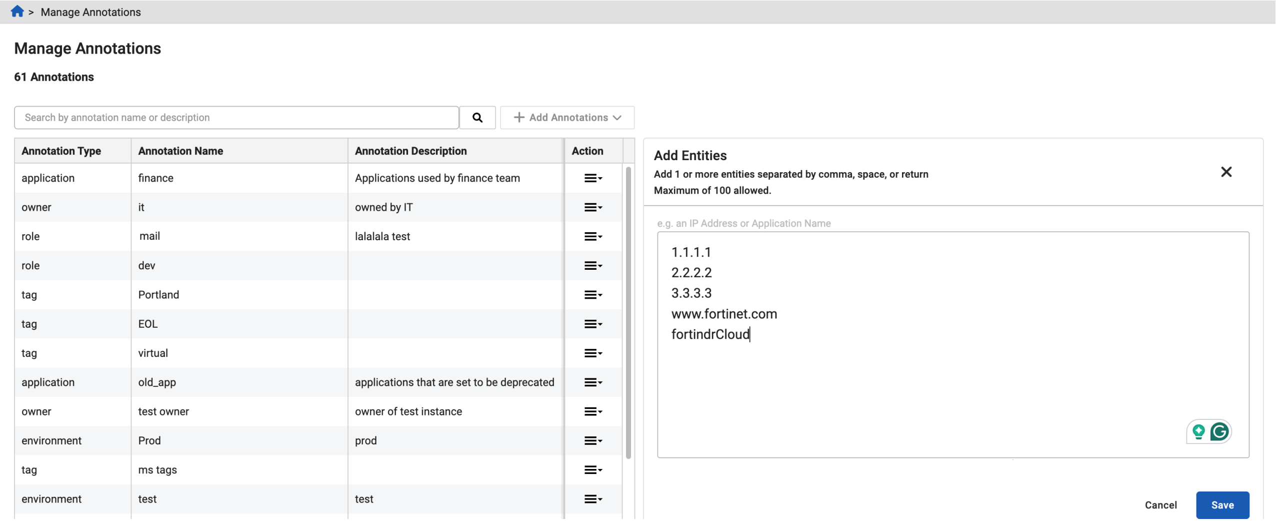
61 Annotations

Annotation Type	Annotation Name	Annotation Description	Action
application	finance	Applications used by finance team	≡▾
owner	it	owned by IT	≡▾
role	data center	lalalala test	≡▾

77 Entities for Annotation: finance

□	Entity Name	Entity Type	Action
□	1.1.1.1	ip	≡▾

4. Enter one or more entities (IP Address, CIDR, domain or username) separated by a comma, space, or return.



Manage Annotations

61 Annotations

Annotation Type	Annotation Name	Annotation Description	Action
application	finance	Applications used by finance team	≡▾
owner	it	owned by IT	≡▾
role	mail	lalalala test	≡▾
role	dev		≡▾
tag	Portland		≡▾
tag	EOL		≡▾
tag	virtual		≡▾
application	old_app	applications that are set to be deprecated	≡▾
owner	test owner	owner of test instance	≡▾
environment	Prod	prod	≡▾
tag	ms tags		≡▾
environment	test	test	≡▾

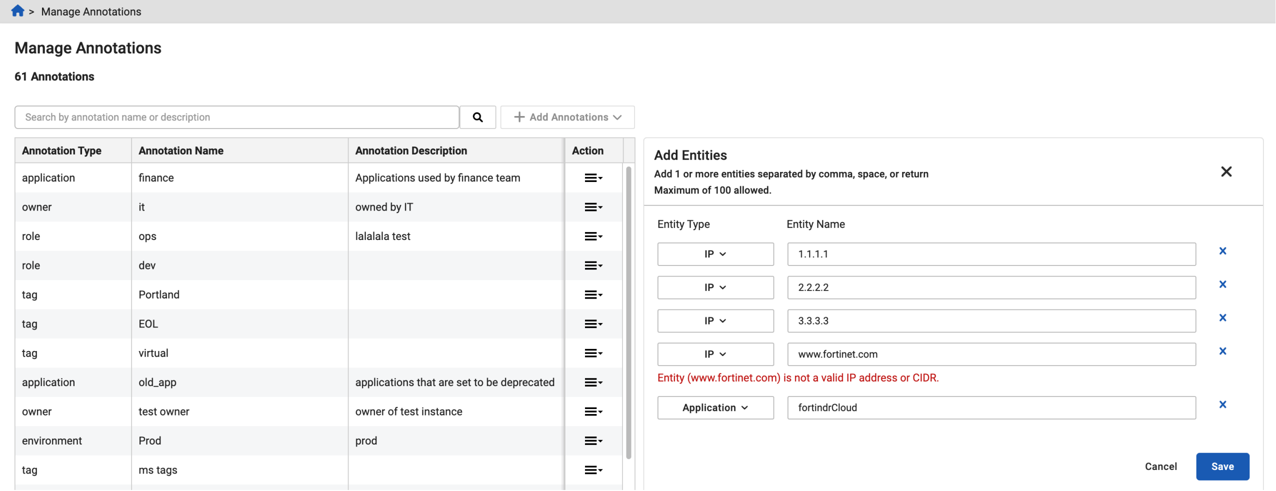
Add Entities

Add 1 or more entities separated by comma, space, or return
Maximum of 100 allowed.

e.g. an IP Address or Application Name

```
1.1.1.1
2.2.2.2
3.3.3.3
www.fortinet.com
fortindrCloud
```

5. Click *Save*. FortiNDR Cloud validates the fields and identifies any errors.



> Manage Annotations

Manage Annotations

61 Annotations

Search by annotation name or description

Annotation Type	Annotation Name	Annotation Description	Action
application	finance	Applications used by finance team	☰
owner	it	owned by IT	☰
role	ops	lalalala test	☰
role	dev		☰
tag	Portland		☰
tag	EOL		☰
tag	virtual		☰
application	old_app	applications that are set to be deprecated	☰
owner	test owner	owner of test instance	☰
environment	Prod	prod	☰
tag	ms tags		☰

Add Entities

Add 1 or more entities separated by comma, space, or return

Maximum of 100 allowed.

Entity Type	Entity Name
IP	1.1.1.1
IP	2.2.2.2
IP	3.3.3.3
IP	www.fortinet.com
Application	fortindrCloud

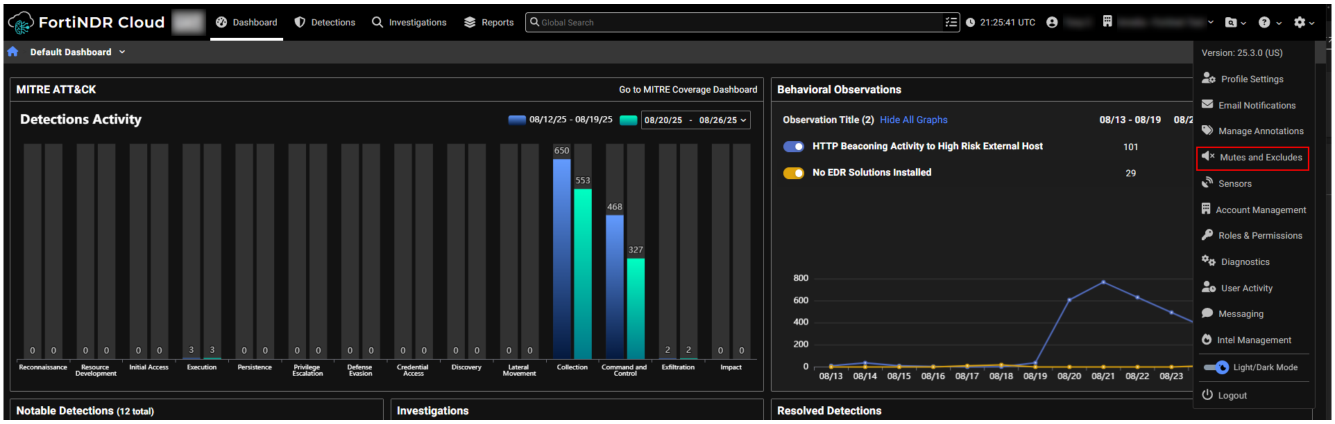
Entity (www.fortinet.com) is not a valid IP address or CIDR.

To bulk remove entities:

1. Click the gear icon in the top-right corner of the page.
2. Click *Manage Annotations*.
3. Click *Remove bulk entities*.
4. Click *Confirm*.

Mutes and excludes

The *Mutes and Excludes* page summarizes all muted and excluded devices, including device-level mutes for detectors. It contains three tabs: *Mutes*, *Excludes* and *Subnets*. To open the page, click the gear icon and select *Mutes and Excludes*.

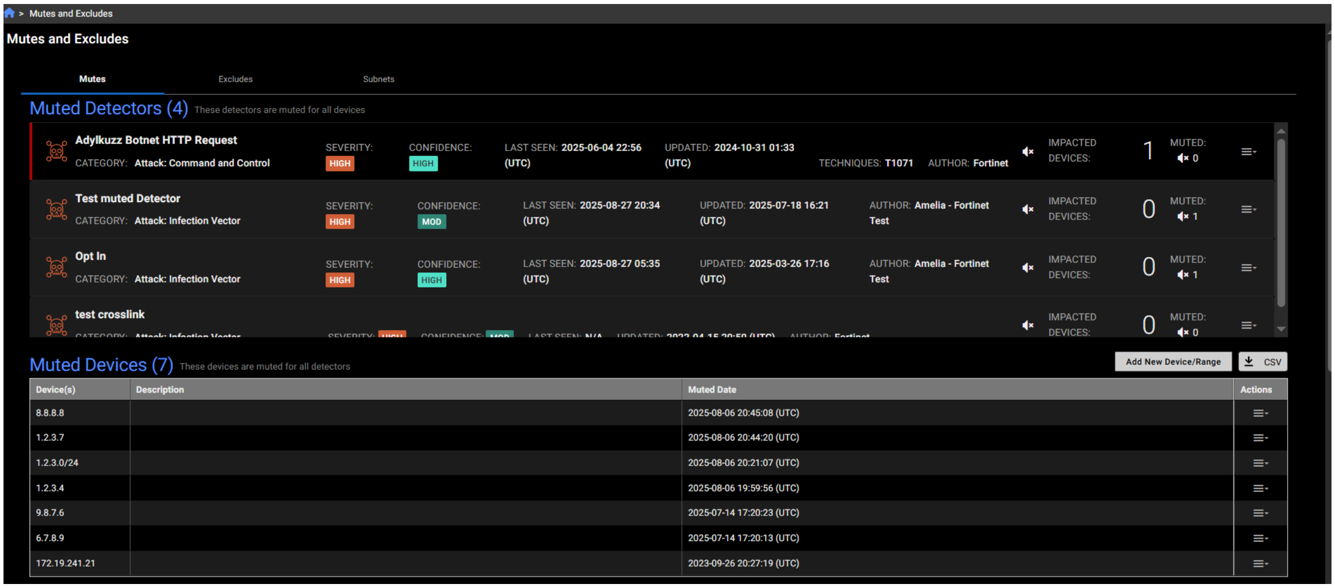


Mutes tab

The Mutes tab displays four categories:

- *Muted Detectors*: Detectors that are muted across all devices.
- *Muted Devices*: Devices that have muted all detectors.
- *Muted Devices for Detectors*: Devices muted for specific detectors.
- *Muted Detections*: Detections that are muted either at the account level or for a specific detector.

You can use the menu in the *Actions* column of the tables to add a muted device for the whole account, unmute or edit existing muted devices, add or update a muted device for a specific detector. For more information, see Muting on page 34



Mutes and Excludes

Muted Detectors (4) These detectors are muted for all devices

Adylkuzz Botnet HTTP Request
CATEGORY: Attack: Command and Control
SEVERITY: HIGH
CONFIDENCE: HIGH
LAST SEEN: 2025-06-04 22:56 (UTC)
UPDATED: 2024-10-31 01:33 (UTC)
TECHNIQUES: T1071
AUTHOR: Fortinet
IMPACTED DEVICES: 1
MUTED: 0

Test muted Detector
CATEGORY: Attack: Infection Vector
SEVERITY: HIGH
CONFIDENCE: MOD
LAST SEEN: 2025-08-27 20:34 (UTC)
UPDATED: 2025-07-18 16:21 (UTC)
AUTHOR: Amelia - Fortinet Test
IMPACTED DEVICES: 0
MUTED: 1

Opt In
CATEGORY: Attack: Infection Vector
SEVERITY: HIGH
CONFIDENCE: HIGH
LAST SEEN: 2025-08-27 05:35 (UTC)
UPDATED: 2025-03-26 17:16 (UTC)
AUTHOR: Amelia - Fortinet Test
IMPACTED DEVICES: 0
MUTED: 1

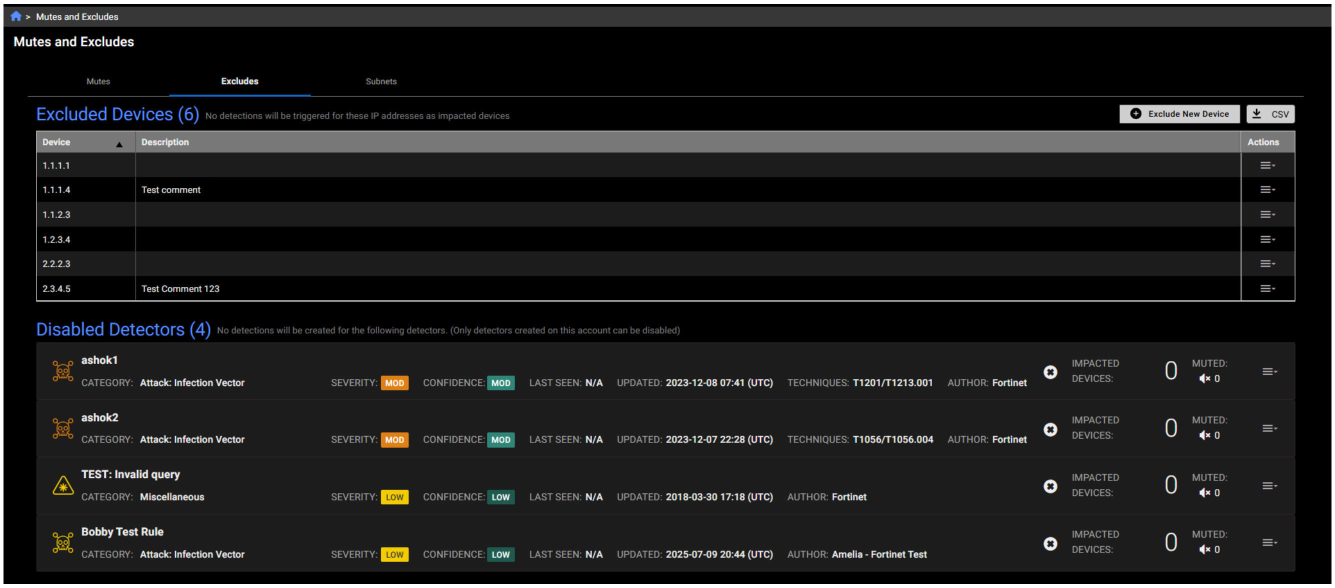
test crosslink
CATEGORY: Attack: Infection Vector
SEVERITY: HIGH
CONFIDENCE: MOD
LAST SEEN: N/A
UPDATED: 2022-04-15 20:50 (UTC)
AUTHOR: Fortinet
IMPACTED DEVICES: 0
MUTED: 0

Muted Devices (7) These devices are muted for all detectors

Device(s)	Description	Muted Date	Actions
8.8.8.8		2025-08-06 20:45:08 (UTC)	≡
1.2.3.7		2025-08-06 20:44:20 (UTC)	≡
1.2.3.0/24		2025-08-06 20:21:07 (UTC)	≡
1.2.3.4		2025-08-06 19:59:56 (UTC)	≡
9.8.7.6		2025-07-14 17:20:23 (UTC)	≡
6.7.8.9		2025-07-14 17:20:13 (UTC)	≡
172.19.241.21		2023-09-26 20:27:19 (UTC)	≡

Excludes tab

The *Excludes* tab lists devices excluded at the account level, meaning they will not trigger any detections. It also includes disabled detectors.



Excluded Devices (6) No detections will be triggered for these IP addresses as impacted devices

Device	Description	Actions
1.1.1.1		≡
1.1.1.4	Test comment	≡
1.1.2.3		≡
1.2.3.4		≡
2.2.2.3		≡
2.3.4.5	Test Comment 123	≡

Disabled Detectors (4) No detections will be created for the following detectors. (Only detectors created on this account can be disabled)

ashok1
CATEGORY: Attack: Infection Vector SEVERITY: MOD CONFIDENCE: MOD LAST SEEN: N/A UPDATED: 2023-12-08 07:41 (UTC) TECHNIQUES: T1201/T1213.001 AUTHOR: Fortinet IMPACTED DEVICES: 0 MUTED: 0

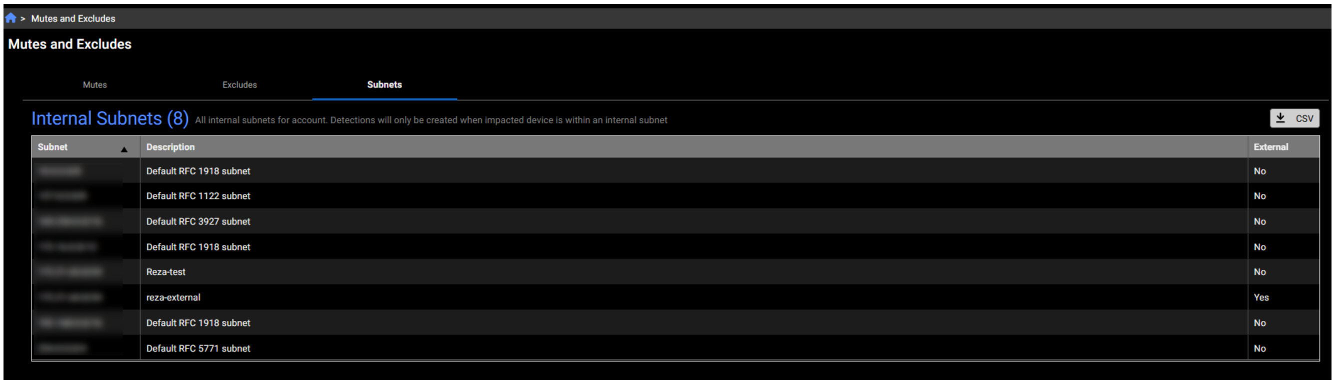
ashok2
CATEGORY: Attack: Infection Vector SEVERITY: MOD CONFIDENCE: MOD LAST SEEN: N/A UPDATED: 2023-12-07 22:28 (UTC) TECHNIQUES: T1056/T1056.004 AUTHOR: Fortinet IMPACTED DEVICES: 0 MUTED: 0

TEST: Invalid query
CATEGORY: Miscellaneous SEVERITY: LOW CONFIDENCE: LOW LAST SEEN: N/A UPDATED: 2018-03-30 17:18 (UTC) AUTHOR: Fortinet IMPACTED DEVICES: 0 MUTED: 0

Bobby Test Rule
CATEGORY: Attack: Infection Vector SEVERITY: LOW CONFIDENCE: LOW LAST SEEN: N/A UPDATED: 2025-07-09 20:44 (UTC) AUTHOR: Amelia - Fortinet Test IMPACTED DEVICES: 0 MUTED: 0

Subnets tab

This tab displays all internal subnets for the account. Detections will only be created when the impacted device is within an internal subnet. It allows you to view and modify settings related to muted devices, excluded devices, and subnets all in one place.



Internal Subnets (8) All internal subnets for account. Detections will only be created when impacted device is within an internal subnet

Subnet	Description	External
[redacted]	Default RFC 1918 subnet	No
[redacted]	Default RFC 1122 subnet	No
[redacted]	Default RFC 3927 subnet	No
[redacted]	Default RFC 1918 subnet	No
[redacted]	Reza-test	No
[redacted]	reza-external	Yes
[redacted]	Default RFC 1918 subnet	No
[redacted]	Default RFC 5771 subnet	No

=

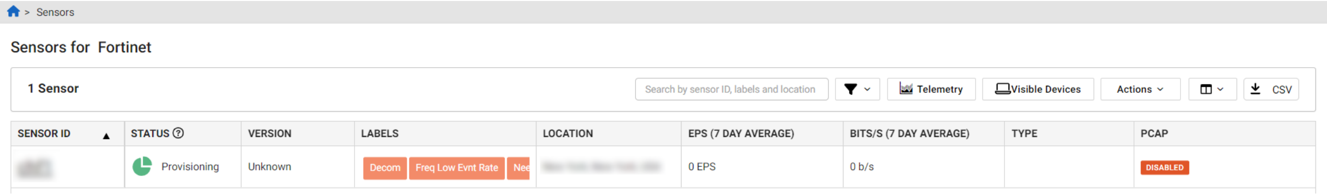
Sensors

The *Sensors* page shows the sensors deployed in your account, both in the aggregate and individually. Use this page to generate provisioning codes, check the status of individual sensors, and view telemetry data.

To access to the Sensors page:

- Click the gear icon at the top-right of the page and select *Sensors*.

You can pivot to the *Sensor Details* page from the *Sensor ID* column in the *detections Details*. Go to *Detections* > *Triage detections* and open a detector. Click a sensor in the *Sensor ID* column. If the sensor is available, the *Sensor Details* page opens.



Sensors for Fortinet

1 Sensor

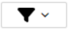
SENSOR ID	STATUS	VERSION	LABELS	LOCATION	EPS (7 DAY AVERAGE)	BITS/S (7 DAY AVERAGE)	TYPE	PCAP
[redacted]	Provisioning	Unknown	Decom Freq Low Evnt Rate Nee	[redacted]	0 EPS	0 b/s		DISABLED

<table>
<tr><td><b>Sensor ID</b></td><td>Click the Sensor ID to view the sensor <i>Status</i>, <i>Telemetry</i> and <i>Settings</i> pages. For information, see Sensor status on page 129</td></tr>
<tr><td><b>Status</b></td><td>The sensor connection status.
<table>
<tr><td><b>Online</b></td><td>Sensor is connected to FortiNDR Cloud within last hour.</td></tr>
<tr><td><b>Offline</b></td><td>No telemetry data received by the sensor for at least an hour.</td></tr>
<tr><td><b>Provisioning</b></td><td>Provisioning code has been created and made initial connection but provisioning process is not complete.</td></tr>
<tr><td><b>Decommissioned</b></td><td>Sensor has been factory reset (only applicable for 1.12 or above).</td></tr>
<tr><td><b>Decommissioned (legacy)</b></td><td>A sensor earlier than 1.12 has been marked as decommissioned and has not sent any additional data. If sensor sends data to FortiNDR Cloud, status will change to <i>Online</i>.</td></tr>
<tr><td><b>Decommissioned (auto)</b></td><td>A sensor 1.12 or later has been marked as decommissioned, but has not communicated with FortiNDR Cloud in the last 7 days. If the sensor later connects to FortiNDR Cloud, it should factory reset itself and switch to <i>Decommissioned</i> status.</td></tr>
<tr><td><b>Decommission Pending</b></td><td>The sensor decommissioning has been initiated.</td></tr>
<tr><td><b>Paused</b></td><td>The sensor is not receiving traffic and can be enabled later.</td></tr>
<tr><td><b>Pausing</b></td><td>The sensor is in the process of being paused. You cannot resume a sensor while it is in this state.</td></tr>
<tr><td><b>Resuming</b></td><td>The sensor is in the process of being resumed. You cannot pause a sensor while it is in this state.</td></tr>
<tr><td><b>Shutdown</b></td><td>A Zscaler virtual sensor is no longer active.</td></tr>
</table></td></tr>
</table>

	All other statuses are written by the sensor itself.
Version	The sensor version. *Unknown* is displayed when there is no data for the version.
Labels	Annotations that are applied to the sensor. See, Manage annotations on page 119
Location	The sensor location.
EPS (7 Day Average)	The average throughput over last 7 days as Events Per Second
BITS/S (7 Day Average)	The average throughput over last 7 days as Bits Per Second.
Type	The platform the sensor was deployed on.
Actions	Click to edit the sensor settings. See Sensor settings on page 132.
PCAP	Indicates if Packet Capture is enabled or disabled.

To filter the Sensors page:

1. In the toolbar, click the filter icon.



2. Filter the page by *Status*, *Type* or *Version*.

You can use the *Search* function to search for a sensor by ID, label or location.

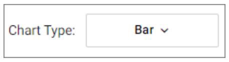
Account telemetry

The *Telemetry* page displays aggregated telemetry data from all sensors in your account. The legend at the right side of the page lists the entries in descending order from highest to lowest. You can use the toggles in the legend to show or hide lines in the graph.

To view the telemetry for each sensor, click the *Telemetry* tab in the *Sensor Status* page. See Sensor status on page 129.

To view the Account Telemetry page:

1. Click the gear icon at the top-right of page select *Sensors*.
2. Click the *Telemetry* button at the top-right of the page. The *Throughput* page opens.
3. (Optional) Click *Chart Type* to switch between *Line* and *Bar* views.



4. (Optional) Filter the page.

Group by	View the telemetry data by *Sensor*, *Event Type*, or *Interface* when available.
Interval	Select *Day*, *Hour* or *5 minutes*.
Date Range	Click to configure the date range using the date picker, or choose a value from the *Quick Ranges* list.

5. Click the *CSV* button to export the data as a CSV file. The CSV file will download everything in the graph. You can use the legend to select the sensor data you want to download.

Account telemetry

The *Telemetry* page displays aggregated telemetry data from all sensors in your account. The legend at the right side of the page lists the entries in descending order from highest to lowest. You can use the toggles in the legend to show or hide lines in the graph.

To view the telemetry for each sensor, click the *Telemetry* tab in the *Sensor Status* page. See Sensor status on page 129.

To view the Account Telemetry page:

1. Click the gear icon at the top-right of page select *Sensors*.
2. Click the *Telemetry* button at the top-right of the page. The *Throughput* page opens.
3. (Optional) Click *Chart Type* to switch between *Line* and *Bar* views.

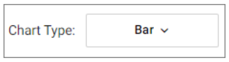


Chart Type: Bar

4. (Optional) Filter the page.

Group by	View the telemetry data by *Sensor*, *Event Type*, or *Interface* when available.
Interval	Select *Day*, *Hour* or *5 minutes*.
Date Range	Click to configure the date range using the date picker, or choose a value from the *Quick Ranges* list.

5. Click the *CSV* button to export the data as a CSV file. The CSV file will download everything in the graph. You can use the legend to select the sensor data you want to download.

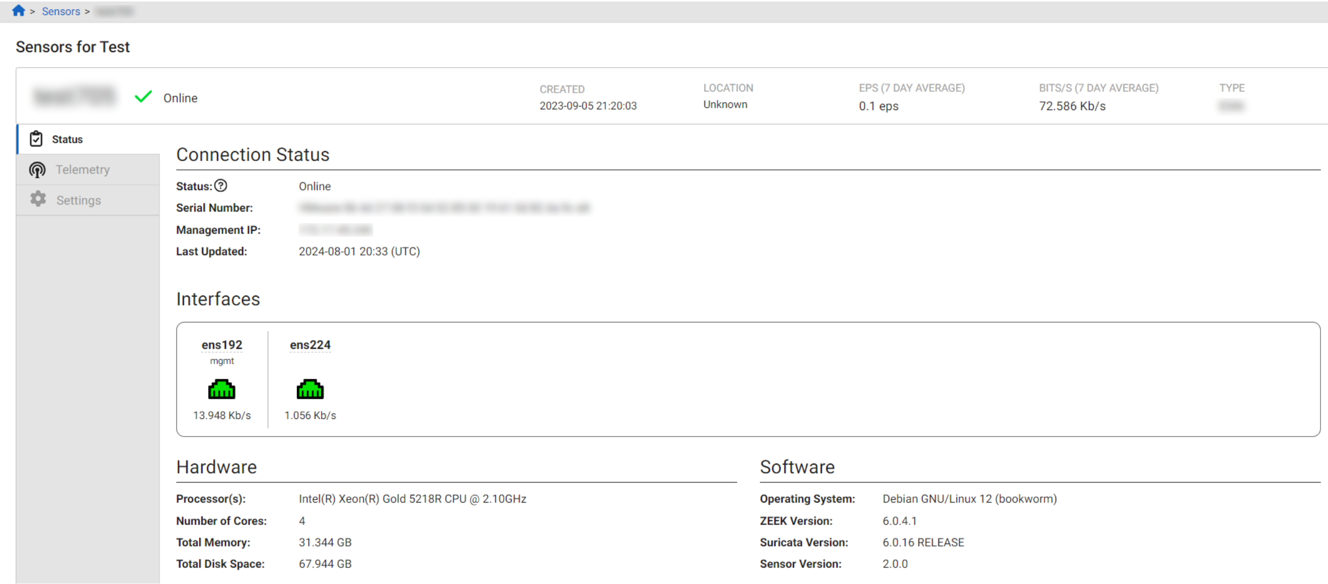
Sensor status

To view the status page for a sensor, click the sensor ID in *Sensors* page. The *Status* tab shows information regarding the physical deployment of the sensor.

Connection Status

The *Connection Status* section displays the state of the sensor's connectivity to FortiNDR Cloud's infrastructure and the IP address of the sensor's management interface.

The *Interfaces* section lists each network interface on the sensor. The sensor's management interface is indicated with the string mgmt. A green interface means a cable is connected, while gray indicates no connection. You can click the interface label to view its MAC address. On the Sensor Details page, each interface also displays its IP address—if that information is available in the API response. This is especially useful when the interface is configured as a NetFlow collector.



Sensors for Test

[redacted] ✓ Online

CREATED	LOCATION	EPS (7 DAY AVERAGE)	BITS/S (7 DAY AVERAGE)	TYPE
2023-09-05 21:20:03	Unknown	0.1 eps	72.586 Kb/s	[redacted]

Connection Status

Status:	Online
Serial Number:	[redacted]
Management IP:	[redacted]
Last Updated:	2024-08-01 20:33 (UTC)

Interfaces

ens192 mgmt	ens224
13.948 Kb/s	1.056 Kb/s

Hardware

Processor(s):	Intel(R) Xeon(R) Gold 5218R CPU @ 2.10GHz
Number of Cores:	4
Total Memory:	31.344 GB
Total Disk Space:	67.944 GB

Software

Operating System:	Debian GNU/Linux 12 (bookworm)
ZEEK Version:	6.0.4.1
Suricata Version:	6.0.16 RELEASE
Sensor Version:	2.0.0

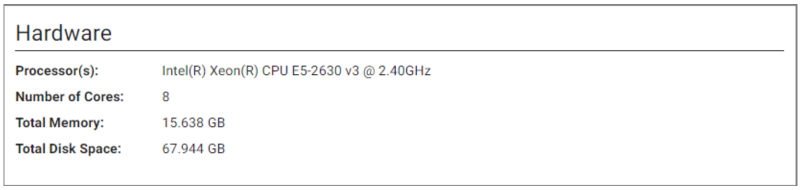
The following table details the naming convention for interfaces on FortiNDR Cloud sensors.

Label	Sensor Type	Interface Type	Purpose	Max Bandwidth
em4	Physical	Ethernet	Management	1 Gb/s
em3	Physical	Ethernet	Monitoring	1 Gb/s
em2	Physical	Ethernet	Monitoring	10 Gb/s
em1	Physical	Ethernet	Monitoring	10 Gb/s
p#p##	Physical	Fiber	Monitoring	10 Gb/s
eth0	Virtual	Virtual	Management	N/A
eth1+	Virtual	Virtual	Monitoring	N/A

The *Max Bandwidth* column shows the physical limitation of the interface, not the maximum sustained bandwidth that the sensor can handle.

Hardware

The Hardware pane displays the sensor *Processor(s)*, *Number of Cores*, *Total Memory* and *Total Disk Space*.

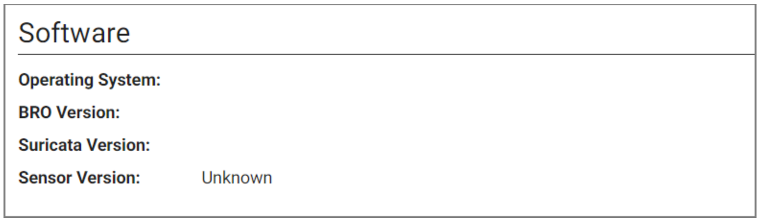


Hardware

Processor(s):	Intel(R) Xeon(R) CPU E5-2630 v3 @ 2.40GHz
Number of Cores:	8
Total Memory:	15.638 GB
Total Disk Space:	67.944 GB

Software

The Software pane displays the *Operating System*, *ZEEK Version*, *Suricata Version* and *Sensor Version*.

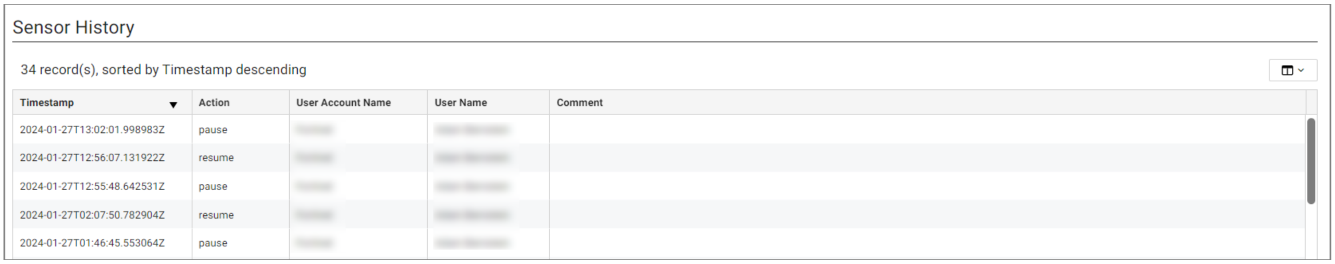


Software

Operating System:	
BRO Version:	
Suricata Version:	
Sensor Version:	Unknown

Sensor History

The *Sensor History* table shows the actions performed (*paused* or *resumed*), the user who initiated the action, well as any comments from the user. The table is sorted in descending order by timestamp. A message appears if there is no history to display.



Sensor History

34 record(s), sorted by Timestamp descending

Timestamp ▼	Action	User Account Name	User Name	Comment
2024-01-27T13:02:01.998983Z	pause	[redacted]	[redacted]	
2024-01-27T12:56:07.131922Z	resume	[redacted]	[redacted]	
2024-01-27T12:55:48.642531Z	pause	[redacted]	[redacted]	
2024-01-27T02:07:50.782904Z	resume	[redacted]	[redacted]	
2024-01-27T01:46:45.553064Z	pause	[redacted]	[redacted]	

Telemetry

The *Telemetry* tab plots measurements of total throughput across the sensor's interfaces in bits per second, and the number of events produced by the sensor. These plots can be found on the *Throughput* and *Events* tabs, respectively. Measurements for both are available in perpetuity. Each plot can be displayed as either a line or bar plot for any time period, and the *Events* plot can be grouped by event type.

The legend in the *Events* tab displays the total throughput count for each individual sensor from highest to lowest. Use the toggles in the legend to show or hide a line in the graph. You also have the option of showing or hiding all entries.

The *Telemetry* page also displays observed devices for the sensor on the *Visibility* tab. This data is essentially a slimmed down version of the *Devices* page.

You have the option of viewing the table as a line or bar graph. You can also group the data by *Interface Name*, set the *Interval* to *Day*, *Hour*, or *5 Minutes*, and download the data as a CSV file.

The *Traffic by Type* custom dashboard displays the data in the *Events* tab in the *Sensor telemetry* page. When you click the widget header it opens the Sensor telemetry page. All the filters applied to the widget will be transferred to the *Sensor Telemetry* page. See, Creating custom dashboards on page 22

Settings

The *Settings* tab shows the configurable fields for a sensor. This includes a sensor's location, arbitrary labels (hostname, site/building code, etc.), and whether to enable PCAP.

To modify these settings, contact your Technical Success Manager.

Enabling PCAP has security and privacy complications. Before enabling PCAP, consult with your Technical Success Manager.

For example, networks with data that is subject to regulatory requirements may require certain controls to be in place before enabling this feature. Enabling this feature may also require uploading a public key to encrypt any PCAPs. See, Account management on page 135 or contact Customer Support for more information on public keys.

Sensor settings

Use the sensor *Settings* page to update the sensor location, make annotations and enable or disable Packet Capture. You can also access the sensor settings from the *Actions* menu on the *Sensors* page.

Requirements:

- You must have Admin privileges to edit the sensor settings.

To edit the sensor settings:

1. Click the gear icon at the top-right of page select *Sensors*. The *Sensor* page opens.
   ⚙
2. Click the *Sensor ID*. The sensor *Status* page opens.
3. Click the *Settings* tab. The *General* page displays the sensor *Location*, *Labels* and *PCAP* status.

4. Click *Edit General Settings* to edit the sensor *Location* and *Labels*.

Location	Update the sensor location.
Labels	Enter keywords about the sensors. To add annotation, type the phrase or keyword and press Tab or Enter. Annotations with an orange background are internal an cannot be edited. Annotations with a blue background can be added or deleted.

5. Click *Edit Features Settings* to enable/disable *Packet Capture*.

PCAP Enabled	Enable packet capture. For more information, see Packet capture on page 90.

To edit the settings from the Sensors page:

1. On the *Sensors* page, click the actions menu at the right side of the page and click *Edit*.
   ≡▾
2. Update the Sensor details and click *Update*.

Location	Update the sensor location.
Annotations	Enter keywords about the sensors. To add annotation, type the phrase or keyword and press Tab or Enter. Annotations with an orange background are internal an cannot be edited. Annotations with a blue background can be added or deleted.
PCAP Enabled	Enable packet capture. For more information, see Packet capture on page 90.
Packet Inspection Engine	• *Suricata*: A Suricata event is created when Suricata (an intrusion detection tool) alerts or metadata are integrated into Zeek logs, highlighting threat detection signatures and behaviors. See, Suricata fields on page 220. • *Fortinet DPI*: A DPI (Deep Packet Inspection) event is created by the Fortinet IPS (Intrusion Prevention System) engine running on the sensor which logs informative and pattern matching based events. The IPS engine logs AppID (Applications seen by the engine for software and protocols), IDS (signatures for vulnerabilities), OT Protocols/Threats (Operational Technology based protocol parsing and signatures), Botnet (Botnet based traffic patterns), and Info (informational events about protocols). See,DPI fields on page 194.

Packet Inspection Engine Guidelines

VM Sensors	To run *Suricata* and *Fortinet DPI* engines concurrently, the following minimum recommended system resources are required: • CPU: 24 cores • RAM: 48 GB

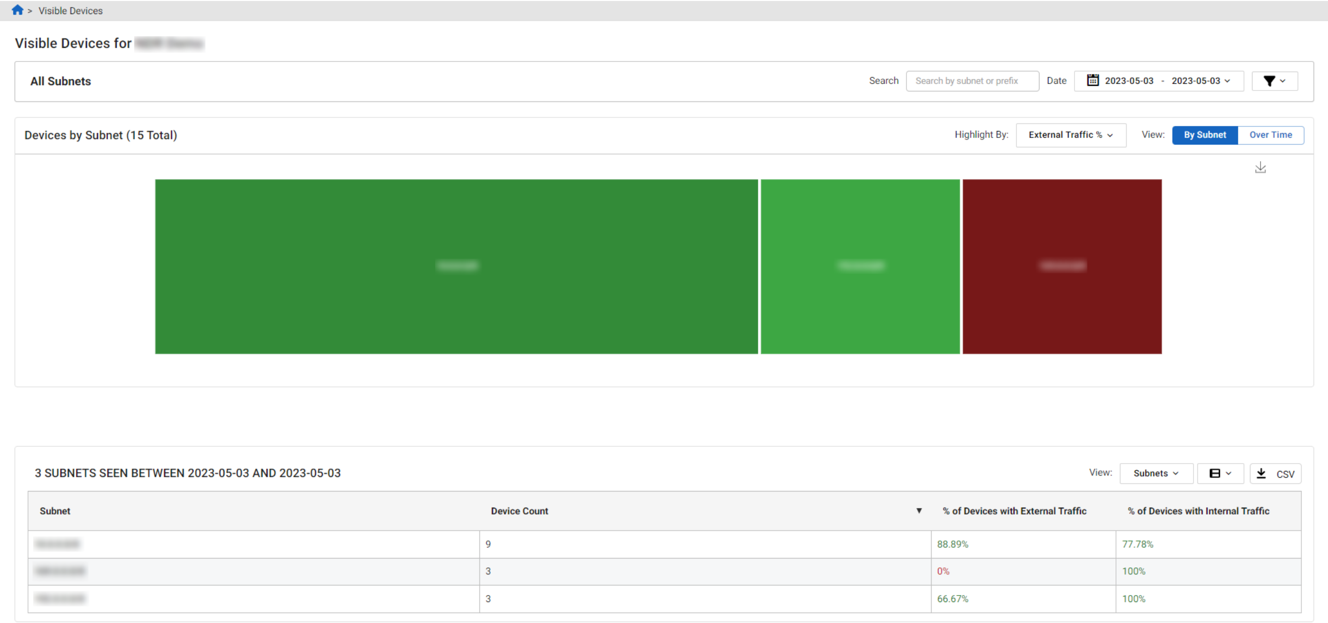
Physical Sensors	Enabling DPI on physical sensors depends on available system resources. Customers should contact the support team for confirmation and guidance.

Device view

FortiNDR Cloud continuously collects data on the devices present in a network. This data is collected on a per sensor basis, since multiple sensors may report the same IP address, either due to re-use of IP space within a single environment, or through traffic from an IP crossing multiple monitoring points.

You can use Device View to:

- Quantify FortiNDR Cloud sensor visibility coverage over time.
- Verify that FortiNDR Cloud sees both internal and external traffic from network devices.



3 SUBNETS SEEN BETWEEN 2023-05-03 AND 2023-05-03

View: Subnets · CSV

Subnet	Device Count	% of Devices with External Traffic	% of Devices with Internal Traffic
[redacted]	9	88.89%	77.78%
[redacted]	3	0%	100%
[redacted]	3	66.67%	100%

Viewing visible devices

To view the visible devices:

1. Click the gear icon at the top-right of the page and select *Sensors*.

   ⚙

2. In the toolbar, click *Visible Devices* . The page is organized into three sections:

All Subnets	**Search**	Enter a subnet or prefix to view a specific device.

	Date	Click to open the date picker to view devices within a specif date range.
	Additional Filters	Click the filter icon to view devices by sensor and Internal and External traffic directions.
Devices by Subnet	**Highlight by**	Select *External Traffic %* or *Internal Traffic %* to change the colors in the box-plot chart to show the percentage of assets. Use this view to verify FortiNDR Cloud is seeing both internal (East-West) and external (North-South) traffic on a specific subnet.
	View	• *By Subnet*: This the default view. • *Over Time*: Shows how many devices were seen within the selected subnet over time. This graph is if sensor coverage is experiencing issues or to debug problems with missing events for a certain time period.
	Box-plot chart	Click the box-plot chart to drill down into the selected subset of the network.
# SUBNETS SEEN BETWEEN YYYY-MM-DD AND YYYY-MM-DD	Shows either a summary of subnets or a list of discrete devices. This table is useful for reviewing the traffic on a per device basis.	

Account management

Use the *Account Management* page to create new users and manage global settings for your account. You must have Admin privileges for one or more accounts to view the *Account Management* page.

To view the Account Management page:

Click the gear icon at the top-right of the page and select *Account Management*.

- If you have access to only one account, you will see the *Account Management* page for your account
- If you have Admin privileges for more than one account, you will see the *Account Inventory* page. From there, click an account to view it's *Account Management* page.
  You can filter page by *Account Name*, *Created Date*, *Account Code*, *Number of Users*, *Number of Sensors* and *Last Login*. You can also sort the *Accounts* page by *Last Login* to view which accounts are in use to help determine if they should be removed.

The top of the page will display descriptive parameters for the account, namely the account's UUID and sensor code, as well as the number of users and sensors provisioned in the account. A banner is displayed when your account is set to expire in less than 90 days.

The *Account Management* page contains the following tabs:

Users	Create new users and assign roles.
Subnets	Lists all internal IP address ranges for the account. This list will always include the ranges defined in RFC 1918, link local addresses (169.254.0.0/16), and multicast addresses (224.0.0.0/4). We recommend adding a public IP space owned by your organization, such as post-NAT, egress, or externally-accessible IP addresses, to this list. Doing so better characterizes the directionality of your network's traffic. Contact your TSM with any public IP addresses or ranges that you would like to add to this list. Admin users can add, edit or delete subnets in an account. See Add or edit subnets on page 147
Modules	Displays the available integrations for FortiNDR Cloud.
Settings	Enable SAML SSO, mulit-factor authentication, and generate PCAP encryption keys.
Billing	Displays the billing summary of the daily and monthly bandwidth usage for an account. Accounts are billed based on the 95th percentile of the aggregate bandwidth usage across all sensors over 10-seconds intervals. The daily and Month-To-Date (MTD) numbers are calculated after the end of each UTC day. • The *Billing* tab displays the: • *Billing Summary*: Your account's bandwidth usage, for the current date, as compared to your available license. • *Monthly History*: The historical data of the bandwidth usage for the chosen date range. You can also compare the bandwidth usage between two or more months by selecting the appropriate date range. • The *Daily Stats* tab displays the daily bandwidth usage for the chosen date range. For customers with more than one account, the billing summary will display the bandwidth for both the parent and child accounts. Click the arrow next to the account name to toggle between the parent and child views. Use the date picker to view the bandwidth for a previous month in the billing cycle.

Creating users and assigning roles

Go to *Account Management > Users* to add users and assign roles. You also have the option of creating *API Only* users. The User Management table displays all the users with access to the portal.

The *Account Management > Users* page displays the following information:

Column	Description
Email	The user's email address

Column	Description
	ADMIN Indicates the user has Admin privileges. 👤 Indicates the user is a Portal user. 🖥 Indicates the user is API Only user.
Full Name	The user's full name.
First Name	The user's first name.
Last Name	The user's last name.
UUID	The user's unique ID.
Last Login	The date and time the user last logged into the account.
Created	The date the user was crated.
Updated	The date and time the user's details were updated.
Status	The user's current status (*Enabled*/*Disabled*).
Locked Out	Indicates the user has been locked out of the account.
MFA	Indicates Mufti-Factor Authentication is enabled or disabled.
Roles	The user role. This column is not displayed by default.
Actions	Use the menu in this column to: • Edit the user details • Move the user between accounts • Email/reset the password. • Disable the user.

To create a new user:

1. Click the gear icon at the top-right of the page and select *Account Management*. (Click the *Users* tab if it is not already open.)
   ⚙
2. Click *Create User*. The *Create New User* dialog opens.
3. Enter the user's details. Required fields are indicated with an asterisk (*).

Email	Enter the user's email address.
First name	Enter the user's first name.
Last name	Enter the user's last name.
Assign role	Select the user role. The following descriptions are also displayed in the portal when you hover over the role name.

Role	Description
User	This role grants permission to perform all non-administrative functions within the portal, including the ability to manage all features for the Detections function of the product Most users will utilize this role for their duties within the product.
Limited User	This role grants permissions to perform the most basic functions within the portal, however it limits a user's ability to manage Detectors, Mutes, and Exclusions within Detections. This role is primarily designed for teams utilizing a multi-teir SOC in which lower-tier analysts should not be able to prevent future detections from firing without review from an upper-tier analyst.
Admin	This role has permissions to configure account-level settings (such as PCAP encryption, enforcing MFA requirements, and so on) and allows grantees the ability to manage users within the account. **Note**: Admins must also have a *User* permission to perform actions in the portal such as viewing Detections or running queries. When the *Admin* role is selected, the system automatically checks for the *User* role. This is because *Admins* need the *User* role for full functionality. If the *User* role is not selected, a warning will appear. You can still create the user if you choose to ignore the warning.

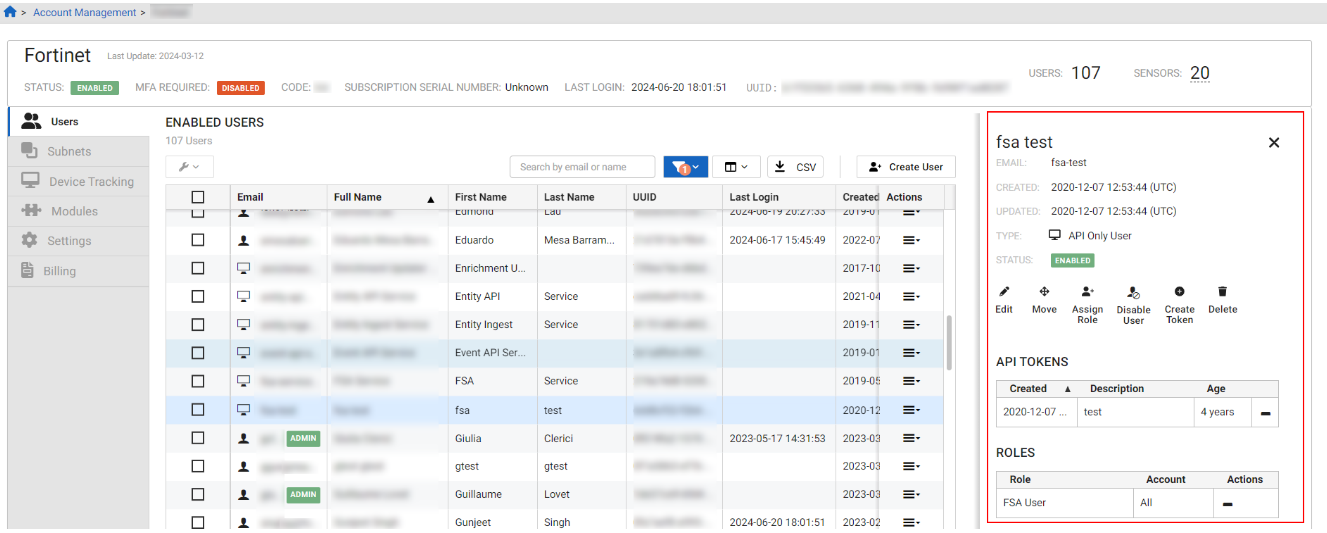
API Only	*API-only users* are primarily designed for integration configurations. They cannot have passwords or multi-factor authentication enabled, they do not receive emails, and their keys are managed entirely by those with *Admin* privileges for the account. API-only users do not appear in the user list by default, but can be displayed by adjusting the page filters. See, To filter the user list. *API Only* is the user role when mandatory SSO is enabled. See Account management settings on page 141.

4. Click *Create*.

New users are automatically assigned the *Training User* role on the Training Modern account, even if the administrator has not assigned any roles to the user. If the account is a parent account, and the administrator has access to child accounts, then a checkbox is available to include child accounts.

To view user details:

Double-click a user in the list. The user details pane opens.



Account Management > [redacted]

Fortinet Last Update: 2024-03-12

STATUS: ENABLED MFA REQUIRED: DISABLED CODE: [redacted] SUBSCRIPTION SERIAL NUMBER: Unknown LAST LOGIN: 2024-06-20 18:01:51 UUID: [redacted] USERS: 107 SENSORS: 20

ENABLED USERS
107 Users

□	Email	Full Name ▲	First Name	Last Name	UUID	Last Login	Created	Actions
□	[redacted]	[redacted]	Edmond	Lau	[redacted]	2024-06-19 20:27:33	2019-01	≡
□	[redacted]	[redacted]	Eduardo	Mesa Barram...	[redacted]	2024-06-17 15:45:49	2022-07	≡
□	[redacted]	[redacted]	Enrichment U...		[redacted]		2017-10	≡
□	[redacted]	[redacted]	Entity API	Service	[redacted]		2021-04	≡
□	[redacted]	[redacted]	Entity Ingest	Service	[redacted]		2019-11	≡
□	[redacted]	[redacted]	Event API Ser...		[redacted]		2019-01	≡
□	[redacted]	[redacted]	FSA	Service	[redacted]		2019-05	≡
□	[redacted]	[redacted]	fsa	test	[redacted]		2020-12	≡
□	[redacted] ADMIN	[redacted]	Giulia	Clerici	[redacted]	2023-05-17 14:31:53	2023-03	≡
□	[redacted]	[redacted]	gtest	gtest	[redacted]		2023-03	≡
□	[redacted] ADMIN	[redacted]	Guillaume	Lovet	[redacted]		2023-03	≡
□	[redacted]	[redacted]	Gunjeet	Singh	[redacted]	2024-06-20 18:01:51	2023-02	≡

fsa test ✕

EMAIL: fsa-test
CREATED: 2020-12-07 12:53:44 (UTC)
UPDATED: 2020-12-07 12:53:44 (UTC)
TYPE: API Only User
STATUS: ENABLED

API TOKENS

Created ▲	Description	Age	
2020-12-07 ...	test	4 years	▬

ROLES

Role	Account	Actions
FSA User	All	▬

- The 👤 icon indicates the role assigned to the user also belongs to child accounts.
- *Edit* and *Reset Password* are disabled with mandatory SSO is enabled. See Account management settings on page 141.

To filter the user list:

1. Click the Filter icon.

   ▼⌄

2. Select the filter type.

Status	Select *All*, *Enabled* or *Disabled*.
User Type	Select *All*, *Portal* or *API Only*.
Account Access	Select an account from the dropdown list.
User Role	Select a user role from the dropdown list.
Oldest API Tokens Age	Select *Any Token Age*, *No Token* or a value between 3 - 12 months.

To update a user's details:

1. Click a user in the list. The *User Details* pane opens.

Option	Purpose
Edit	Modify the email or name for the user account.
Move	Assign the user to a different account.
Assign Role	Assign a role to a user. • *User* • *Limited User* • *Admin*
Reset Password	Send an email with a password reset link to the user.
Disable MFA	Disable the requirement for an MFA token for the user. If *Require MFA* is enabled for the account, the user will be required to re-establish an MFA token on next log in.
Unlock	Unlock the user account. User accounts are locked after five failed password attempts in 10 minutes.
Disable User	Disable log in access to the user account and any of its API tokens.

Optionally, you can use the menu in the *Actions* column to quickly *Edit User*, *Move User*, *Email Password Reset* or *Disable User*.

The *Edit User*and *Email Password Reset* are disabled when mandatory SSO is enabled. See Account management settings on page 141.

2. Click close (**X**) to close the pane.

To perform bulk actions:

1. Select the users in the lists or select all. The tools icon is activated.

2. Click the tool icon and select *Move Users*, *Enable Users*, *Disable Users*, *Assign Role* or *Revoke Role*.

To export the user list as a CSV file:

- In the toolbar, click the *CSV* button. The list is saved to your device.

In the *user_role* column, if the user has:

- No account name in front of the role, this indicates the user belongs to the current account (Admin, User, Limited User).
- The same role in two or more accounts, the account name is displayed followed by a colon (:) followed by the user role.
- A child account, the *user_roles* column will indicate *includes children*.
- A role in a different account, the role it displayed in a separate *user_role* column for the account.

Account management settings

Use the settings tab to upload and upgrade PCAP encryption keys, enable and update SAML SSO settings, and enable multi-factor authentication.

- SAML SSO on page 141
- PCAP encryption keys on page 144
- Multi-factor authentication on page 145
- User activity timeout on page 146
- Disabling an account on page 146
- Sensor email alerts on page 146

SAML SSO

FortiNDR Cloud translates SAML authentication from the identity provider into the native authentication scheme. User login is the same regardless of whether the user has logged in using SAML or a password. The session state in FortiNDR Cloud is independent of the SAML session. Logging out of SAML does not log the user out of FortiNDR Cloud.

When enabling SAML SSO keep the following considerations in mind:

- First time FortiNDR Cloud users will have a user record created automatically when they first authenticate using SAML. Users are required to have a first name, but the last name is optional. These users will initially have no permissions. An Admin will need to grant roles to these users using the normal Account Management UI.
- When existing users authenticate using SAML, any changes to their first and last name will be updated in FortiNDR Cloud as well.
- FortiNDR Cloud identifies users from SAML by their email address. If the user's email address has changed in the SAML SSO Provider, FortiNDR Cloud will create a new user record for that user the next
- Disabling a user in FortiNDR Cloud also disables SAML authentication for that user. However, disabling a user in the SAML SSO Provider does not disable the user in FortiNDR Cloud. The user will still have access if they have a password or API token. Users need to be manually disabled in FortiNDR Cloud as well.
- Users authenticating with SAML are also allowed to authenticate using passwords as well. Typically, at least one Admin in the account should have a password as a backup in case SAML authentication fails.

Failure Scenarios

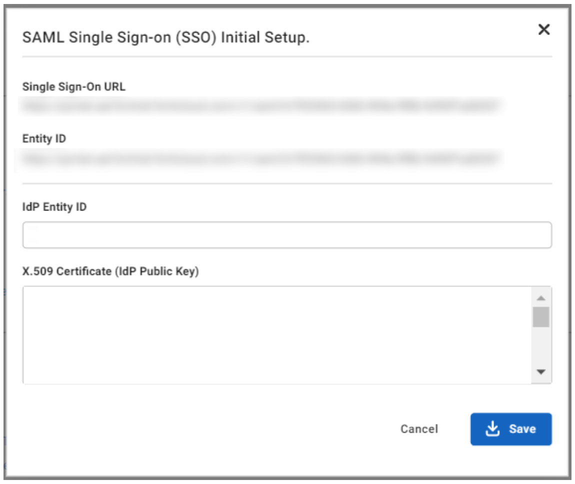
There are a variety of reasons why SAML authentication may fail.

- SAML has not been configured for the account.
- SAML has been configured, but disabled.
- The user is attempting to authenticate with the wrong account. For example, the user belongs to the Acme account but is trying to authenticate with the Acme Subsidiary account.
- The user has been disabled in FortiNDR Cloud.
- The user does not have a first name.

For security reasons, FortiNDR Cloud may not provide the exact reason for the failure. Please make sure that SAML is configured correctly for the account and the user.

To enable SAML login:

1. Click the gear icon at the top-right of the page and select *Account Management*.
2. Select an account.
3. Click the *Settings* tab.
4. Click *Set up SAML SSO*. The *SAML Single Sign-on (SSO) Initial Setup* dialog opens.


SAML Single Sign-on (SSO) Initial Setup.
×
Single Sign-On URL
Entity ID
IdP Entity ID
X.509 Certificate (IdP Public Key)
Cancel
Save

5. Copy the values from the *Single Sign-On URL* and *Entity ID* fields and paste them into the general settings of your SAML Provider configuration.

> *Entity ID* may also be called *Audience URI* or *SP Entity ID*.

6. Set the application's subject or username to *Email*.
7. Add an attribute statement, `first_name`, with the value for a user's first name.
8. Add an attribute statement, *last_name*, with the value for a user's last name.
9. Enter the following information from your SAML SSO Provider into the *SAML Single Sign-on (SSO) Initial Setup* dialog:
   - *IdP Entity ID*
   - *X.509 Certificate (IdP Public Key)*

10. Click *Save*.

To login with SAML SSO:

1. Navigate to your SAML SSO Provider's dashboard
2. Click the ThreatINSIGHT or FortiNDR Cloud button from the SAML SSO Provider's dashboard

- FortiNDR Cloud only supports IdP (identity-provider) initiated logins where the user will need to initiate login from their SAML SSP Provider's dashboard.
- If you are a new user logging into FortiNDR Cloud for the first time, you will see a message indicating that you do not have permission to use this application. This means that your roles have not yet been granted. Contact your administrator to assign your roles.

To disable SAML SSO:

1. Click the gear icon at the top-right of the page and select *Account Management*.
2. Select an account.
3. Click the *Settings* tab and click *Disable SAML Settings*.
4. In the Confirmation Dialog, click *Confirm*.

OneLogin SAML Configuration

Requirements:

- SAML *Single Sign-On URL*.

To configure OneLogin:

1. Add a new application using the *SAML Custom Connector (Advanced)*. For more information, see the product documentation.
2. In the *Configuration* section, use your FortiNDR Cloud*Single Sign-On URL* for the following fields:
   - *Audience (EntityID)*
   - *Recipient*
   - *ACS (Consumer) URL Validator*
   - *ACS (Consumer) URL*

   The ACS (Consumer) URL Validator is a regular expression. Replace the beginning of the URL:

   ```
   https://portal.fortindr.forticloud.com/v1/saml/
   ```

   With the following:

   ```
   ^https:\/\/portal.fortindr.forticloud.com\/v1\/saml\/
   ```

3. Make sure the *SAML initiator* field is set to *OneLogin*.
4. Change the *SAML signature element* to *Both*.

5. In the *Parameter* section, add the following fields and select the *Include in SAML assertion* flag for each:

Name	Value
first_name	First Name
last_name	Last Name

6. In the *SSO* section, copy the *Issuer URL* and the *X.509 Certificate*. You will need these later.

To configure FortiNDR Cloud:

Update the *SSO SAML Setup* fields with the OneLogin values you copied earlier.

Field	Value
IdP Entity ID	OneLogin *Issuer URL*.
X.509 Certificate	OneLogin *X.509 Certificate*.

Mandatory SSO

You can require all users to log into FortiNDR Cloud using SSO. Before enabling mandatory SSO, keep the following considerations in mind:

- Multi-Factor Authentication (MFA) is disabled.
- You can only edit API users
- *Change my password* and *Enable MFA* are disabled in *Profile Settings > My Profile > Authentication*
- *Edit User* and *Email Password Reset* are disabled in *Account Management > Users > Actions*.

Requirements:

- SAML SSO must be enabled.
- User must have *account.sso_required.update* permissions

To enable mandatory SSO:

1. Click the gear icon at the top-right of the page and select *Account Management*.
2. Select an account.
3. Click the *Settings* tab.
4. Under *SAML SSO* enable *Require SSO Login (disable login with username/password)*. The *Confirm enabling mandatory SSO login* dialog opens.
5. Click *Confirm*.

PCAP encryption keys

PCAP Encryption Keys are used in conjunction with Packet Capture. If an encryption key is uploaded, all PCAP files will be encrypted with the provided key. This prevents FortiNDR Cloud from having any visibility into the raw PCAP data that was captured. For more information, see Packet capture on page 90.

The *Uploaded by* field displays the full name and UUID of the user who uploaded the encryption key as well as the *Uploaded date*. If the user does not belong to the account, *Unknown User* is displayed.

The corresponding private key will be required to decrypt any downloaded PCAP files. If the private key is lost, the encrypted PCAP files cannot be recovered.

To upload an encryption key:

1. Click the gear icon at the top-right of the page and select *Account Management*.
2. Select an account.
3. Click the *Settings* tab.
4. Under *PCAP ENCRYPTION KEYS*, click *Set PCAP Encryption Key*. The *Set PCAP Encryption Key* dialog opens.
5. Paste the public key and click *Set Key*. The encryption key is validated for errors.

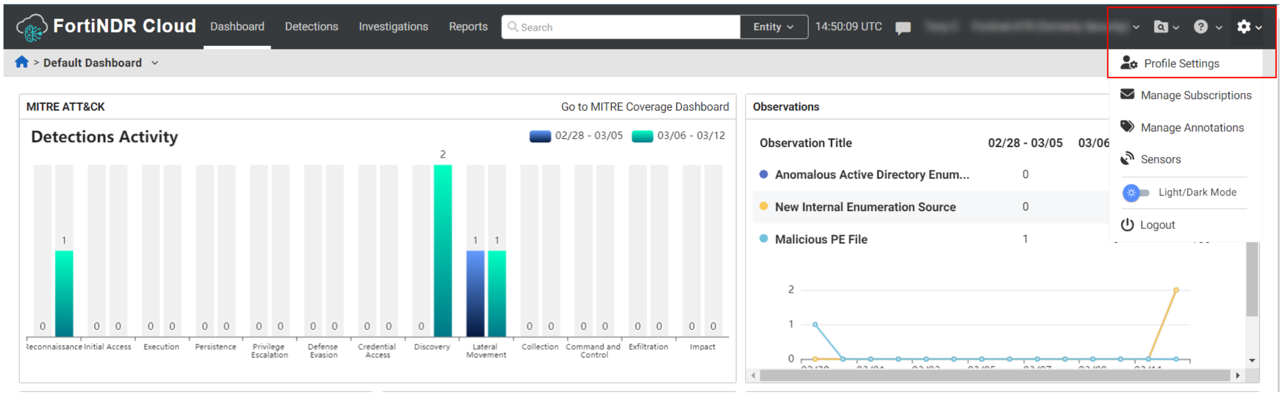
The key will take effect for any new PCAP files generated. Existing PCAP files are not retroactively encrypted.

Multi-factor authentication

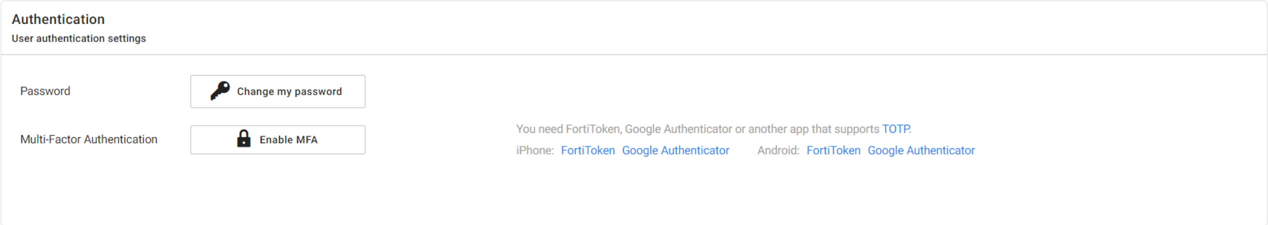
Enable Multi-factor authentication (MFA) to require all users to enter an MFA token the next time they log in to FortiNDR Cloud. Users will not be able to navigate to any FortiNDR Cloud page until they confirm their MFA token.

To enable Multi-factor authentication:

1. Click the gear icon at the top-right of the page and select *Profile Settings*.



2. Under *Authentication*, click *Enable MFA*.



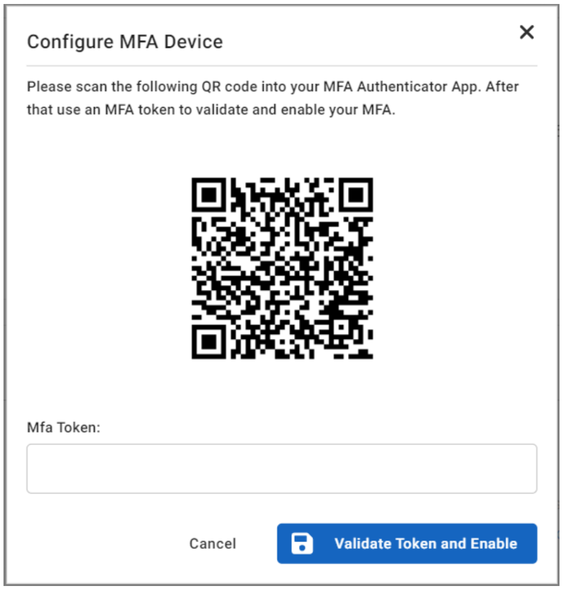
Authentication
User authentication settings

Password — Change my password

Multi-Factor Authentication — Enable MFA

You need FortiToken, Google Authenticator or another app that supports TOTP.
iPhone: FortiToken Google Authenticator Android: FortiToken Google Authenticator

3. Scan the QR code with a token application to validate and enable MFA.



Configure MFA Device

Please scan the following QR code into your MFA Authenticator App. After that use an MFA token to validate and enable your MFA.

Mfa Token:

User activity timeout

Automatically log out users who belong to the account you are in. Users who only have access to the account are not affected by this setting.

1. Click the gear icon at the top-right of the page and select *Account Management*.
2. Select an account.
3. Click the *Settings* tab and scroll down to *User Activity Timeout*.
4. Enter a value between 15 and 480 minutes.
5. Click *Update*.

Disabling an account

Technical Success Managers can disable accounts that are either no longer in use or should no longer be in use. This option has the following effects:

- Disables login for all users in the account.
- Disables all notifications to those users.
- Stops ingest of all data.
- Removes the account from default account lists.

This can be completed by clicking the option icon in *Account Management* for a given account and then clicking on *Disable*.

Sensor email alerts

Administrators can create email notifications to alert you when sensor is offline or the event rate is low.

To create a sensor email alert:

1. Click the gear icon at the top-right of the page and select *Account Management*.
2. Select an account.
3. Click the *Settings* tab and scroll down to *Notification Emails*.
4. In the *Email* field, enter a recipient's email address.
5. Select *Sensor Offline Alert* and/or *Event Rate Low Alert*.
6. Click *Update*.
7. Click *Add Record* to add another email address.
8. Click **X** to delete an email address.

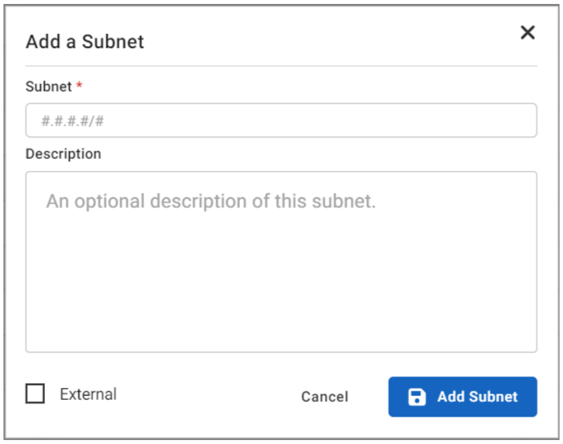
Add or edit subnets

The *Subnets* page lists all internal IP address ranges for the account. Admin users can add, edit or delete subnets in an account.

To add a subnet:

1. Click the gear icon in the top navigation and select *Account Management*.
    - If you have access to one account, the account page will appear.
    - If you have access to multiple accounts, select an account.
2. Click the *Subnets* tab and click *Add Subnet*. The *Add a Subnet* dialog opens.
3. Configure the subnet and click *Add Subnet*.

Subnet	Enter the IP address for the subnet.
Description	(Optional) Enter a description of the subnet.
Exteral	Select if this is an internal subnet that will be treated as external by Suricata.



To edit a subnet:

1. Click the gear icon in the top navigation and select *Account Management*.
2. Click the *Subnets* tab.
3. In the *Actions* column, click the dropdown and select *Edit*. The *Update Subnet* dialog opens.
4. Edit the subnet and click *Update Subnet*.

To delete a subnet:

1. Click the gear icon in the top navigation and select *Account Management*.
2. Click the *Subnets* tab.
3. In the *Actions* column, click the dropdown and select *Delete*. The *Delete xx.xx.xxx.x/xx?* dialog opens.
4. Click *Confirm*.

To perform a bulk import:

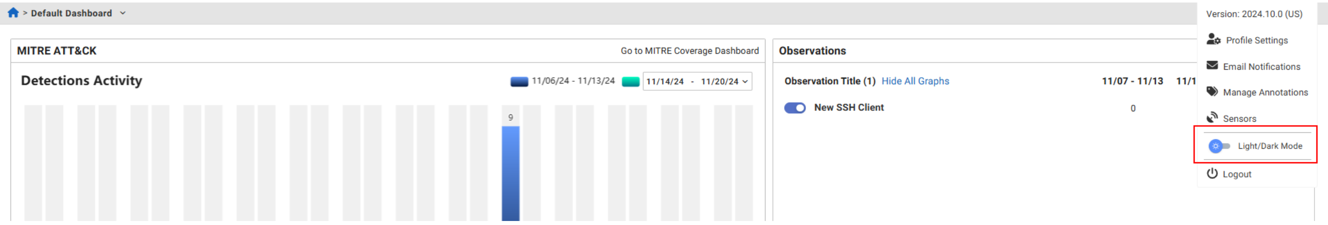
1. Click the *CSV* button to download the current subnets.
2. Add or remove entries in the file and save it.
3. Click the *Import Subnets* button and upload the file. and re-upload the file.
4. Click the *Reset to Default* button to delete all subnets except the default.

Light/Dark Mode

The Light/Dark mode setting is saved to your browser. When you switch accounts, you will see the same theme as the previous user account. The mode you select does not affect other users with the same account.

To switch between light and dark mode:

Click the gear icon at the top-right of the page and toggle between *Light* and *Dark* mode.



Sensors deployment

FortiNDR Cloud deploys network sensors to monitor your virtual and physical on-premises infrastructure. Once deployed and configured, network metadata is collected and sent to FortiNDR Cloud for security analysis, threat detection, and indexing. A web application and application programming interface (API) are provided for analysis of security events. FortiNDR Cloud is delivered as a Software-as-a-Service (SaaS) and is fully managed by Fortinet, including network sensors.

The maximum size of the folder that stores the logs is 10G. Sensors are designed to retain logs for seven days. In the event of an issue affecting the upload, logs that are seven days and older will expire and are no longer available. Cleanup scripts are in place to automatically clean up the files when the log directory exceeds a certain size to prevent excessive disk usage.

Sensor specifications

Sensor Types

The following table lists the available sensor types and the maximum sustained throughput each type can consume.

Sensor Type	Form	Interfaces	NDR Sniffer Throughput*
FNDR Cloud 500F **Small sensor**	1U Server	2x 1G Copper 2x 10G SFP+ 2x 10G Copper	6 Gbps (metadata processing) across all ports
FNDR Cloud 900F **Large sensor**	1U Server	2x 1G Copper 2x 10G SFP+ 2x 10G Copper	13 Gbps (metadata processing) across all ports
FNDR Cloud 2540G **Extra large sensor**	2U Server	2x 10/25GbE SFP28 and 4x 1GbE RJ45 2x 10GbE RJ45 (breakout cable supported)	38 Gbps (metadata processing) across all ports
FNDR Cloud Virtual Sensors	OVF File	1 mgmt + min 1 TAP	Hypervisor dependent

*Using FortiTester default Enterprise Profile

Network interfaces for physical sensors

- 1 x 1Gbps Ethernet interface for management
- 1 x 1Gbps Ethernet interface for monitoring
- 2 x 10Gbps Ethernet interfaces for monitoring
- 2 x 10Gbps SFP (fiber) interfaces for monitoring

Minimum virtual sensor (ESX) host requirement

For details, the *ESXi Sensor Installation Guide*.

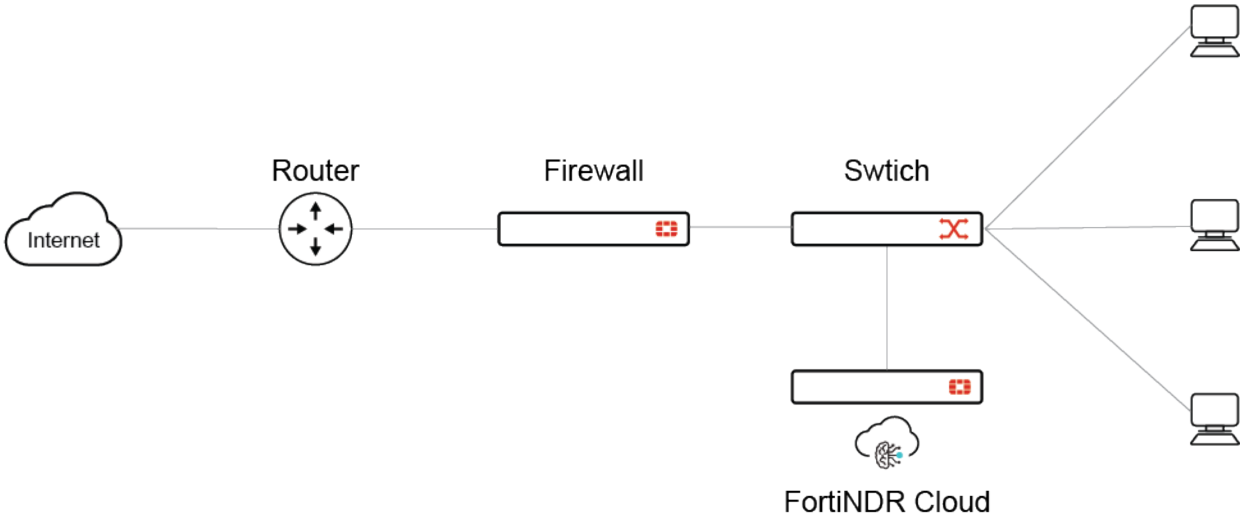
Network data sources

A network data source must be configured for the sensor. Sensors collect and process network data using standard network packet capture sources such as a network switch Switched Port Analyzer (SPAN) port or Test Access Port (TAP) device connected to a monitoring interface on the sensor. Virtual sensors do not currently support ERSPAN data sources.

SPAN (mirror) port

A SPAN port (sometimes called a mirror port) is a software feature built into a switch that creates a copy of selected packets passing through the device and sends them to a designated SPAN port. Using software on the network switch, an administrator can easily configure what data is monitored by a FortiNDR Cloud sensor connected to the SPAN port.

If the switch CPU is already heavily utilized prior to configuring a SPAN, SPAN data will likely be given a lower priority on the switch. The SPAN also uses a single egress port to aggregate multiple links, so it may become oversubscribed.



When to consider a SPAN port

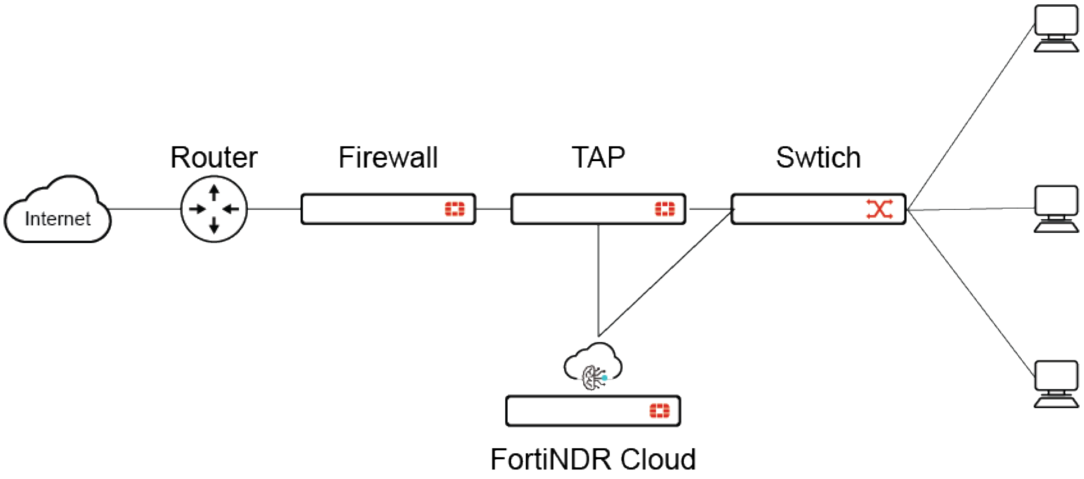
- Limited ad hoc monitoring in locations with SPAN capabilities where a network TAP does not currently exist.
- Production emergencies where there is no maintenance window in which to install a TAP.
- Remote locations with modest traffic that cannot justify a full-time TAP on the link.
- Access to traffic that either stays within a switch or never reaches a physical link where the traffic can be TAPed.
- Locations with limited light budgets where the split ratio of a TAP may consume too much light.

Network TAP

A network TAP (Test Access Point) is a device that connects directly to the cabling infrastructure. Instead of two switches or routers connecting directly to each other, the network TAP sits between the two devices and all data flows through the TAP. Using an internal splitter, the TAP creates a copy of the data for monitoring while the original data continues unimpeded through the network.

This ensures every packet of any size will be copied. This technique also eliminates any chance of subscription overage. Once the data is TAPed, the duplicate copy can be sent to a FortiNDR Cloud sensor.

Inserting a TAP into an existing network link requires a brief cable disconnect. TAPs are typically installed during a maintenance window.



When to consider a network TAP

- Switch CPU already highly utilized and may drop packets.
- When additional load on the switch could impact network performance.
- No ports available on the switch.
- Hardware does not support SPAN functionality.

- When legal regulations or corporate compliance mandate that all traffic for a particular segment be monitored.

Not sure which data source(s) to use? Ask your FortiNDR Cloud representative.

Network aggregator

For many organizations, a network aggregator is configured to monitor traffic at several key locations within the network. FortiNDR Cloud sensors can deploy off a network aggregator if one is available within the network. Some network aggregation appliances also have the ability to decrypt network traffic, which can greatly increase the fidelity and visibility of the FortiNDR Cloud sensor.

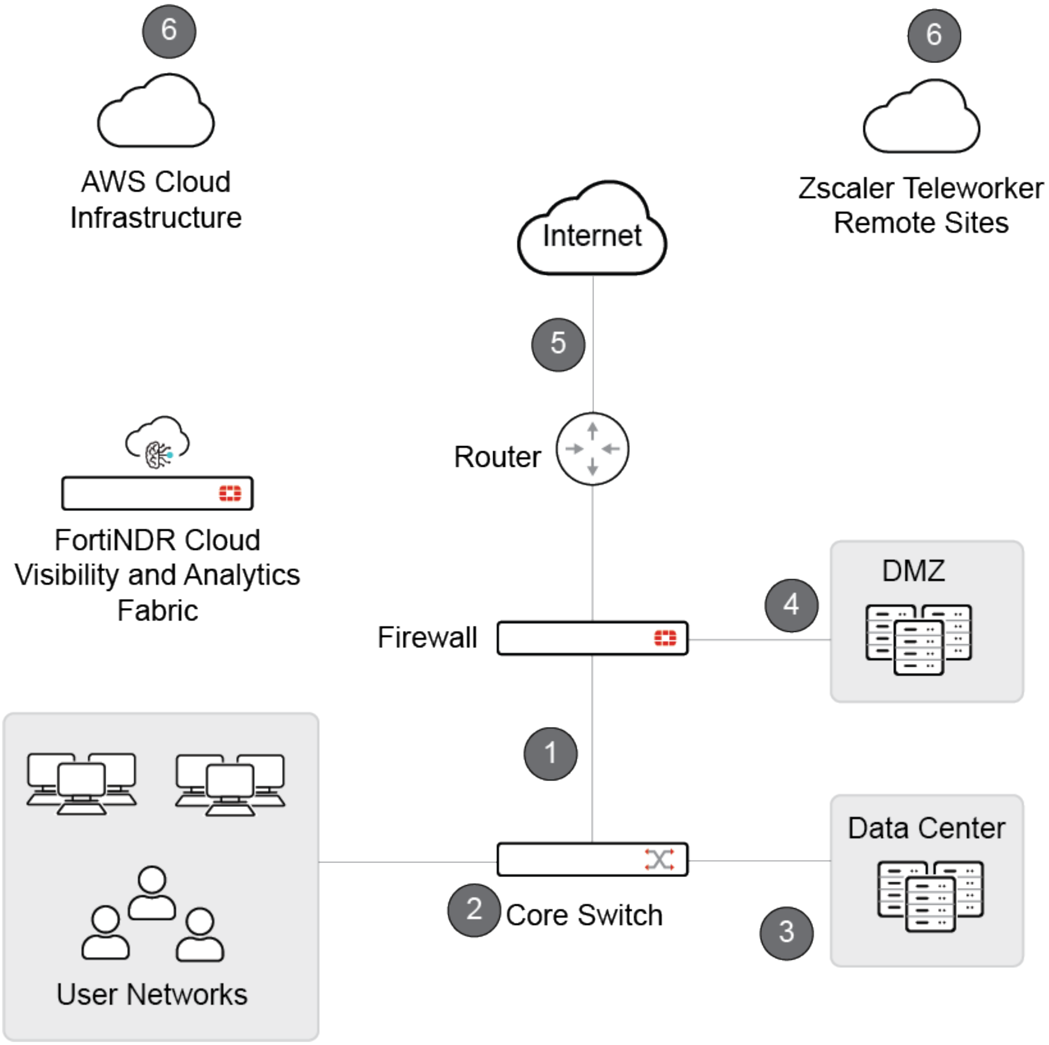
Network aggregators are also commonly used to monitor traffic from networks with 40Gbps links. In this case, an aggregator is utilized to split traffic from a 40Gbps line to four separate FortiNDR Cloud appliances monitoring up to 10Gbps per sensor.

Complex or combination deployments

Multiple FortiNDR Cloud sensors can be deployed to obtain full visibility across the environment. Each sensor reports back to the FortiNDR Cloud, providing cross-enterprise visibility through a single, unified platform. Queries can be executed against data from all sensors, or a subset as specified by an analyst.

Sensor deployment strategy

Sensor placement is prioritized for network locations where security events are most likely to occur. Data collected from multiple locations provides a complete and accurate picture of potential security threats. Below is a prioritized list of data source locations in a typical network environment.



Number	Location	Description
1	**Egress Points**	Monitoring activity between your network environment and the Internet provides visibility of security events related to malware beaconing, command and control, network tunneling and data exfiltration activity. Benefits: • Captures north/south traffic from clients and servers • Enables detection of exfiltration, C2, tunneling, beaconing
2	**Core Switch**	Activity within your network can include security events related to lateral movement and staging of attacks between workstations and important internal resources such as internal web applications, file servers or your system infrastructure.

Number	Location	Description
		Benefits: • Captures east/west traffic between clients and servers • Enables detection of lateral movement, staging, internal threats
3	**Data Center**	Your data center infrastructure is where your valuable information is stored, making it a target for theft and unauthorized access. Sensors placed between these servers and virtual hosts provide visibility of security events related to this activity. Benefits: • Captures east/west traffic between servers (including virtual) • Enables detection of data theft, unauthorized access
4	**DMZ**	Public facing applications such as mail services, web sites and business-to-business applications are constantly attacked. Monitoring network zones that host these applications provides visibility of security events related to unauthorized access and data exfiltration. Benefits: • Captures north/south traffic between DMZ and external clients • Enables detection of unauthorized access, vulnerability exploitation, exfiltration
5	**External Link**	Benefits: • Captures north/south traffic between external clients and the internal networks. Provides visibility to traffic even if it is blocked by the firewall • Enables detection of exploitation attempts
6	**Cloud Visibility**	Benefits: • Cloud infrastructure workload traffic analysis via AWS/Azure Machine Images or VM/KVM. • Teleworker and Remote Sites not backhauled to VPN via Zscaler integration. • Enables detection of un-managed and IoT devices and access to cloud infrastructure

Sensor data source configuration

For instructions on sensor data source configuration for VMware ESX, see the *ESXi Sensor Installation Guide*.

NetFlow

NetFlow is a network monitoring protocol widely used for collecting and analyzing IP traffic. It provides visibility into network usage, application behavior, and potential threats by exporting flow records to a collector.

Starting from version 2.3.0, FortiNDR Cloud sensor can operate as a NetFlow collector, enabling network devices to send flow data for behavioral analysis and threat detection.

To use this feature, point your flow exporters to FortiNDR Cloud sensor collector's IP and port. The sensor listens on UDP/2055 (NetFlow v5, v9, IPFIX) and UDP/6343 (SFlow) by default, with ports configurable as needed.

To view the complete list of NetFlow fields, see NetFlow fields.

Prerequisites

Before configuring NetFlow collection, ensure your system meets the following requirements:

FortiNDR Cloud Sensor version	2.3.0 or above.	
Minimum Interface Requirements by Platform:	**Platform Type**	**Interfaces Required**
	VXLAN monitoring (Azure, OCI, AWS)	1 × Management (also used for VXLAN monitoring) 1 × Collector (IPv4 stack enabled, uplink required)
	Other platforms	1 × Management 1 × Monitoring (TAP, uplink required) 1 × Collector (IPv4 stack enabled, uplink required)
Sensor status	Reported as Online in the FortiNDR Cloud portal.	

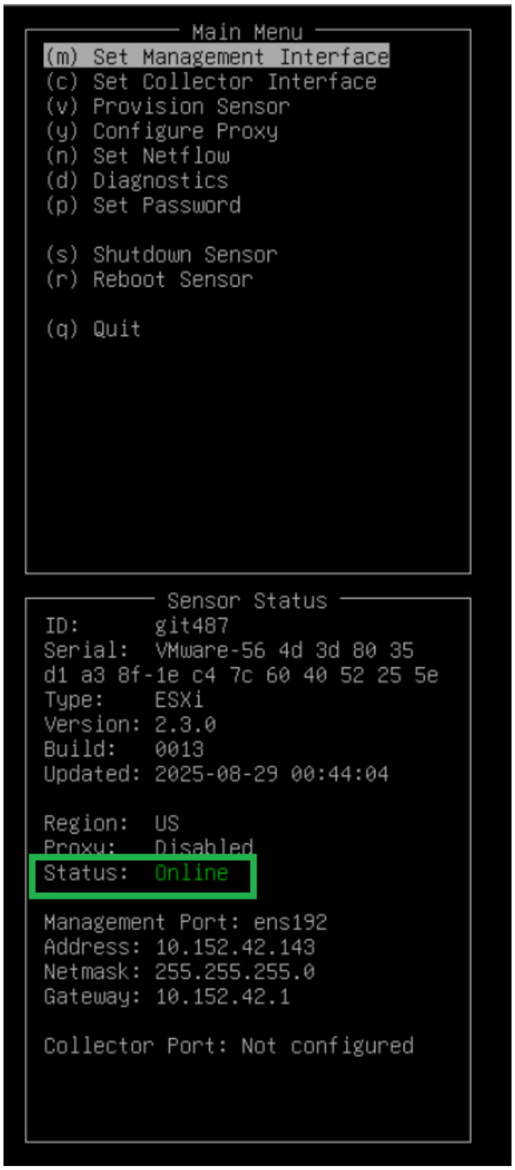
Refer to your NetFlow exporter configuration to verify supported transport protocols (UDP) and ensure inbound firewall rules allow traffic on the configured NetFlow(s) Flow ports.

Configuring NetFlow for FortiNDR Cloud

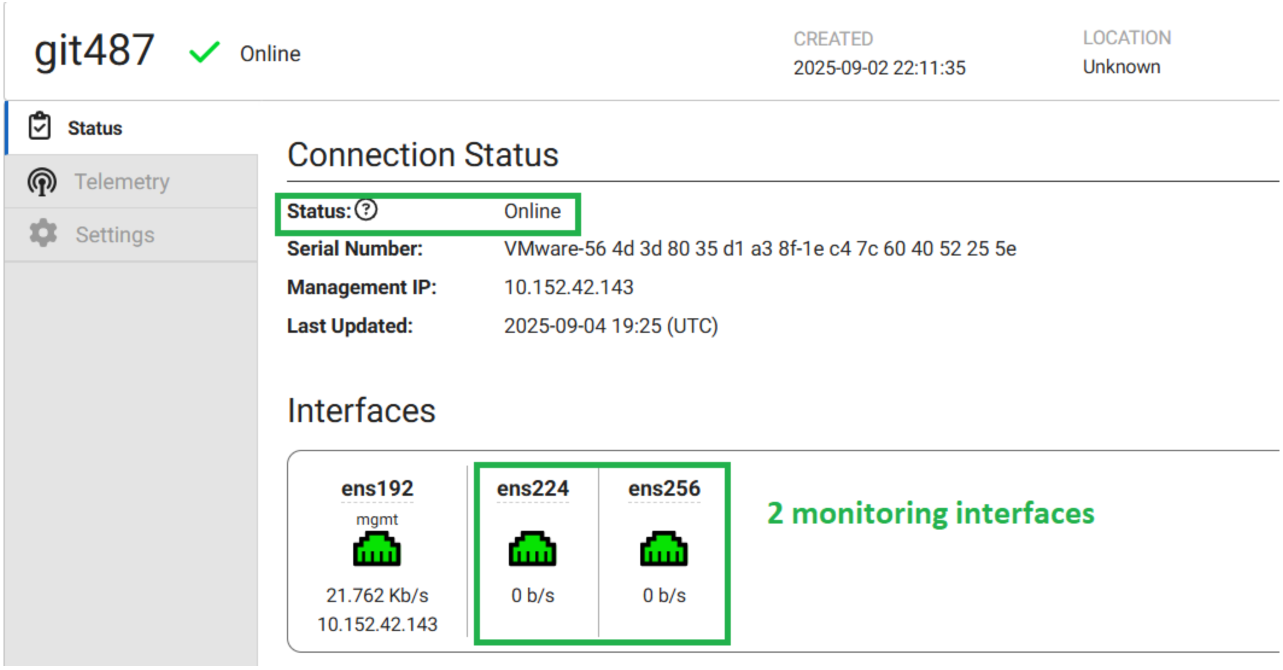
1. Verify Sensor Status

To verify the sensor status:

1. Log into the sensor console using:
   - Username: `config`
   - Password: (The password set during initial installation)
2. Confirm the sensor is *Online* and both monitoring interfaces are detected from sensor console and FortiNDR Cloud portal.



```
 ─────────── Main Menu ───────────
 (m) Set Management Interface
 (c) Set Collector Interface
 (v) Provision Sensor
 (y) Configure Proxy
 (n) Set Netflow
 (d) Diagnostics
 (p) Set Password

 (s) Shutdown Sensor
 (r) Reboot Sensor

 (q) Quit

 ────────── Sensor Status ──────────
 ID:      git487
 Serial:  VMware-56 4d 3d 80 35
 d1 a3 8f-1e c4 7c 60 40 52 25 5e
 Type:    ESXi
 Version: 2.3.0
 Build:   0013
 Updated: 2025-08-29 00:44:04

 Region:  US
 Proxy:   Disabled
 Status:  Online

 Management Port: ens192
 Address: 10.152.42.143
 Netmask: 255.255.255.0
 Gateway: 10.152.42.1

 Collector Port: Not configured
```



git487 ✓ Online

CREATED
2025-09-02 22:11:35

LOCATION
Unknown

Connection Status

Status: ⓘ	Online
Serial Number:	VMware-56 4d 3d 80 35 d1 a3 8f-1e c4 7c 60 40 52 25 5e
Management IP:	10.152.42.143
Last Updated:	2025-09-04 19:25 (UTC)

Interfaces

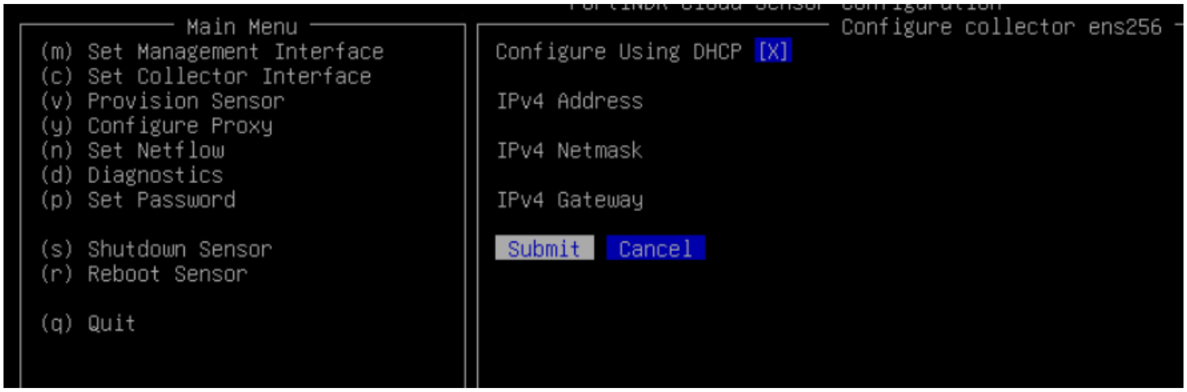
ens192	ens224	ens256
mgmt		
21.762 Kb/s 10.152.42.143	0 b/s	0 b/s

2 monitoring interfaces

2. Configure the collector Interface

To configure the collector interface:

1. From the config menu, select *Set Collector Interface* (Press c).
   - Highlight the monitoring interface you want to use as the collector.
   - Ensure this interface has an IP stack enabled on the network.
2. If DHCP is available on the collector subnet, choose *Configure Using DHCP* and select *Submit*.

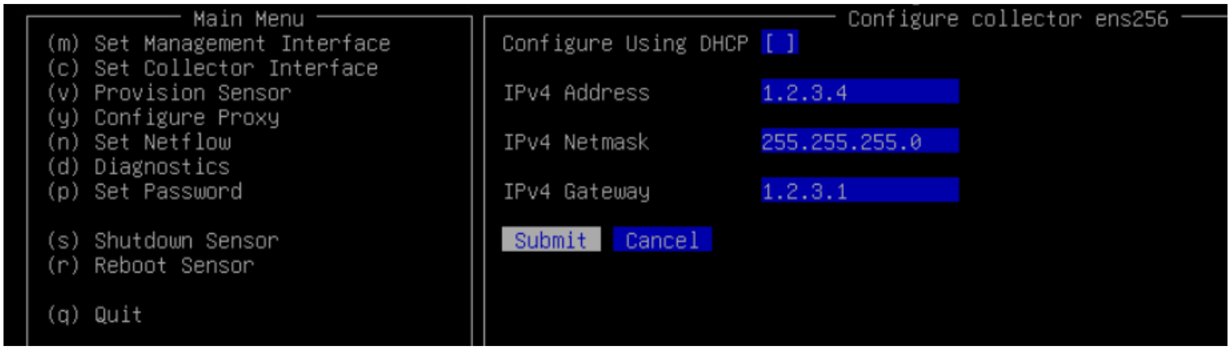


```
        Main Menu                     Configure collector ens256
(m) Set Management Interface    Configure Using DHCP [X]
(c) Set Collector Interface
(v) Provision Sensor            IPv4 Address
(y) Configure Proxy
(n) Set Netflow                 IPv4 Netmask
(d) Diagnostics
(p) Set Password                IPv4 Gateway

(s) Shutdown Sensor             Submit  Cancel
(r) Reboot Sensor

(q) Quit
```

3. To configure a static IP on collector interface:

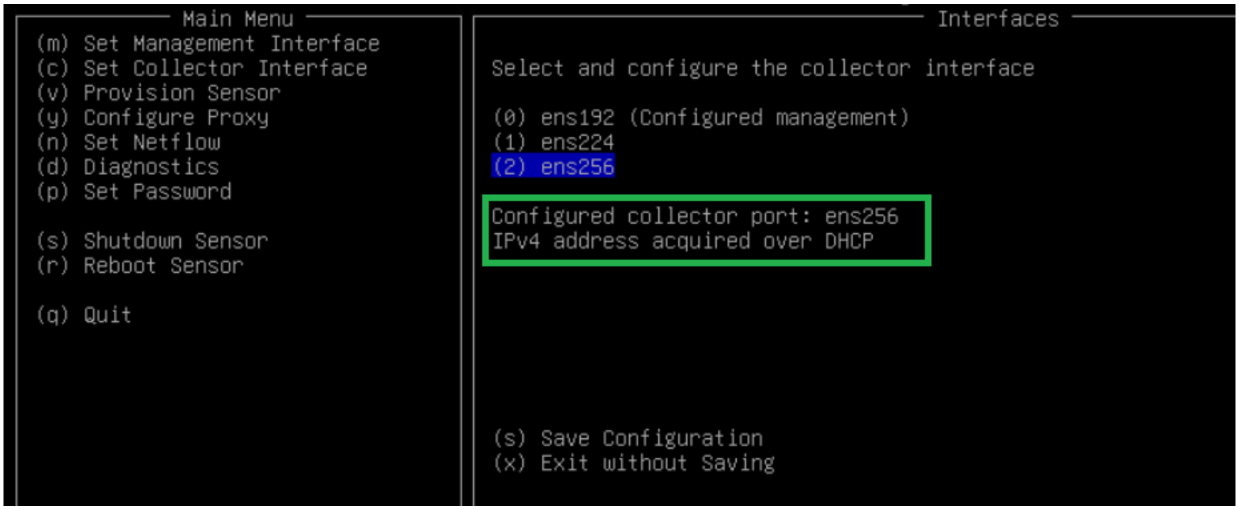
a. Uncheck the DHCP by pressing the space bar.

b. Enter the desired *Address*, *Netmask*, and default *Gateway*.



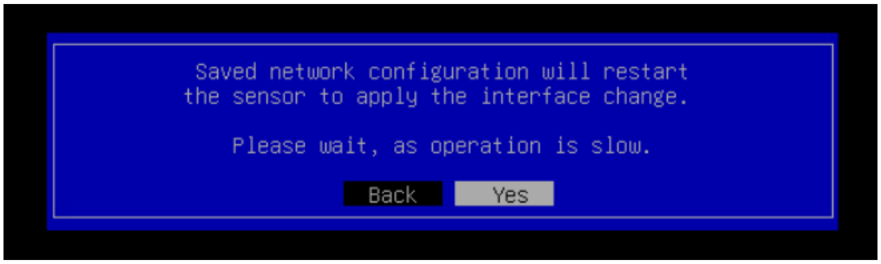
```
 Main Menu                              Configure collector ens256
(m) Set Management Interface     Configure Using DHCP [ ]
(c) Set Collector Interface
(v) Provision Sensor             IPv4 Address         1.2.3.4
(y) Configure Proxy
(n) Set Netflow                  IPv4 Netmask         255.255.255.0
(d) Diagnostics
(p) Set Password                 IPv4 Gateway         1.2.3.1

(s) Shutdown Sensor              Submit  Cancel
(r) Reboot Sensor

(q) Quit
```

4. The menu will redirect to the *Interfaces* section with the collector interface reflecting your settings.



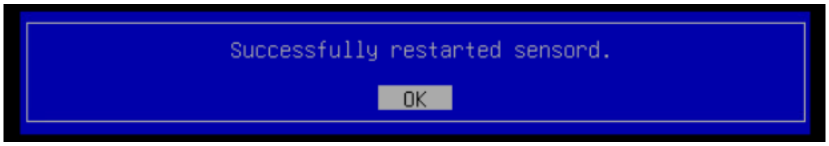
```
 Main Menu                                        Interfaces
(m) Set Management Interface
(c) Set Collector Interface      Select and configure the collector interface
(v) Provision Sensor
(y) Configure Proxy              (0) ens192 (Configured management)
(n) Set Netflow                  (1) ens224
(d) Diagnostics                  (2) ens256
(p) Set Password
                                 Configured collector port: ens256
(s) Shutdown Sensor              IPv4 address acquired over DHCP
(r) Reboot Sensor

(q) Quit




                                 (s) Save Configuration
                                 (x) Exit without Saving
```

a. Select *Save Configuration*. A confirmation dialog box will appear, requesting a sensor restart to apply the interface changes. Select *Yes* to proceed with the restart.



```
   Saved network configuration will restart
 the sensor to apply the interface change.

      Please wait, as operation is slow.

              Back      Yes
```

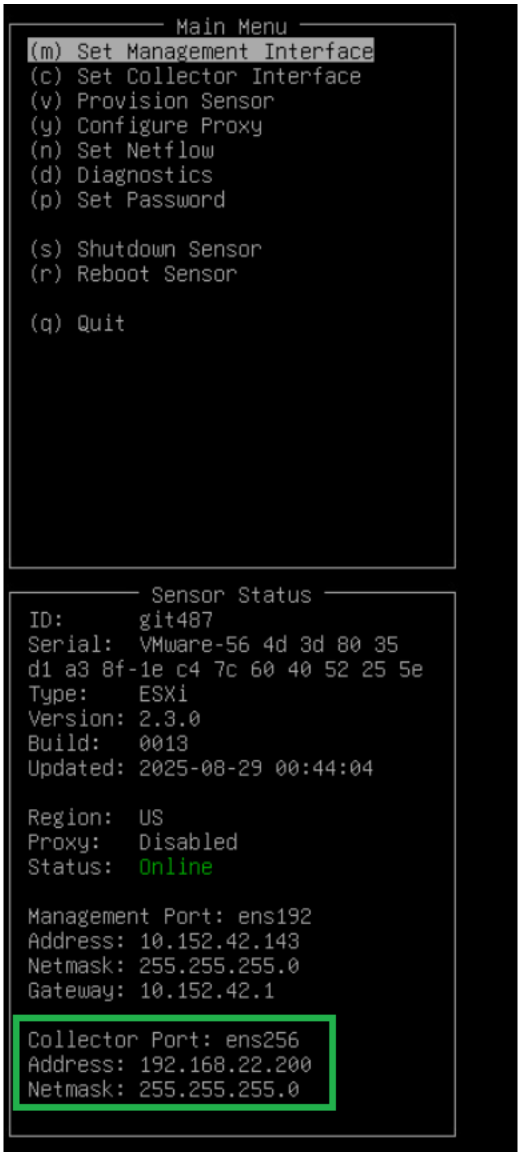
b. Wait a few minutes until the restart completes and the message *Successfully restarted sensord*".



```
   Successfully restarted sensord.

              OK
```

c. Press *Enter* to return to the main menu

The collector IP address will now appear in the TUI. Allow a few minutes for the sensor to update its status to *Online*.

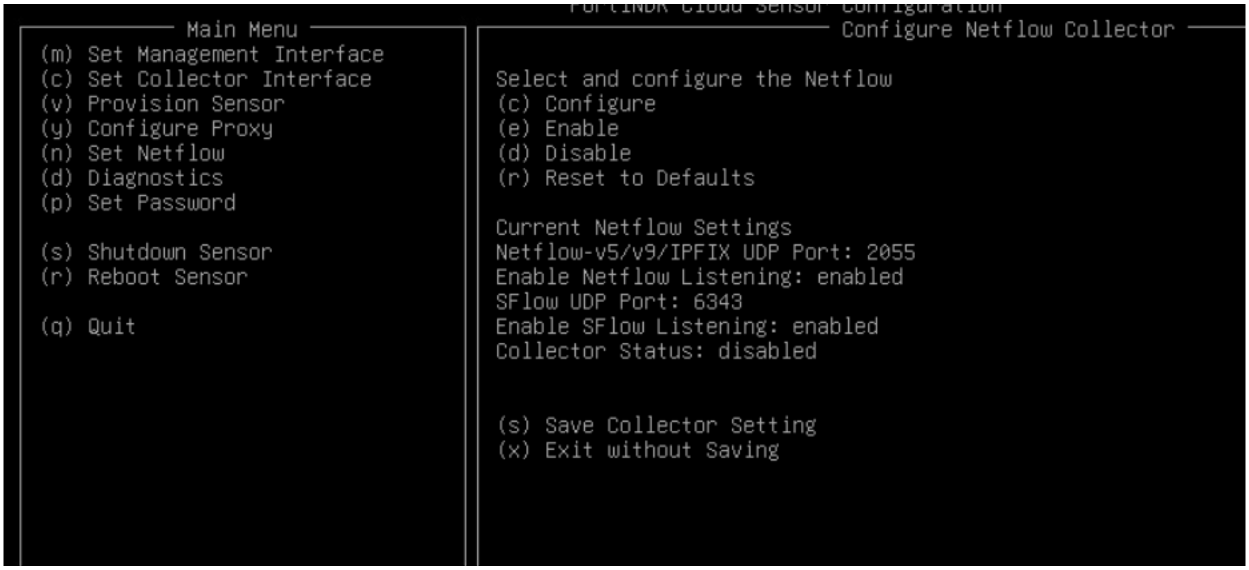


```
                  Main Menu
 (m) Set Management Interface
 (c) Set Collector Interface
 (v) Provision Sensor
 (y) Configure Proxy
 (n) Set Netflow
 (d) Diagnostics
 (p) Set Password

 (s) Shutdown Sensor
 (r) Reboot Sensor

 (q) Quit

                Sensor Status
 ID:      git487
 Serial:  VMware-56 4d 3d 80 35
 d1 a3 8f-1e c4 7c 60 40 52 25 5e
 Type:    ESXi
 Version: 2.3.0
 Build:   0013
 Updated: 2025-08-29 00:44:04

 Region:  US
 Proxy:   Disabled
 Status:  Online

 Management Port: ens192
 Address: 10.152.42.143
 Netmask: 255.255.255.0
 Gateway: 10.152.42.1

 Collector Port: ens256
 Address: 192.168.22.200
 Netmask: 255.255.255.0
```

3. Enable the Netflow collector engine

To enable the collector engine:

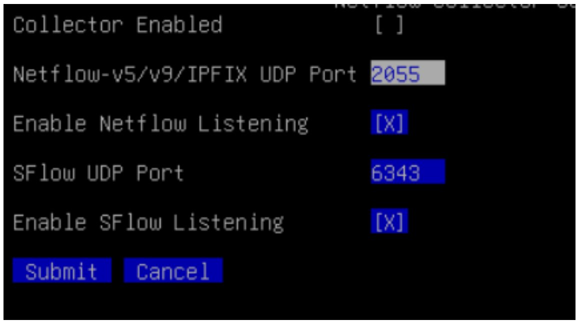
1. From the sensor config menu, select *Set Netflow* (or press n).



```
                                  FortiNDR Cloud Sensor Configuration
 ─────────── Main Menu ───────────  ──────────────────────────── Configure Netflow Collector ────
  (m) Set Management Interface
  (c) Set Collector Interface        Select and configure the Netflow
  (v) Provision Sensor               (c) Configure
  (y) Configure Proxy                (e) Enable
  (n) Set Netflow                    (d) Disable
  (d) Diagnostics                    (r) Reset to Defaults
  (p) Set Password
                                     Current Netflow Settings
  (s) Shutdown Sensor                Netflow-v5/v9/IPFIX UDP Port: 2055
  (r) Reboot Sensor                  Enable Netflow Listening: enabled
                                     SFlow UDP Port: 6343
  (q) Quit                           Enable SFlow Listening: enabled
                                     Collector Status: disabled


                                     (s) Save Collector Setting
                                     (x) Exit without Saving
```

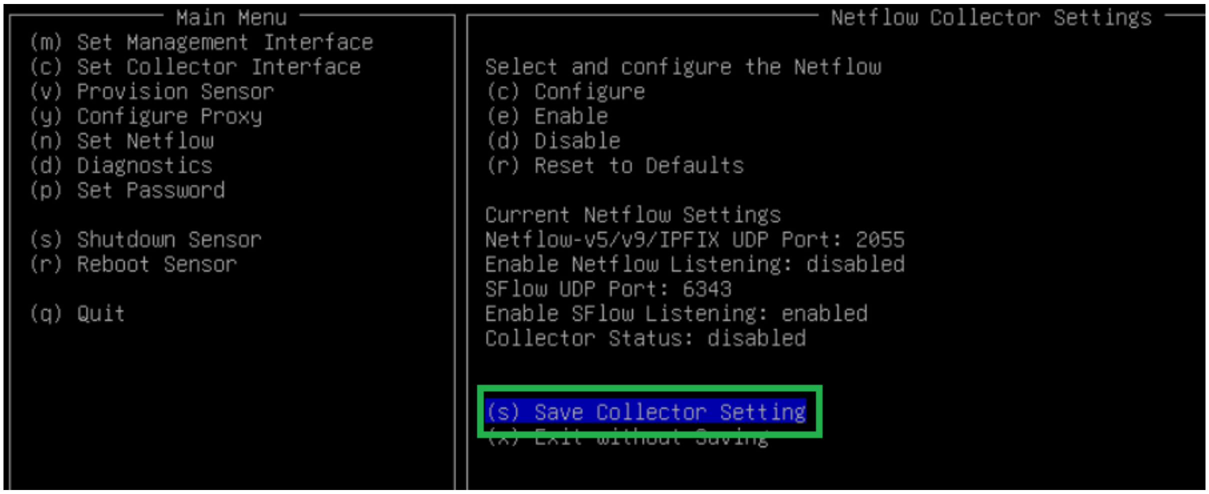
2. Review the default NetFlow settings.
   - UDP/2055: Netflow v5, v9, IPFIX
   - UDP/6343: SFlow

   a. If changes are required, select *Configure* (press c), adjust the port or listening status, and select *Submit*.



```
                                        Netflow Collector Se
 Collector Enabled                     [ ]

 Netflow-v5/v9/IPFIX UDP Port          2055

 Enable Netflow Listening              [X]

 SFlow UDP Port                        6343

 Enable SFlow Listening                [X]

 Submit   Cancel
```

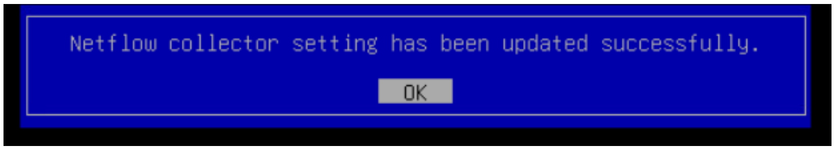
   b. The menu will redirect back to the *Set Netflow* menu. To save changes, select *Save Collector Setting* (press s).



```
Main Menu
(m) Set Management Interface
(c) Set Collector Interface
(v) Provision Sensor
(y) Configure Proxy
(n) Set Netflow
(d) Diagnostics
(p) Set Password

(s) Shutdown Sensor
(r) Reboot Sensor

(q) Quit
```

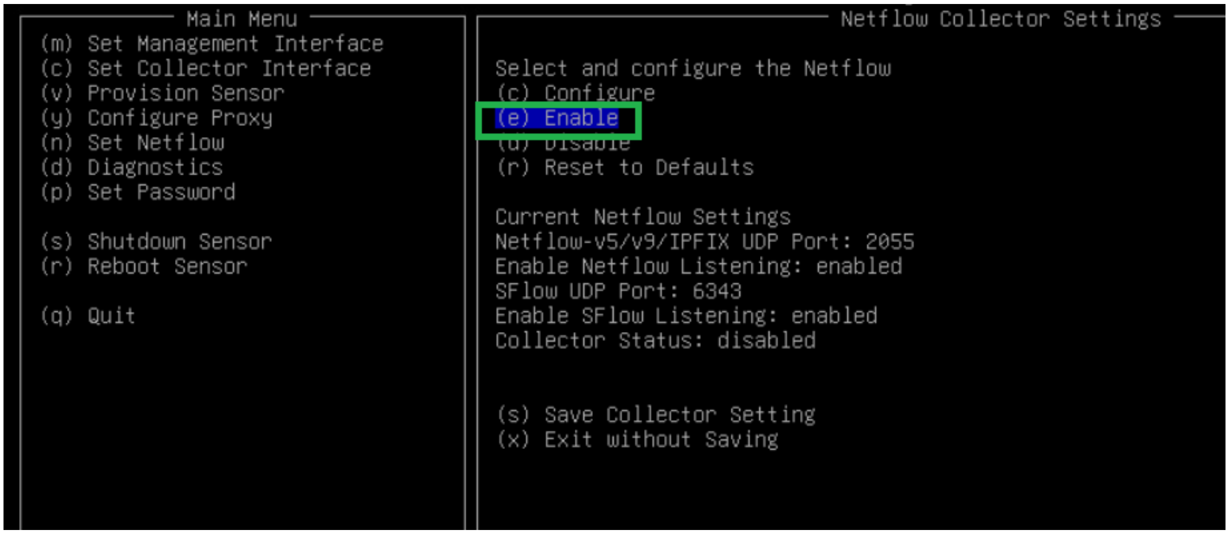
```
Netflow Collector Settings

Select and configure the Netflow
(c) Configure
(e) Enable
(d) Disable
(r) Reset to Defaults

Current Netflow Settings
Netflow-v5/v9/IPFIX UDP Port: 2055
Enable Netflow Listening: disabled
SFlow UDP Port: 6343
Enable SFlow Listening: enabled
Collector Status: disabled


(s) Save Collector Setting
(x) Exit without Saving
```

c. A message will be displayed indicating settings are saved successfully. Press *Enter* to go back to the *Set Netflow* menu.



```
Netflow collector setting has been updated successfully.

                          OK
```

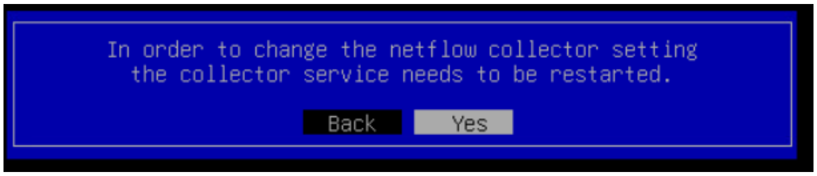
3. From the *Set Netflow* menu, select *Enable* (press e) to start the NetFlow collector engine.



```
Main Menu
(m) Set Management Interface
(c) Set Collector Interface
(v) Provision Sensor
(y) Configure Proxy
(n) Set Netflow
(d) Diagnostics
(p) Set Password

(s) Shutdown Sensor
(r) Reboot Sensor

(q) Quit
```

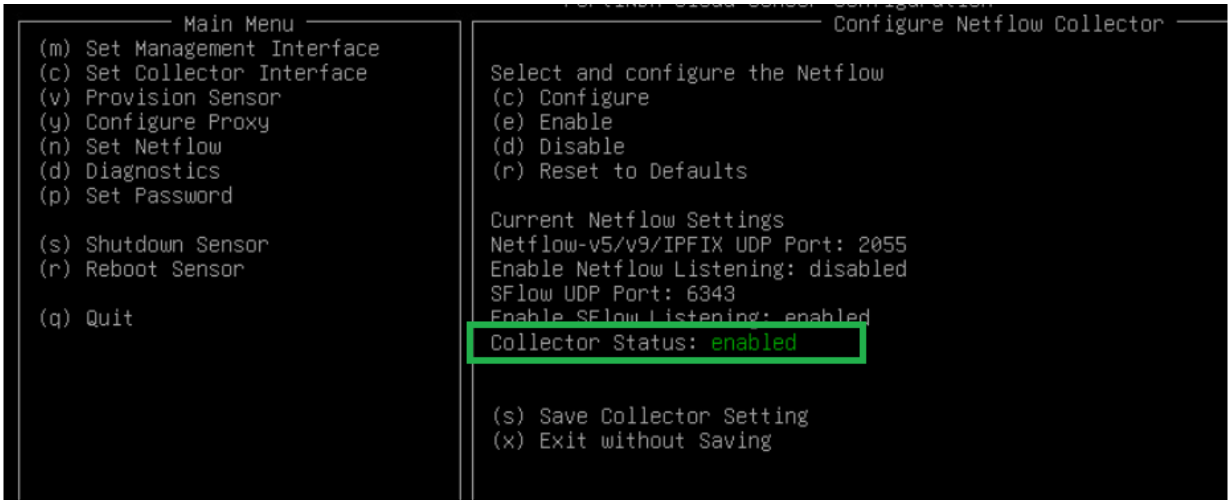
```
Netflow Collector Settings

Select and configure the Netflow
(c) Configure
(e) Enable
(d) Disable
(r) Reset to Defaults

Current Netflow Settings
Netflow-v5/v9/IPFIX UDP Port: 2055
Enable Netflow Listening: enabled
SFlow UDP Port: 6343
Enable SFlow Listening: enabled
Collector Status: disabled


(s) Save Collector Setting
(x) Exit without Saving
```

a. A confirmation dialog box will appear, requesting a restart of collector service. Select *Yes* to proceed with the restart.



```
In order to change the netflow collector setting
 the collector service needs to be restarted.

              Back       Yes
```

b. After a few minutes, the status will appear as *Enabled* (in green).



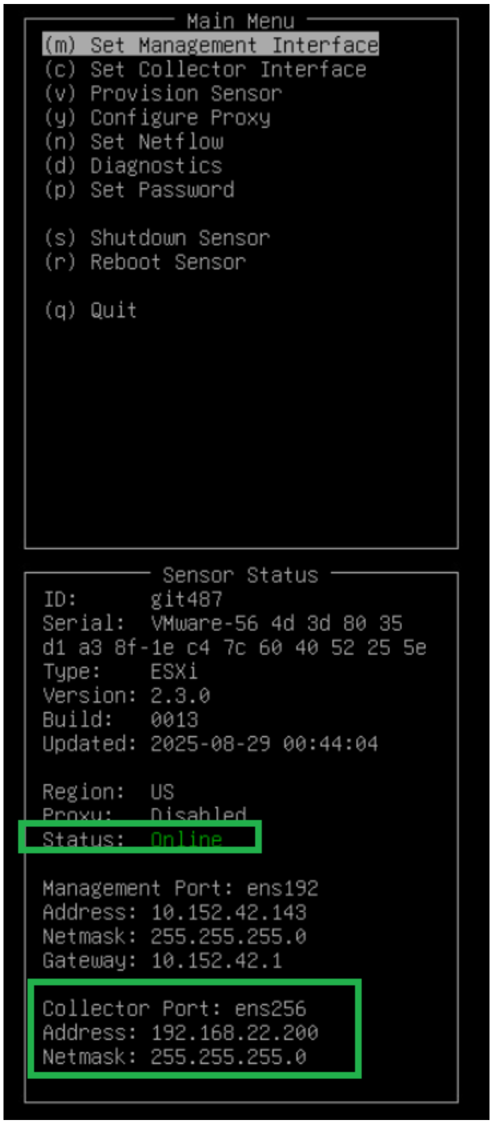
```
                                FortiNDR Cloud Sensor Configuration
┌──────────── Main Menu ────────────┐ ┌──────────────────────────── Configure Netflow Collector ──
│ (m) Set Management Interface      │ │
│ (c) Set Collector Interface       │ │ Select and configure the Netflow
│ (v) Provision Sensor              │ │ (c) Configure
│ (y) Configure Proxy               │ │ (e) Enable
│ (n) Set Netflow                   │ │ (d) Disable
│ (d) Diagnostics                   │ │ (r) Reset to Defaults
│ (p) Set Password                  │ │
│                                   │ │ Current Netflow Settings
│ (s) Shutdown Sensor               │ │ Netflow-v5/v9/IPFIX UDP Port: 2055
│ (r) Reboot Sensor                 │ │ Enable Netflow Listening: disabled
│                                   │ │ SFlow UDP Port: 6343
│ (q) Quit                          │ │ Enable SFlow Listening: enabled
│                                   │ │ Collector Status: enabled
│                                   │ │
│                                   │ │
│                                   │ │ (s) Save Collector Setting
│                                   │ │ (x) Exit without Saving
```

4. **Important**: The first time NetFlow is enabled, a full sensor reboot may be required. Select *Reboot Sensor* (press r) to reboot. Select *Yes* to proceed with the reboot

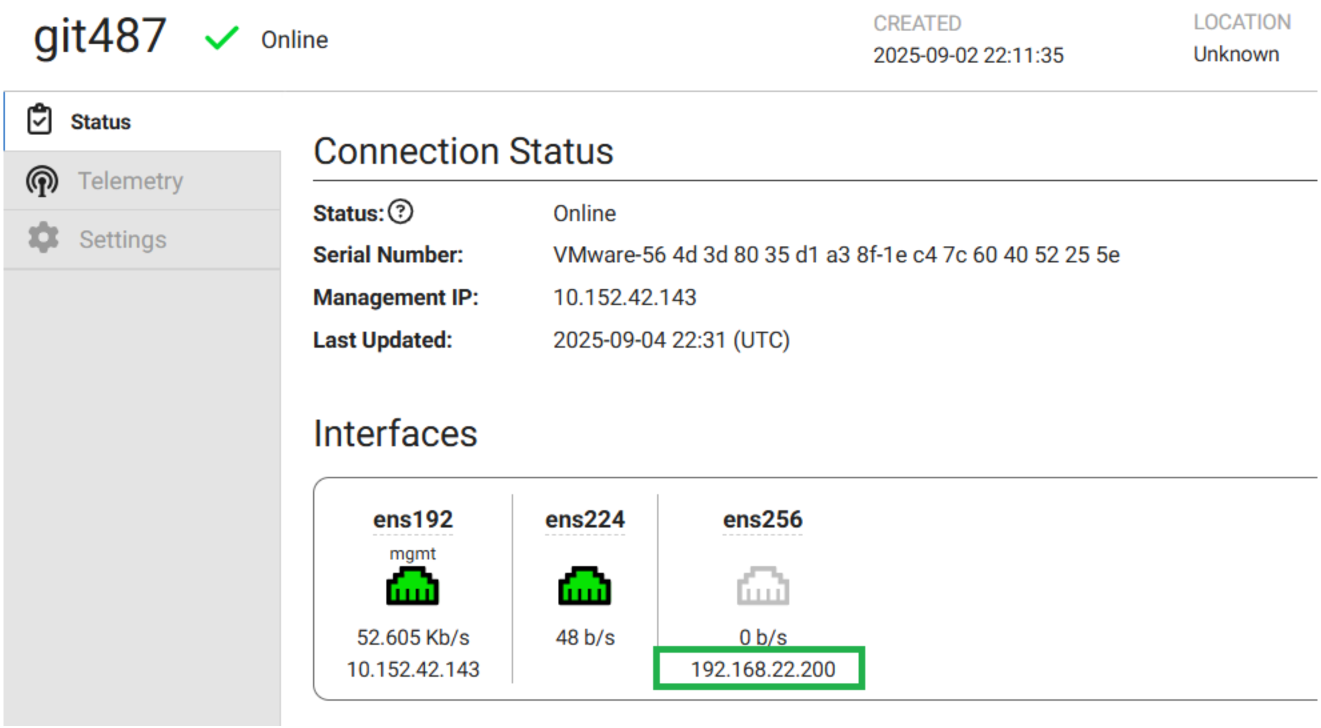
Verifications

Once the sensor is back online, it is ready to receive and process NetFlow data.

The *collector IP address* will also be visible in the FortiNDR Cloud portal.



```
Main Menu
(m) Set Management Interface
(c) Set Collector Interface
(v) Provision Sensor
(y) Configure Proxy
(n) Set Netflow
(d) Diagnostics
(p) Set Password

(s) Shutdown Sensor
(r) Reboot Sensor

(q) Quit

Sensor Status
ID:      git487
Serial:  VMware-56 4d 3d 80 35
d1 a3 8f-1e c4 7c 60 40 52 25 5e
Type:    ESXi
Version: 2.3.0
Build:   0013
Updated: 2025-08-29 00:44:04

Region:  US
Proxy:   Disabled
Status:  Online

Management Port: ens192
Address: 10.152.42.143
Netmask: 255.255.255.0
Gateway: 10.152.42.1

Collector Port: ens256
Address: 192.168.22.200
Netmask: 255.255.255.0
```



git487 ✓ Online

CREATED
2025-09-02 22:11:35

LOCATION
Unknown

Connection Status

Status: Online
Serial Number: VMware-56 4d 3d 80 35 d1 a3 8f-1e c4 7c 60 40 52 25 5e
Management IP: 10.152.42.143
Last Updated: 2025-09-04 22:31 (UTC)

Interfaces

ens192 (mgmt)	ens224	ens256
52.605 Kb/s	48 b/s	0 b/s
10.152.42.143		192.168.22.200

Zscaler ingestion

Zscaler ingestion provides FNDRC with remote access activity logs. When enabled, FortiNDR Cloud can identify threats impacting remote users. FortiNDR Cloud users can use the detection data to conduct investigations and entity searches to identify the threat source and mitigate attacks on the network.

- Zscaler setup on page 164
- Zscaler events on page 167

Zscaler setup

Cloud NSS

Zscaler Cloud NSS is a managed service from Zscaler. When using Cloud NSS, you do not need to deploy the NSS Virtual Machines. Cloud NSS sends logs to a HTTP endpoint or an S3 bucket. The integration with FortiNDR is through the S3 bucket path. Check with your Zscaler Account team to ensure you have this subscription enabled.

Cloud NSS Setup for S3

Ensure that you have the following to configure Zscaler Cloud NSS. Contact Fortinet Support to obtain these values.

- AWS Access Id
- AWS Secret Key
- S3 Folder URL

Using S3 requires the correct set of permissions and configuration. To learn more, see the Zscaler and S3 Deployment Guide, section Zscaler Cloud NSS with Amazon S3, on setting up S3 to work with Cloud NSS.

Configuring Cloud NSS for Web Logs

The following configuration information was adapted from the *Zscaler and Fortinet Deployment Guide*.

To configure Cloud NSS for Web Logs:

1. Log in as an administrator and go to *Administration > Nanolog Streaming Service*.
2. Go to *Cloud NSS Feeds* and click *Add Cloud NSS Feed*.
3. In the *Add Cloud NSS Feed* dialog, configure the following:

Feed Name	Enter a Feed Name.
NSS Type	Select *NSS for Web*.
Status	*Enabled*
SIEM Rate	*Unlimited*
SIEM Type	*S3*
AWS Access Id	Enter the access ID.
AWS Secret Key	Enter the secret key.
S3 Folder URL	Enter the folder URL.
HTTP Headers	Enter a dummy HTTP key and value pair. This is required.
Log Type	Select *Web Log*.
Feed Output Type	Select *Custom*.
Feed Escape Character	Enter `,\"`

Feed Output Format	zscaler_log_type=web\ttimestamp=%d{yyyy}-%02d{mth}-%02d{dd}T%02d{hh}:%02d{mm}:%02d{ss} Z\tzscaler_recordid=%d{recordid}\tzscaler_proto=%s{proto}\tsrc_ip=%s{cip}\tdst_ip=%s{sip}\tstatus_code=%s{respcode}\tmethod=%s{reqmethod}\tuser_agent=%s{ua}\ treferrer=%s{ereferer}\trequest_length=%d{reqsize}\tresponse_length=%d{resp- size}\turi=%s{eurl}\tfile_md5=%s{bamd5}\tcontent_type=%s{contenttype}\tclient_ci- pher=%s{clientsslcipher}\tclient_version=%s{clienttlsversion}\tserver_cipher=%s{s- rvsslcipher}\tserver_version=%s{srvtlsversion}\tzscaler_username=%s{login}\tzscaler_hostname=%s{devicehostname}

Configuring Cloud NSS for Firewall Logs

To configure Firewall logs, follow the steps in Configuring Cloud NSS for Web Logs on page 165 with the following exceptions.

NSS Type	Select *NSS for Firewall*.
Log Type	Select *Firewall Logs*.
Firewall Log Type	Both Session and Aggregate Logs
Feed Output Format	zscaler_log_type=firewall\ttimestamp=%d{yyyy}-%02d{mth}-%02d{dd}T%02d{hh}:%02d{mm}:%02d{ss}Z\tzscaler_recordid=%d{recordid}\tsrc_ip=%s{c- sip}\tsrc_port=%d{csport}\tdst_ip=%s{cdip}\tdst_port=%d{cdport}\tdura- tion=%d{durationms}\tprotocol=%s{ipproto}\tservice=%s{nwsvc}\trequest_bytes=%ld{outbytes}\tresponse_bytes=%ld{inbytes}\tzscaler_username=%s{login}\

Configuring Cloud NSS for DNS Logs

To configure DNS logs, follow the steps in Configuring Cloud NSS for Web Logs on page 165 with the following exceptions.

NSS Type	Select *NSS for Firewall*.
Log Type	Select *DNS Logs*.
Feed Output Format	zscaler_log_type=dns\ttimestamp=%d{yyyy}-%02d{mth}-%02d{dd}T%02d{hh}:%02d{mm}:%02d{ss} Z\tzscaler_recordid=%d{recordid}\tsrc_ip=%s{cip}\tdst_ip=%s{sip}\tdst_port=%d{sport}\ tquery=%s{req}\tqtype_name=%s{reqtype}\tresponse=%s{res}\tzscaler_username=%s{login}\

Zscaler events

Zscaler logs are mapped to the following FortiNDR Cloud event types. Events from Zscaler can be identified by `source="Zscaler"`.

- DNS
- Flow
- HTTP
- SSL

DNS

Field	Comments
answers	Zscaler provides a single answer.
qtype	This is derived from `qtype_name`, so it may be missing for unexpected values.
rcode	This is derived from `rcode_name`, so it may be missing for unexpected values.
rcode_name	Zscaler also uses this as an error field, so it may contain unexpected values that are passed through.
src.ip	

Flow

Field	Comments
dst.ip	
dst.ip_bytes	
dst.port	
duration	
proto	The values are mostly passed through from Zscaler. Some values will match and others will not.
service	The values are mostly passed through from Zscaler. Some values will match and others will not.
src.ip	
src.ip_bytes	
src.port	

Field	Comments
total_ip_bytes	
upload_percent	

HTTP

Field	Comments
headers.content_type	Zscaler may be translating some values into human-readable forms (for example, *Flash*).
method	Zscaler provides a value of *CONNECT* for *HTTPS*.
referrer	Zscaler does not provide the scheme (for example., `http://`).
request_len	
response_len	
src.ip	
status_code	
uri	
user_agent	

SSL

Every HTTPS request will have both an HTTP and SSL event. SSL events are only available for HTTPS. Also, Zscaler documentation suggests that it can be configured to intercept SSL. In that case, the cipher and version field represents the server, which may be different from the values for the client.

Field	Comments
cipher	Zscaler values are passed through without conversion.
dst.ip	
src.ip	
server_name	
server_name_indication	
version	Zscaler values are converted, but unexpected values will be passed through.

Sensor provisioning

FortiNDR Cloud sensors are self-provisioning appliances that require a registration code from the portal.

To provision a sensor:

1. Generate a registration code on page 169
2. Register a sensor on page 170

Once these steps are complete, the sensor will call home, provision itself, and then be ready to ingest raw mirrored traffic. By default, a sensor will use DHCP but a static IP address can be set if desired.

FortiNDR Cloudsupports unlimited sensors. For deployments involving more than 10 sensors, we recommend customers work with their TSM to ensure best practices are followed and the configuration is optimized.

Generate a registration code

Registration codes can be generated on the *Sensors* page\ within FortiNDR Cloud. If you do not have access to this page, please contact your Fortinet representative.

- Codes expire 24 hours after creation
- Codes may be used to provision multiple sensors prior to expiration
- Codes work for both physical and virtual sensors
- Each account is limited to ten (10) sensors by default. To expand this limit, contact your Technical Success Manager

To generate a registration code:

1. Click the *Settings* icon at the top right of the page and select Senors. The *Sensors* page opens.

   ⚙

2. In the toolbar, click , *Actions* > *Provision Sensor*. The *New Registration Code* dialog displays a randomly generated registration code prepended with the sensor code for its respective account.
3. If you have access to multiple accounts, verify that the generated code begins with the three- letter sensor code of the proper account.
4. Register the sensor.

Be sure to write the code down or copy it locally as it will not be shown again after the pop-up box is closed. If you accidentally close the pop-up box before copying down the code, simply generate another code.

Register a sensor

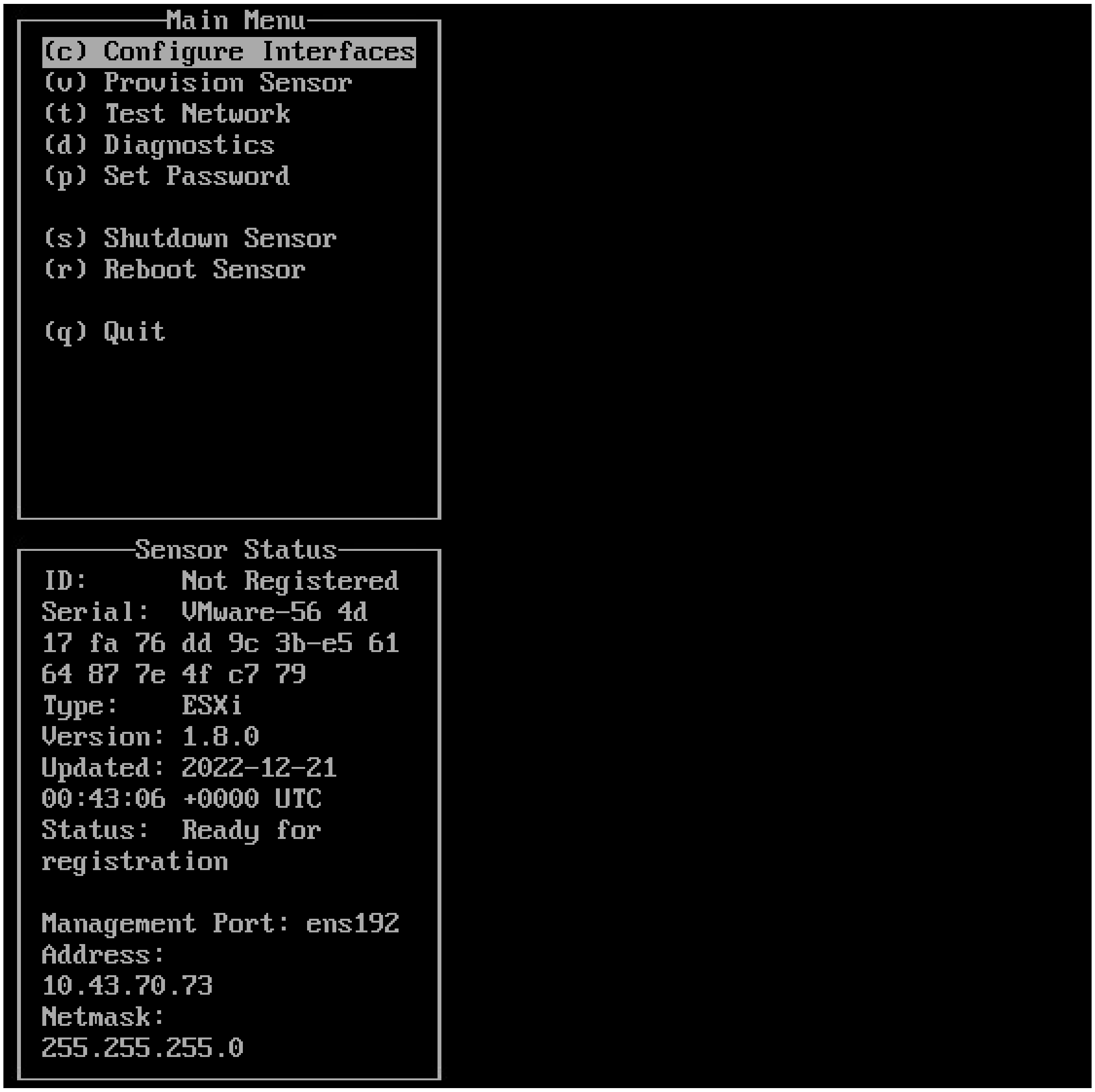
Registering the sensor takes place within the sensor console. Once registered, the sensor will call home, provision itself, and then be ready to ingest raw mirrored traffic.

See **Verifying Network Connectivity** to troubleshoot connectivity issues.

Registering a sensor requires an Internet connection. =Please ensure that the appliance is connected before proceeding.

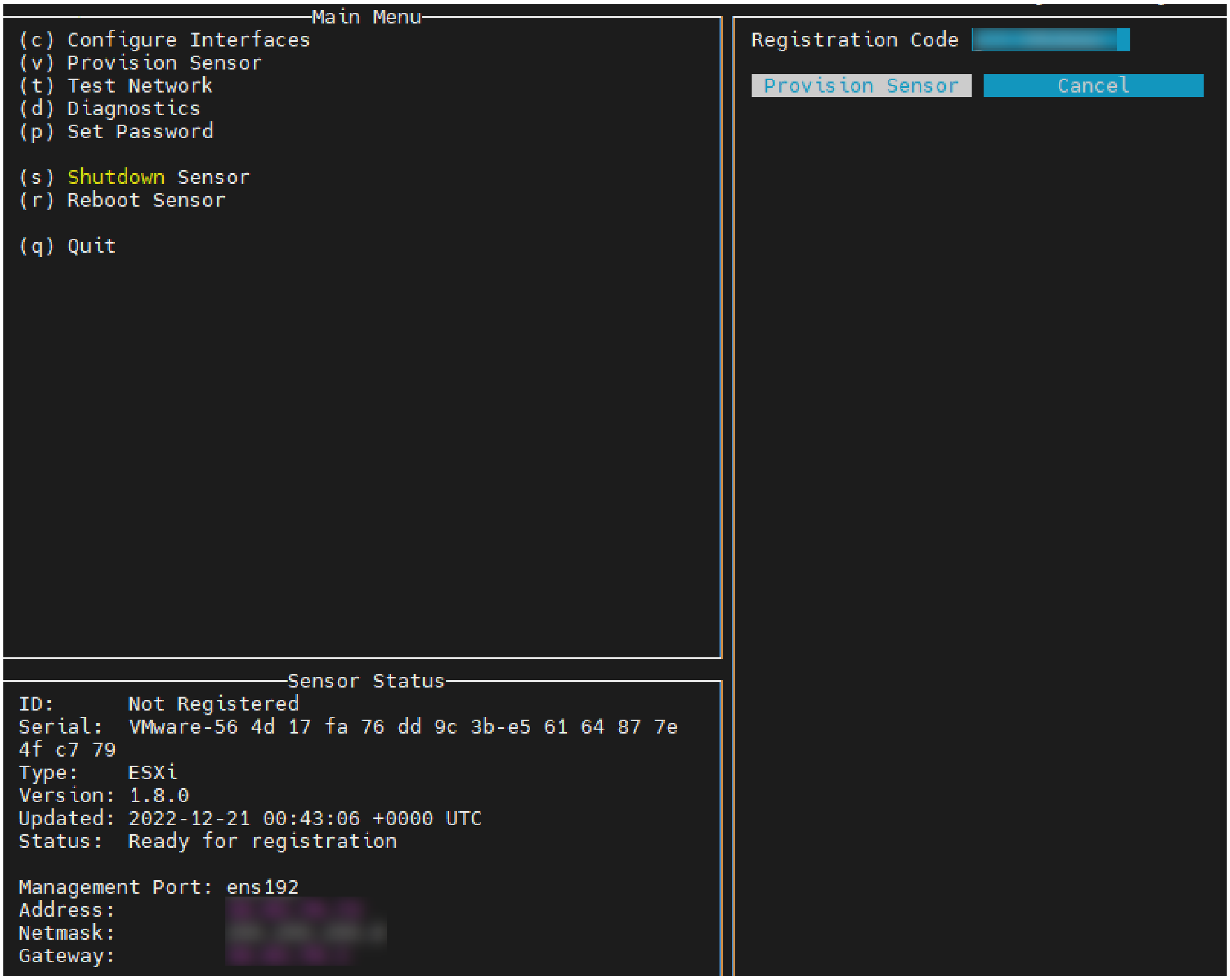
To register a sensor:

1. Log in to the sensor console.
2. Select *Provision Sensor* or type v.



```
Main Menu
(c) Configure Interfaces
(v) Provision Sensor
(t) Test Network
(d) Diagnostics
(p) Set Password

(s) Shutdown Sensor
(r) Reboot Sensor

(q) Quit

Sensor Status
ID:      Not Registered
Serial:  VMware-56 4d
17 fa 76 dd 9c 3b-e5 61
64 87 7e 4f c7 79
Type:    ESXi
Version: 1.8.0
Updated: 2022-12-21
00:43:06 +0000 UTC
Status:  Ready for
registration

Management Port: ens192
Address:
10.43.70.73
Netmask:
255.255.255.0
```

3. Enter the registration code in the text box. See Generate a registration code on page 169.



```
Main Menu                                        Registration Code [redacted]
(c) Configure Interfaces
(v) Provision Sensor                             Provision Sensor    Cancel
(t) Test Network
(d) Diagnostics
(p) Set Password

(s) Shutdown Sensor
(r) Reboot Sensor

(q) Quit

Sensor Status
ID:      Not Registered
Serial:  VMware-56 4d 17 fa 76 dd 9c 3b-e5 61 64 87 7e
4f c7 79
Type:    ESXi
Version: 1.8.0
Updated: 2022-12-21 00:43:06 +0000 UTC
Status:  Ready for registration

Management Port: ens192
Address:
Netmask:         [redacted]
Gateway:
```

4. Select *Provision Sensor* to begin the registration process. The `Status` changes to `Sensor is provisioning`.
5. Wait for the `Status` to change to `Online`.

Troubleshooting

To troubleshoot connectivity issues:

1. Go to *Settings > Sensors*.
2. Click *Visible Devices*.
3. Next to *View*, click *Over Time*.

FortiNDR Cloud Integrations

FortiNDR Cloud natively supports integrations with multiple security tools and intelligence feeds. It also provides an open framework for creating custom integrations.

The following integrations are currently supported:

SIEM	• CrowdStrike • FortiSIEM • Microsoft Sentinel • QRadar • Splunk
SOAR	• Cortex-XSOAR • FortiSOAR • Splunk SOAR
EDR / Firewall	• CrowdStrike • FortiEDR • FortiManager
Intelligence Feeds	• CrowdStrike Intel • Proofpoint TAP • Recorded Future Connect • Threat Connect
Other	• Endace

For additional integrations, the SIEM/SOAR integration guide contains details for integrating with other tools. See, SIEM and SOAR Integration Guide.

For network data ingestion, FortiNDR Cloud supports hardware sensors as well as virtual sensors on various platforms, including AWS and ESXi.

- AWS Sensor Installation Guide
- ESXi Sensor Installation Guide
- Azure Sensor Installation Guide

FortiNDR Cloud also supports ingesting NSS log data from Zscaler. See, Zscaler ingestion on page 164.

Automated integration response

Automated integration response modules are available for FortiEDR and CrowdStrike Falcon EDR. Only a single integration can be set to *Auto-Remediate* at a time; others may be configured, but must be set up to respond manually.

FortiNDR Cloud APIs

FortiNDR Cloud API documentation is available on the Fortinet Developer Network (FNDN).

Available APIs

- **Entity API**: Obtain details on individual entities such as IPs, domains, file hashes. This API supports providing details on an entity such as DHCP and DNS information and when it was first and last seen. For information about Entities, see Entity Panel on page 43.
- **Detections AP**I: Provides details on malicious events that were detected. SeeDetections on page 25
- **Sensor API**: Provides APIs for interacting with sensors.
- **Investigations API**: APIs for managing investigations and running queries.

Metastream

FortiNDR Cloud also provides access to the most recent seven days of events on Metastream. A python client is available to facilitate interacting with the most used events.

- Metastream documentation is available on the Fortinet Developer Network (FNDN).
- Client library documentation is available in the Document library. See, FNC Python Client Library.

IQL reference guide

Internal Query Language (IQL) is used in FortiNDR Cloud for identifying, querying, filtering, and analyzing various network events such as *flow*, *HTTP*, *and* SSL events. It supports detections, behavioral observations, guided queries, and investigations. The results of an IQL query include enriched events, which are enhanced with intelligence indicator matches from FortiNDR Cloud's threat intelligence database. Additionally, IP enrichments such as ASN, internal/external status, and geographical attributes are included to provide comprehensive insights into network activities.

Purpose of this reference guide

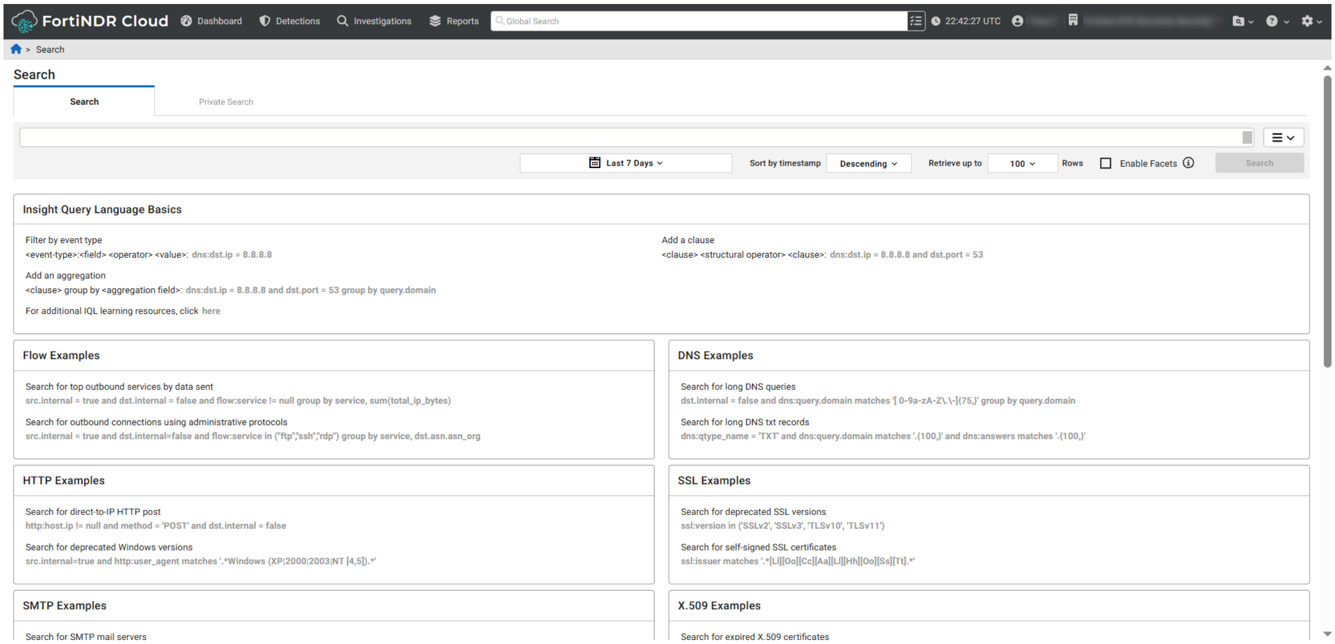
This reference guide is intended as an introduction to creating IQL queries in FortiNDR Cloud. Where possible, we have provided example queries and short exercises to help you get started.

Using guided queries

If this is your first time creating queries, we recommend running a few Guided Queries to start. These will help familiarize you with query strings and their results. You can also use the results to add new queries to experiment with. For more information, see Guided queries on page 105.

Sample queries

The portal also offers a library of sample queries for common searches. To access these samples, log into the portal and navigate to *Investigations > Private Search*.



Insight Query Language Basics

Filter by event type
<event-type>:<field> <operator> <value>: dns:dst.ip = 8.8.8.8

Add a clause
<clause> <structural operator> <clause>: dns:dst.ip = 8.8.8.8 and dst.port = 53

Add an aggregation
<clause> group by <aggregation field>: dns:dst.ip = 8.8.8.8 and dst.port = 53 group by query.domain

For additional IQL learning resources, click here

Flow Examples

Search for top outbound services by data sent
src.internal = true and dst.internal = false and flow:service != null group by service, sum(total_ip_bytes)

Search for outbound connections using administrative protocols
src.internal = true and dst.internal=false and flow:service in ("ftp","ssh","rdp") group by service, dst.asn.asn_org

DNS Examples

Search for long DNS queries
dst.internal = false and dns:query.domain matches '[0-9a-zA-Z\.\-]{75,}' group by query.domain

Search for long DNS txt records
dns:qtype_name = 'TXT' and dns:query.domain matches '.{100,}' and dns:answers matches '.{100,}'

HTTP Examples

Search for direct-to-IP HTTP post
http:host.ip != null and method = 'POST' and dst.internal = false

Search for deprecated Windows versions
src.internal=true and http:user_agent matches '.*Windows (XP|2000|2003|NT [4,5]).*'

SSL Examples

Search for deprecated SSL versions
ssl:version in ('SSLv2', 'SSLv3', 'TLSv10', 'TLSv11')

Search for self-signed SSL certificates
ssl:issuer matches '.*[Ll][Oo][Cc][Aa][Ll][Hh][Oo][Ss][Tt].*'

SMTP Examples

Search for SMTP mail servers

X.509 Examples

Search for expired X.509 certificates

Core IQL concepts

IQL Clause

IQL clauses follow the format `<field> <operator> <value>` and can be combined using logical operators like `AND` and `OR`. Parentheses can be used to control the order of these logical operators in a query.

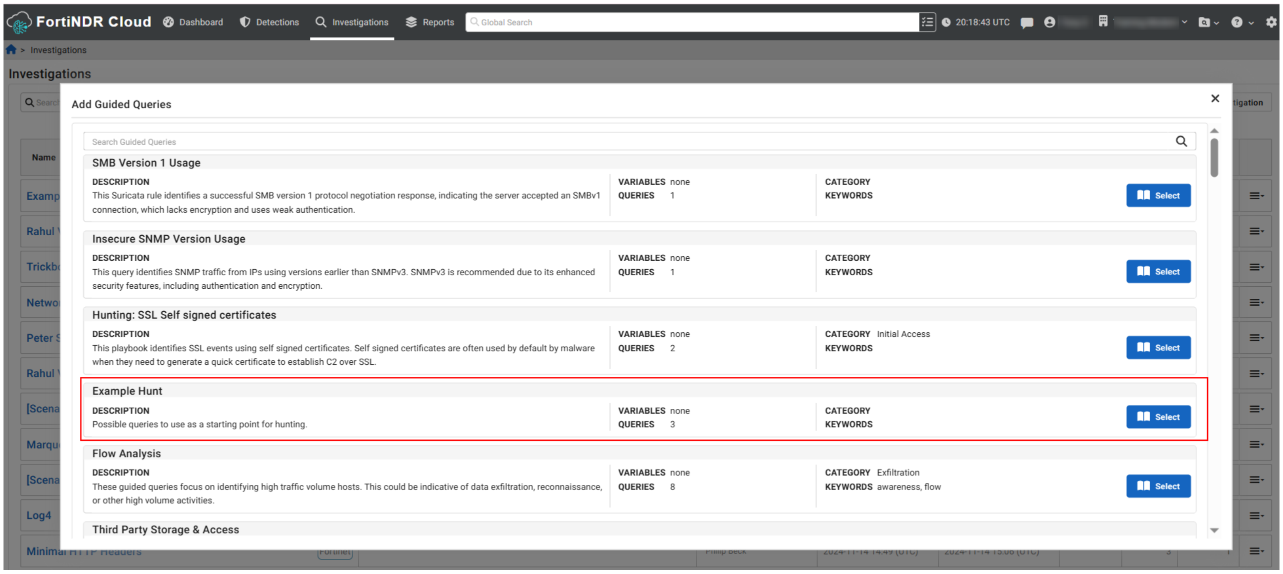
Example:

```
ip = 8.8.8.8 AND host LIKE "%.google.com".
```

<field>	`ip = 8.8.8.8`
<operator>	`AND host LIKE`
<value>	`"%.google.com"`

Exercise:

1. Go to *Investigations* > *Guided Queries*.
2. Run the *Example Hunt* query. For more information, see Guided queries on page 105



Add Guided Queries

SMB Version 1 Usage
DESCRIPTION
This Suricata rule identifies a successful SMB version 1 protocol negotiation response, indicating the server accepted an SMBv1 connection, which lacks encryption and uses weak authentication.
VARIABLES none
QUERIES 1
CATEGORY
KEYWORDS
Select

Insecure SNMP Version Usage
DESCRIPTION
This query identifies SNMP traffic from IPs using versions earlier than SNMPv3. SNMPv3 is recommended due to its enhanced security features, including authentication and encryption.
VARIABLES none
QUERIES 1
CATEGORY
KEYWORDS
Select

Hunting: SSL Self signed certificates
DESCRIPTION
This playbook identifies SSL events using self signed certificates. Self signed certificates are often used by default by malware when they need to generate a quick certificate to establish C2 over SSL.
VARIABLES none
QUERIES 2
CATEGORY Initial Access
KEYWORDS
Select

Example Hunt
DESCRIPTION
Possible queries to use as a starting point for hunting.
VARIABLES none
QUERIES 3
CATEGORY
KEYWORDS
Select

Flow Analysis
DESCRIPTION
These guided queries focus on identifying high traffic volume hosts. This could be indicative of data exfiltration, reconnaissance, or other high volume activities.
VARIABLES none
QUERIES 8
CATEGORY Exfiltration
KEYWORDS awareness, flow
Select

Third Party Storage & Access

3. After the query is completed, go to *Investigations* and click the query name in the list, then click *View Results*.
4. In the *Investigations Results* page, click the *Events* tab.
5. In the `src`column, click an IP address to open the *Entity Panel* and then copy the IP at the very top of the pane.
6. Use the IP and the fields in the *Events* tab to create a new query.
   Example: `ip = 10.10.31.101 AND dst.geo.country LIKE "FR"`
7. To add this query to your investigation, click the investigation name in the bed crumb at the top-left of the page , and click *Add Query* at the bottom of the investigation details page.

Fields

Fields are used to specify and limit event types for querying and analyzing network events.

Event Type

An event type specifies the category of network events you want to query or analyze. The *event_type* field applies to all events, allowing you to filter and focus on particular types of network activities.

By using `<event_type>:<field>`, you can focus your query to a specific type of event. This helps make your search more precise and relevant to the data you are interested in.

- Flow
- HTTP
- DNS

- SSL

Example event types:

Flow

A `flow` event refers to a record of network traffic between two endpoints. It typically includes information such as the source and destination IP addresses, source and destination ports, protocol used (e.g., TCP, UDP), the amount of data transferred, and the duration of the connection.

This information helps you monitor and analyze traffic patterns, detect anomalies, and identify potential security threats.

Exercise:

1. Using the results to from the investigation, click *Add Query*and name it *Flow Events*.
2. In the *Query* field, type `event_type = 'flow'`.
3. Click *Add Query* to run the query and then view the results.
4. (Optional) Click the Individual columns dropdown to show and hide the columns to view the data.

HTTP

An HTTP event type refers to a record of HTTP traffic between a client and a server. It typically includes details about the HTTP request and response, such as the method used, the URL accessed, headers, and status codes.

This information helps you monitor web traffic, detect malicious activities such as web attacks, and ensure compliance with security policies.

Exercise:

1. Using the results to from the investigation you created earlier, click *Add Query* and name it *HTTP Events*.
2. In the *Query* field, type `event_type = 'http'`. Use lowercase for `http`.
3. Click *Add Query* to run the query and then view the results.

DNS

A DNS event type refers to a record of DNS (Domain Name System) queries and responses between a client and a DNS server. It typically includes details about the DNS request and the corresponding response.

This information helps you monitor DNS traffic, detect anomalies such as DNS spoofing or tunneling, and ensure the integrity and security of domain name resolutions within the network.

Exercise:

1. In *Investigation Results* page for the HTTP query, click an IP address in `src` column to open the *Entity Panel*.
2. At the bottom of the *Entity Panel*, click *Search Events*. The *Add Query to Investigation* dialog opens.
3. In the *Query Name* field, type *DNS*.
4. In the *Search Query* field, type `event_type = 'dns'`.
5. Click *Add Query* to run the query and then view the results.

SSL

An SSL event type refers to a record of SSL/TLS (Secure Sockets Layer/Transport Layer Security) traffic between a client and a server. It typically includes details about the SSL handshake, certificates, and encrypted data transfer.

This information helps you monitor encrypted traffic, ensure the security of SSL/TLS connections, and detect potential issues such as expired certificates, weak ciphers, or SSL/TLS vulnerabilities.

Exercise:

1. Using the results to from the investigation, click *Add Query* and name it *SSL Events*.
2. In the *Query* field, type `event_type = 'ssl'`.
3. Click *Add Query* to run the query and then view the results.

Sub-fields

A sub-field is a more specific field within a broader parent field. When you search for a sub field without specifying the parent field, the search will include all subfields with that name.

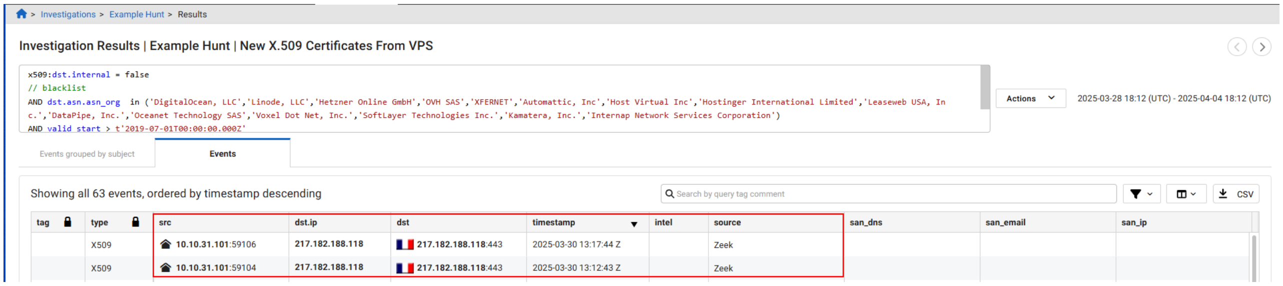
Examples:

Parent field	Sub-field search
IP	`src.ip`, `dst.ip`, `host.ip`, `answers.ip`, `referrer.host.ip`, `headers.location.ip`, etc.
Domain	`host.domain`, `query.domain`, `helo.domain`, `san_dns.domain`, etc.
URI	`uri.uri`, `referrer.uri`, etc.
Query	`uri.query`, `referrer.query` (but not `dns:query`; use `query.domain` instead).

Exercise

This is exercise is based on the *Example Hunt* investigation you ran earlier.

1. Click *View Results* next the first query in the list.
2. Click the *Events* tab. The columns to the right of the type column represent the sub fields for the parent event.



Investigation Results | Example Hunt | New X.509 Certificates From VPS

```
x509:dst.internal = false
// blacklist
AND dst.asn.asn_org  in ('DigitalOcean, LLC','Linode, LLC','Hetzner Online GmbH','OVH SAS','XFERNET','Automattic, Inc','Host Virtual Inc','Hostinger International Limited','Leaseweb USA, In
c.','DataPipe, Inc.','Oceanet Technology SAS','Voxel Dot Net, Inc.','SoftLayer Technologies Inc.','Kamatera, Inc.','Internap Network Services Corporation')
AND valid start > t'2019-07-01T00:00:00.000Z'
```

Actions
2025-03-28 18:12 (UTC) - 2025-04-04 18:12 (UTC)
Events grouped by subject
Events
Search by query tag comment
CSV

Showing all 63 events, ordered by timestamp descending

tag	type	src	dst.ip	dst	timestamp	intel	source	san_dns	san_email	san_ip
	X509	10.10.31.101:59106	217.182.188.118	217.182.188.118:443	2025-03-30 13:17:44 Z		Zeek			
	X509	10.10.31.101:59104	217.182.188.118	217.182.188.118:443	2025-03-30 13:12:43 Z		Zeek			

3. Record a column header and its value. For the purpose of this exercise, we will use `dst.ip`.
4. Go back to your investigation and click *Add Query*.
5. In the query field, create a new query based on the event type and sub field. If you need help with an operator, see Operators.
   Example: `event_type = 'flow'AND dst.ip = "10.10.1.5"`

Commonly Confused Fields

Field	Example
URI	`uri.uri` vs. *uri.path* and *uri.query*
MIME	`request_mime` vs. `request_mimes`
File	`file.*` vs. `files.*`

Some fields cannot be searched, such as `account` and `observation:context`.

Value Types

A value type refers to the specific data or value that you are querying or filtering for within a field. It is the actual content you are looking for in your search. For example, in the clause `<field> <operator> <value>`, the content you are looking for is `<value>`.

Value types are used in conjunction with fields and operators to form complete IQL clauses, allowing you to perform precise and targeted searches within your data.

Integer	A number such as , 9, 54458, -8 (`snmp:snmp_version != '3'`)
Float	A number with decimal points, such as 4.5, 125.5554
Boolean	True, false, or null (`dns:src.internal = true and dns:dst.internal = false`)
String	Alphanumeric characters contained in single or double-quotes (`kerberos:error_msg = 'KDC_ERR_CLIENT_REVOKED'`).
Timestamp	In the format `t”2023-02-28T00:00:00.000Z”` contained in single or double-quotes, 'millisecond- or microsecond-precision '(`valid_start > t'2019-07-01T00:00:00.000Z`)
IP	Single IP or CIDR, quoted or unquoted (`ip =8.8.8.8`)
Object	Anything with a sub-field, such as: `IP-objects`, `Domain-objects`, `Host-objects`, `URI-Objects`, `File-Objects`, `Email-Objects`
Array	IQL clause is satisfied if any value in the array satisfies the clause. (`suricata:sig_id IN (10098240,10099368)`)

Object Types

An object type is the category or class of data that you are looking for. It helps you define what kind of information you want to find and makes your search more specific and accurate.

By specifying an object type, you can focus your search on particular kinds of data. This makes your queries more precise and helps you find exactly what you need.

The table below lists the available object types along with their descriptions and examples. Click on an object type in the *Object Type* column to view a sample query.

Object Type	Description	Example
IP	Information related to internet protocol addresses.	ASN (Autonomous System Number), geo (geographical location), internal, port. *Flow Events*: ip_bytes, pkts (packets).
ASN	Details about the Autonomous System Number.	ASN, asn_org (organization), ISP (Internet Service Provider), org (organization).
Geo	Geographical information.	City, country, location, subdivision.
Domain	Information about domain names.	City, country, location, subdivision.
URI	Uniform Resource Identifier details.	Fragment, host, path, port, query, scheme, uri.
File	Information about files.	Bytes, MD5 (hash), MIME type, name, SHA1 (hash), SHA256 (hash).
email	Information related to email addresses.	Domain, email, name.
host	Combines IP and domain information.	

Sample object queries

The following example queries are intended to help you get started with query objects. Each example uses curly braces {} for multiple conditions.

IP

This query will return results that match both the specified IP address and the country within the IP object.

```
ip {
   address = "203.0.113.5"
   AND geo.country = "Canada"
}
```

ip	This specifies that you are querying the IP object.
address = "203.0.113.5"	This condition filters the query to include only IP addresses that match 203.0.113.5.

AND geo.country = "Canada"	This additional condition ensures that the query also matches IP addresses located in Canada.

ASN

This query will return results that match both the specified ASN and organization within the ASN object.

```
asn {
   asn = "12345"
   AND org = "Example Organization"
}
```

asn	This specifies that you are querying the ASN object.
asn = "12345"	This condition filters the query to include only ASNs that match 12345.
AND org = "Example Organization"	This additional condition ensures that the query also matches ASNs associated with the organization named *Example Organization*.

Geo

This query will return results that match both the specified city and country within the geo object.

```
geo {
   city = "Vancouver"
   AND country = "Canada"
}
```

geo	This specifies that you are querying the geo object.
city = "Vancouver"	This condition filters the query to include only geographical locations in the city of Vancouver.
AND country = "Canada"	This additional condition ensures that the query also matches locations within Canada.

URI

This query will return results that match both the specified domain name and country within the domain object.

```
domain {
   name = "example.com"
   AND geo.country = "Canada"
}
```

domain	This specifies that you are querying the domain object.
name = "example.com"	This condition filters the query to include only domains that match example.com.

AND geo.country = "Canada"	This additional condition ensures that the query also matches domains located in Canada.

File

This query will return results that match both the specified file name and SHA-256 hash within the file object.

```
file {
   name = "example.txt"
   AND sha256 = "d2d2d2d2d2d2d2d2d2d2d2d2d2d2d2d2d2d2d2d2d2d2d2d2d2d2d2d2d2d2d2d2"
}
```

file	This specifies that you are querying the file object.
name = "example.txt"	This condition filters the query to include only files named example.txt.
AND sha256 = "d2d2d2d2d2d2d..."	This additional condition ensures that the query also matches files with the specified SHA-256 hash.

Domain.

This query will return results that match both the specified domain name and country within the domain object.

```
domain {
   name = "example.com"
   AND location.country = "Canada"
}
```

domain	This specifies that you are querying the domain object.
name = "example.com"	This condition filters the query to include only domains that match example.com.
AND location.country = "Canada"	This additional condition ensures that the query also matches domains located in Canada.

Email

This query will return results that match both the specified domain and name within the email object.

```
email {
   domain = "example.com"
   AND name = "John Doe"
}
```

email	This specifies that you are querying the email object.
domain = "example.com"	This condition filters the query to include only emails from the domain example.com.
AND name = "John Doe"	This additional condition ensures that the query also matches emails associated with the name John Doe.

Host

The following query will return results that match both the specified IP address and domain within the host object.

```
host {
   ip = "192.168.1.1"
   AND domain = "example.com"
}
```

host	This specifies that you are querying the host object.
ip = "192.168.1.1":	This condition filters the query to include only hosts with the IP address 192.168.1.1.
AND domain = "example.com":	This additional condition ensures that the query also matches hosts with the domain example.com.

Fields and field types

This document provides information about event types, field types and enriched object field types used in FortiNDR Cloud for network event analysis.

- Field types on page 183
- Enriched object field types on page 184
- Common fields on page 188

Field types

Most fields are atomic, meaning they cannot be broken down further. However, FortiNDR Cloud fields can also be a structured object, either an object or an array. See Enriched object field types on page 184.

Fields in FortiNDR Cloud can be one of the following types.

Field Type	Description	Example
int	An integer value (port, bytes, packets, etc.)	`1`
float	A decimal value (distance, entropy, etc.)	`1.0`
Boolean	true of false	`True`
string	A sequence of arbitrary characters	`hello world`
timestamp	A RFC3339 timestamp value	`2019-01-01T00:00:00.000Z`
ip	A single IP address or valid CIDR-notation	`8.8.8.8`, `10.0.1.0/24`
object	An arbitrary JSON structure containing nested subfields	N/A
array	An array of values of the same type	N/A

Enriched object field types

A field that is of type object simply means the field is actually a collection of sub-fields. Some of those sub-fields could also be another collection of sub-fields. Think of an *object* as a JSON block, or a dictionary for the Python users, or a map for the C/C++ users. Sub-fields are then referenced using dot notation, (for example, `dst.geo.country`).

Some object types are very common and are used over and over again, such as an `ip-object`. An *ip-object* refers to a field with the structure shown in the ip-object table. These field types are used throughout the different event types, so you should be familiar with them.

Deprecation notice:

The `asn.isp` and `asn.org` fields are no longer supported. Please use `asn.asn_org` or `asn.asn` fields instead. This change applies to all IP-related fields.

The following topics provide a description of each object field type and the sub-fields it contains:

- IP-Objects on page 184
- Domain-Objects on page 186
- Host-Objects on page 186
- URI-Objects on page 186
- URL-Objects on page 187
- File-Objects on page 187
- Email-Objects on page 188

Back to top.

IP-Objects

The following table describes the fields that contain enriched information for an IP address:

Field	Type	Description
`asn`	asn-object	ASN information for the IP address Example: See table below
`$device`	synthetic field	Enables querying devices by hostname or MAC address. Note: this field is only available for the `src` and `dst` fields.
`geo`	geo-object	Geographic information for the IP address Example: See table below
`internal`	Boolean	Indicates whether the IP address is internal to the network Example: `true`
`ip`	ip	The IP address

Field	Type	Description
		Example: `10.10.10.10`
`ip_bytes`	int	The number of bytes transmitted by the IP address within the flow (only populated in Flow events) Example: `458 Bytes`
`pkts`	int	The number of packets transmitted by the IP address within the flow (only populated in Flow events) Example: `8`
`port`	int	The port used by the IP address Example: `52843`
`username`	int	The user name from Zscaler used in device detections (only populated in DNS, Flow, HTTP, and SSL events). Example: `john.smith@fortinet.com`
`hostname`	int	The host name from Zscaler used in device detections (only populated in DNS, Flow, HTTP, and SSL events). Example: `F09NQJM1ABC`

The `asn` field contains the following subfields.

Field	Type	Description
`asn`	int	The Autonomous System Number Example: `16509`
`asn.asn_org`	string	The organization name associated with the ASN (they actually use the ASN) Example: `Amazon.com, Inc.`
`asn.asn`	string	The upstream ISP for the ASN Example: `Amazon.com`
`org`	string	The upstream owner of the ASN - may differ from `asn_org` Example: `Amazon.com`

The `geo` field contains the following subfields.

Field	Type	Description
`city`	string	The city of record Example: `Boardman`
`country`	string	The country of record Example: `US`

Field	Type	Description
`location`	object	The longitude and latitude of record Example: `(45.8491,-119.7143)`
`subdivision`	string	The segment of the country (states in the US) Example: `OR`

Back to Enriched object field types.

Domain-Objects

The following table describes the fields that contain enriched information for a domain:

Field	Type	Description
`domain`	string	The domain Example: `portal.fortindr.forticloud.com`
`domain_entropy`	float	The computed Shannon entropy of the domain Example: `3.5`

Back to Enriched object field types

Host-Objects

Host-Objects fields contain enriched information for both IP addresses and domains because the field could be either one. For example an HTTP Host header or a DNS answer.

Host-Objects contain the combined sub-fields in:

- IP-Objects on page 184
- Domain-Objects on page 186

Back to Enriched object field types

URI-Objects

Fields that contain a URI are broken up into its different components.

Field	Type	Description
`fragment`	string	The fragment identifier component Example: `#`
`host`	host-object	The content of the Host header Example: `portal.fortindr.forticloud.com`
`params`	object-array	The HTTP parameters as an array of key-value pairs **Example**:
`path`	string	The path of the requested resource

Field	Type	Description
		Example: search
port	integer	The specified port Example: 443
query	string	The full parameter string Example: query=8.8.8.8&sort_dir=desc
scheme	string	The specified scheme Example: https
uri	string	The full URI Example: https://portal.fortindr.forticloud.com:443/search?query=8.8.8.8&sort_dir=desc#

URL-Objects

Fields that contain both a *host-object* and a *uri-object* are referred to as a *url-object*.

URL-Objects contain the combined sub-fields in:

- IP-Objects on page 184
- Domain-Objects on page 186
- URI-Objects on page 186

Back to Enriched object field types

File-Objects

File-Objects fields contain enriched information for an observed file.

Field	Type	Description
bytes	int	The file's size in bytes Example: 145922
md5	string	The computed MD5 hash Example: 92a4d0aeede3ce110b4121342df48496
mime_type	string	The fingerprinted MIME-type Example: application/x-dosexec
name	string	The observed name Example: 2487ff63fb4e79.gif
sha1	string	The computed SHA1 hash Example: e63932430d4028b51fa25dae13d9e0188e9a02a5
sha256	string	The computed SHA256 hash Example: 227193160a2448dfa8bbbd2cf125afa9cca0d1a718b109a3adae5df8a24cdf6e

Back to Enriched object field types

Email-Objects

Email-Objects fields contain an email address broken up into its different components.

Field	Type	Description
`domain`	string	The domain Example: `gmail.com`
`email`	string	The entire email address Example: `jdoe@gmail.com`
`name`	string	The name Example: `jdoe`

Back to Enriched object field types

Common fields

Several fields are common across all event types. Some serve administrative purposes (such as a unique event identifier or the originating sensor) while others are essential for interpreting network traffic, including timestamps and source/destination IP addresses. Each of the following fields is present in every event, with a few exceptions noted in the table below.

Field	Type	Description
`account`	string	The name of the account that owns the event Example: `Training`
`customer_id`	string	The code of the account that owns the event Example: `chg`
`dst`	ip-object	The responder to the connection Example: `8.8.8.8`
`event_type`	string	The type of event recorded Example: `smp`
`flow_id`	string	A unique identifier for a flow shared by all events produced from that particular flow Example: `CtjvJR1nIzN4WFSuc7`
`geo_distance`	float	The difference between `src` and dst geo values Example: `1410.373826280689`
`intel`	intel-array	An array of intel-objects matching entities in the event
`sensor_id`	string	The sensor that created the event

Field	Type	Description
		Example: chg1
`source`	string	The source of the event. Example: `Zeek`
`src`	ip-object	The initiator of the connection Example: `10.10.10.10`
`timestamp`	timestamp	The time at which traffic for the event began Example: `2019-01-01T00:00:00.000Z`
`uuid`	string	A unique identifier for the event Example: `1ca116cb-9262-11e9-b5bf-02472fee9a4a`

The `intel` field is an array of values of type *intel-object*. The table below lists the sub-fields contained within the `intel` field.

Field	Type	Description
`confidence`	string	The overall confidence rating of the intel source Example: `high`
`feed`	string	The name of the intel source Example: `Sinkholes`
`indicator`	string	The matched entity Example: `131.253.18.12`
`indicator_type`	string	The entity type Example: `ip_address`
`is_malicious`	Boolean	Indicates whether the indicator is believed to be malicious Example: `false`
`meta`	string	A JSON string of all metadata provided by the intel source Example: `{"description":"Observed C2 Activity","references":["Fortinet FortiGuard Labs"]}`
`severity`	string	The overall severity rating of the intel source Example: `high`
`timestamp`	timestamp	The creation time of the intel record Example: `2019-01-01T00:00:00.000Z`

Exceptions to common fields

Event type	Exception
DPI	The `flow_id` is not included in the `dpi` events.
Netflow	In NetFlow events, the `src` (source) and `dst` (destination) fields are replaced with `interface_enriched`, a type based on `ip-object`. This enriched type includes everything in `ip-object`. Unique to Netflow, the `src` and `dst` also include the `mac` (MAC address) field
Software	The Software event type does not have `src` and `dst` fields because it is not extracted from raw network traffic. Instead, the record is inferred based on the contents of one or more fields.
Suricata	The Suricata event type does not have a `flow_id` field because it is generated by a completely different process than the other event types. You must match `suricata` events to their associated flows using the IP address and ports of the event.

Event fields

The following topics describe the fields unique to each event type.

DCE RPC fields

A `dce_rpc` event is created when a Distributed Computing Environment / Remote Procedure Call message is observed over a connection, capturing RPC operations like bind, request, or response. This protocol enables clients to execute procedures on remote servers.

The following table shows fields unique to the `dce_rpc` event type:

Field	Type	Description
`dce_rpc_endpoint`	string	The remote service targeted by the command Example: `samr`
`dce_rpc_operation`	string	The command submitted to the remote service Example: `SamrOpenDomain`
`named_pipe`	string	The name of the target pipe (or the destination port if not named Example: `\pipe\lsass`
`round_trip_time`	float	The time in seconds between command execution and results returned Example: `0.01`

Back to Event Fields.

DHCP fields

A `dhcp` event is created when a Dynamic Host C onfiguration Protocol exchange occurs, such as a client requesting or receiving network addressing from a DHCP server. This protocol is used to dynamically assign IP addresses and other network configuration settings.

The following table shows fields unique to the `dhcp` event type:

Field	Type	Description
`assignment`	ip-object	The IP assigned to the client Example: `10.0.0.10`
`dhcp_msg_type`	string	Shows whether a lease is being requested or acknowledged Example: `Request`
`hostname`	string	The client hostname Example: `bob-pc`
`lease_duration`	float	Number of seconds that the lease is valid Example: `1800`
`lease_end`	timestamp	The time at which the lease expires Example: `2019-06-24T07:31:35.012Z`
`mac`	string	The client MAC address Example:
`trans_id`	int	The transaction ID, ties together requests and acknowledgments.

Field	Type	Description
		Example: `1191705957`

Back to Event Fields.

dnp3 fields

A `dnp3` event is created when DNP3 (Distributed Network Protocol), commonly used in industrial control systems, logs requests or replies. The protocol enables master-to-outstation communication for monitoring and control.

The following table shows fields unique to the DNP3 event type:

Field	Type	Description
`dnp3_function_reply`	string	The name of the function message in the reply. Example: `RESPONSE`
`dnp3_function_request`	string	The name of the function message in the request. Example: `CONFIRM`
`dnp3_indication_number`	integer	The response's "internal indication number". Example: `0`

Back to Event Fields.

dnp3_control fields

A `dnp3_control` event is generated when DNP3 control messages—specialized commands for remote control or configuration are observed. It supports supervisory control operations in DNP3 networks.

dnp3_object fields

A `dnp3_object` event is generated when DNP3 object-level constructs (such as analog or binary inputs/outputs) are seen in the traffic, facilitating insight into SCADA-style data models. It reflects structured data exchanged via DNP3.

The following table shows fields unique to the `dnp3_object` event type:

Field	Type	Description
`dnp3_function_code`	string	Function code (READ or RESPONSE) Example: `RESPONSE`
`dnp3_object_count`	integer	DNP3 object type Example: `32-Bit Binary Counter`
`dnp3_object_type`	string	DNP3 object type

Field	Type	Description
		Example: `32-Bit Binary Counter`
`dnp3_range_high`	integer	Range (high) of object Example: `9`
`dnp3_range_low`	integer	Range (low) of object Example: `0`
`is_orig`	boolean	True if the packet is sent from the originator Example: `true`

Back to Event Fields.

DNS fields

A `dns` event is created when a Domain Name System query or response message is captured over the network. DNS enables the resolution of human-friendly domain names to IP addresses.

The following table shows fields unique to the `DNS` event type:

Field	Type	Description
`answers`	host-object-array	The answers returned by the DNS server for the query Example: `[103.2.116.79, 103.2.116.83]`
`proto`	string	The transport layer protocol used Example: `udp`
`qtype`	int	The numeric code of the query type Example: `1`
`qtype_name`	string	The string name of the query type Example: `A`
`query`	domain-object	The domain being queried Example: `www.google.com`
`rcode`	int	The numeric code of the result Example: `0`
`rcode_name`	int	The string name of the result Example: `NOERROR`
`rejected`	Boolean	Indicates whether the query was rejected by the server Example: `false`
`ttls`	int-array	An array of TTL values, one per result Example: `[299, 299]`

Back to Event Fields.

DPI fields

A dpi (Deep Packet Inspection) event is created by the Fortinet IPS (Intrusion Prevention System) engine running on the sensor which logs informative and pattern matching based events. The IPS engine logs AppID (Applications seen by the engine for software and protocols), IDS (signatures for vulnerabilities), OT Protocols/Threats (Operational Technology based protocol parsing and signatures), Botnet (Botnet based traffic patterns), and Info (informational events about protocols).

The following table shows fields unique to the dpi event type:

Field Name	Type	Description
dpi_alert_category	string	Type of category of the IPS signature Example:: IDS
dpi_alert_severity	integer	Severity of the triggered IPS signature Example:: 0
dpi_alert_signature	string	The triggered IPS signature name Example:: ITCM.Class.D_ Wayside.Status.Message.WIUStatus.Timed.Beacon
dpi_alert_signature_id	integer	Attack ID or ID of the IPS signature Example:: 12343
dpi_app_behavior	array	Possible behavior for the application in which the triggered IPS signature refers to Example:: Evasive
dpi_app_category	string	The application category for the triggered IPS signature, if there is any Example:: Operational.Technology
dpi_app_language	string	Language used in the application in which the triggered IPS signature refers to Example:: N/A
dpi_app_name	array	Name of the application Example:: Other
dpi_app_os	array	OS of the application or vulnerable system/devices Example:: All
dpi_app_technology	array	Technology group or type for the application in which the triggered IPS signature refers to. Example:: Client-Server
dpi_app_vendor	string	Vendor of the application in which the triggered IPS signature refers to Example:: Other

Field Name	Type	Description
dpi_expected_port	string	Default port and protocol for the application in which the triggered IPS signature is referring to. Example:: UDP/1900
dpi_parent_vuln_id	integer	ID of the IPS signature that link to the triggered IPS signature Example:: 56843
dpi_rulegroup	string	Which group the triggered IPS signature belongs to Example:: SCADA
dpi_ruleset_rev	integer	Version number for the triggered IPS signature Example:: 13401
dpi_session_id	integer	Session ID for the traffic Example:: 0
dpi_sig_cve	array	ID for the CVE reference Example:: 20050380
dpi_ssl_decrypt_req	boolean	Does the current IPS signature need SSL decryption to work Example:: False
dpi_vuln_id	integer	Vulnerablity ID or Applicatioin ID for the IPS signature (Note: One VID could contain multiple AID) Example:: 33456
dpi_vuln_type	string	Type of vulnerability this IPS signature is related to Example:: Other

The common field of flow_id is not included in the dpi events.

Back to Event Fields.

Flow fields

A flow event is created when a unidirectional or bidirectional network flow is identified, summarizing traffic between endpoints over time, such as packet count, byte count, and states. A network flow is defined by a unique combination of src.ip, src.port, dst.ip, dst.port, and proto.

The following table shows fields unique to the flow event type:

Field	Type	Description
duration	float	The number of seconds the flow lasted Example: 7s

Field	Type	Description
flow_state	string	Indicates how the connection started and ended, hover over a value to get an explanation of it Example: SF
proto	string	The transport layer protocol used Example: tcp
service	string	The application(s) observed in the flow, if any Example: http
total_ip_bytes	int	The total combined bytes transmitted over the connection Example: 927 bytes
total_pkts	int	The total combined packets transmitted over the connection Example: 11
upload_percent	int	The percentage of bytes transmitted by the src for the flow (56% == 56) Example: 56%

Back to Event Fields.

flow_state fields

A flow_state is a field within flow events and is created when state transitions are detected—e.g., opening, establishing, closing—tracking the progression of a flow's lifecycle.

The following table shows fields unique to the flow_state event type:

flow_state	Description
S0	Connection attempt seen, no reply.
S1	Connection established, not terminated.
SF	Normal establishment and termination.
REJ	Connection attempt rejected.
S2	Connection established and close attempt by originator seen (but no reply from responder).
S3	Connection established and close attempt by responder seen (but no reply from originator).
RSTO	Connection established, originator aborted (sent a RST).
RSTR	Responder sent a RST.
RSTOS0	Originator sent a SYN followed by a RST, we never saw a SYN-ACK from the responder.
RSTRH	Responder sent a SYN ACK followed by a RST, we never saw a SYN from

flow_state	Description
	the (purported) originator.
SH	Originator sent a SYN followed by a FIN, we never saw a SYN ACK from the responder (hence the connection was “half” open).
SHR	Responder sent a SYN ACK followed by a FIN, we never saw a SYN from the originator.
OTH	No SYN seen, just midstream traffic (a “partial connection” that was not later closed).

Back to Event Fields.

FTP fields

An ftp event is created when File Transfer Protocol commands or responses are observed during an FTP session. This protocol is used for transferring files between client and server.

The following table shows fields unique to the FTP event type:

Field	Type	Description
data_channel.dst	ip-object	The destination of the data channel Example: 10.0.0.2
data_channel.geo_distance	float	The distance (in miles) between the IP addresses of the data channel Example: 5077.89
data_channel.passive	Boolean	Indicates whether the session is in passive mode Example: True
data_channel.src	ip-object	The source of the data channel Example: 10.0.0.10
files	file-array	Files transferred over the session Example: N/A
ftp_arg	string	The full argument string supplied to the command Example: ftp://10.0.0.2/secrets.zip
ftp_command	string	The client command Example:RETR
reply_code	int	The server response code to the command Example: 227
reply_msg	string	The server response string to the command Example: Entering Passive Mode (10,0,0,2,197,36)

Field	Type	Description
`username`	string	The username used to establish the connection Example: `Admin101`

Back to Event Fields.

HTTP fields

An `http` event is created when HTTP requests or responses—including headers and message boundaries are processed over HTTP connections. HTTP is the foundational protocol for web communications.

The following table shows fields unique to the HTTP event type:

Field	Type	Description
`cookie_vars`	string-array	Variable names extracted from all cookies. Example: `disp.prefs,_utmz ,_utmc,_utma, TS01f95106, _utmb`
`files`	file-object-array	Files downloaded over the HTTP connection
`headers.accept`	string-array	The content of the Accept header Example: `[image/webp, image/apng, image/*, */*;q=0.8]`
`headers.client_header_names`	string-array	The vector of HTTP header names sent by the client. Example: `CONNECTION, ACCEPT, ACCEPT-ENCODING, IF-UNMODIFIED-SINCE, RANGE, USER-AGENT, HOST`
`headers.content_md5`	string	The computed MD5 hash of the headers content Example: `d41d8cd98f00b204e9800998ecf8427e`
`headers.content_type`	string-array	The contents of the Content Type header Example: `[text/xml; charset="utf-8"]`
`headers.cookie_length`	int	The length of the cookie in bytes Example: `194`
`headers.location`	url-object	The content of the Location header Example: `http://amupdatedl3.microsoft.com/server/amupdate/metadata/UniversalManifest.cab`
`headers.origin`	url-object	The content of the Origin header Example: `http://go.com`
`headers.proxied_ip_clients`	ip-object-array	The sequence of IPs the HTTP connection is proxied through Example: `[172.16.0.1, 172.16.0.2]`

Field	Type	Description
`headers.refresh.refresh`	string	The full content of the Refresh header Example: `1;URL=http://travelingtravelerhome.wordpress.com/`
`headers.refresh.timeout`	int	The timeout period in seconds Example: `1`
`headers.refresh.uri`	uri-object	The URI of the Refresh header Example: `http://travelingtravelerhome.wordpress.com/`
`headers.server`	string	The web server software Example: `Microsoft-IIS/6.0`
`headers.server_header_names`	string-array	The vector of HTTP header names sent by the server. Example: `VIA, DATE SERVER, CONNECTION, X-2SENDPT1, X-WSENDPT2, CONTENT-LENGTH`
`headers.x_powered_by`	string	The application software running on the server Example: `ASP.NET`
`host`	host-object	The content Host header Example: `www.google.com`
`info_msg`	string	The message returned with a 100-level response code Example: `Continue`
`method`	string	The HTTP method selected Example: `GET`
`proxied`	string-array	A list of proxy steps Example: `PROXY-CONNECTION -> Keep-Alive`
`referrer`	url-object	The content of the Referrer header Example: `http://au.search.yahoo.com/search?p=planetside.co.uk&fr=sfp&fr2=sb-top-search`
`request_len`	int	The length in bytes of the request Example: `0`
`request_mimes`	string-array	The fingerprinted MIME-type(s) of the request content, use instead of `request_mime` Example: text/plain
`response_len`	int	The length in bytes of the response Example: `24`
`response_mimes`	string-array	The fingerprinted MIME-type of the response content, use instead of `response_mime` Example: `text/html`
`status_code`	int	The numeric code of the server's response

Field	Type	Description
		Example: `200`
`status_msg`	string	The string name of the server's response Example: `OK`
`trans_depth`	int	The depth of redirects Example: `4`
`uri`	uri-object	The full URI of the request Example:`/index.php`
`user_agent`	string	The content of the UserAgent header Example: `Mozilla/5.0 (Windows NT 6.1; WOW64; Trident/7.0; rv:11.0) like Gecko`
`username`	string	The username used with Basic Auth, if any Example: `dave`

Back to Event Fields.

Kerberos fields

A `kerberos` event is generated when Kerberos authentication messages (e.g., AS or TGS requests/replies) are detected. Kerberos is a network authentication protocol that uses tickets to allow nodes to prove their identity.

The following table shows fields unique to the Kerberos event type:

Field	Type	Description
`cipher`	string	The cipher suite used to encrypt the ticket Example: `aes256-cts-hmac-sha1-96`
`client`	string	The client that requested the ticket; machine accounts have a $ at the end of their name but user accounts do not. Example: `jane.doe/ACME.CORP`, `financewks008$/ACME.CORP`
`client_cert_fuid`	string	Client certificate file unique ID Example: `Xbtku3TdsfdsdfasdfA8VNsk`
`client_cert_subject`	string	Client certificate Subject field Example: `CN=C865433`
`error_msg`	string	The error message returned for failed requests Example: `KDC_ERR_CLIENT_NAME_MISMATCH`
`forwardable`	Boolean	Indicates whether the ticket's forwardable flag is set Example: `True`

Field	Type	Description
`renewable`	Boolean	Indicates whether the ticket's renewable flag is set Example: `True`
`request_type`	string	The type of ticket requested, either a ticket-granting ticket from the authentication server (AS) or a service ticket from the ticket-granting server (TGS) Example: `AS`, `TGS`
`server_cert_fuid`	string	Server certificate file unique ID Example: `FvAdJGsjeXuhSvE9m`
`server_cert_subject`	string	Server certificate Subject field Example: `CN=dc09.google.com`
`service`	string	The service for which a ticket is being requested Example: `krbtgt/ACME.CORP`
`success`	Boolean	Indicates whether the request was successful Example: `True`
`ticket_duration`	float	The ticket duration in seconds Example: `86400`
`ticket_from`	timestamp	Time the ticket is good from Example: `2015-09-13T02:48:05.000Z`
`ticket_till`	timestamp	Time the ticket is good until Example: `2037-09-13T02:48:05.000Z`

Back to Event Fields.

LDAP fields

An `ldap` event is generated when LDAP (Lightweight Directory Access Protocol) messages—such as authentication, search, or directory operations—are observed. This protocol provides directory services, like querying user or organizational data.

The following table shows fields unique to the `LDAP` event type:

This event type is supported in Sensor version 2.2.0 and later.

The following table shows fields unique to the `ldap` event type:

Field	Type	Description
`ldap_argument`	string	Additional arguments this message includes. Example: `REDACTED`

Field	Type	Description
`ldap_diagnostic_message`	string	Diagnostic message if the LDAP message contains a result.
`ldap_message_id`	integer	The unique identifier that is used to correlate requests and responses. Example: `2`
`ldap_object`	string	The objects names this message refers to. Example: `ATRLAB\\Administrator`
`ldap_opcode`	string	The operation code indicating what type of message it is. Example: `bind, simple`
`ldap_result`	string	The result code if the message contains a result. Example: `success`
`ldap_version`	integer	LDAP version. Example: `3`

Back to Event Fields.

LDAP Search fields

A `ldap_search` event is created when a client performs an LDAP search operation.

This event type is supported in Sensor version 2.2.0 and later.

The following table shows fields unique to the `ldap_search` event type:

Field	Type	Description
`ldap_diagnostic_message`	string	Diagnostic message if the LDAP message contains a result.
`ldap_message_id`	integer	The unique identifier that is used to correlate requests and responses. Example: *2*
`ldap_result`	string	Result code of search operation. Example: `success`
`ldap_search_attribute`	string	A list of attributes that were returned in the search. Example: `2`
`ldap_search_base_object`	string	Base search objects. Example: `2`

Field	Type	Description
`ldap_search_deref_aliases`	string	Set of deref alias. Example: 2
`ldap_search_filter`	string	A string representation of the search filter used in the query. Example: 2
`ldap_search_result_count`	integer	Number of results returned. Example: 2
`ldap_search_scope`	string	Set of search scopes. Example: 2
`source`	string	The source of the event. Example: *Zeek*

Back to Event Fields.

Modbus fields

A `modbus` event is created when Modbus protocol commands or responses—typically used in industrial automation systems—are captured. This allows reading or writing of registers or coil values in connected devices.

The following table shows fields unique to the Modbus event type:

Field	Type	Description
`is_orig`	boolean	Example: `true`
`modbus_address`	integer	Starting address of value(s) field.
`modbus_function`	string	The name of the function message that was sent. Example: `READ_INPUT_REGISTERS`
`modbus_quantity`	integer	Number of addresses/values read or written to.
`modbus_request_response`	string	REQUEST or RESPONSE
`modbus_tid`	integer	Modbus transaction identifier
`modbus_unit`	integer	Modbus terminal unit identifier.
`modbus_values`	string[]	Value(s) of coils, discrete_inputs, or registers read/written to. Example: `555,0,100`

Back to Event Fields.

Netflow fields

A `netflow` event is created when IP traffic flow data—typically collected by routers or switches—is captured and exported for analysis. This allows visibility into network usage patterns, including source and destination IPs, protocols, ports, and byte counts.

- A NetFlow annual subscription license is required for FortiNDR Cloud to ingest third-party logs for anomaly detection.
- Only NetFlow-based botnet detections are currently displayed. Detections for spam, phishing, Tor, and proxy traffic are available at this time. Additionally, an IOC (Indicator of Compromise) risk score may not be shown for every IP address.

The following table shows fields unique to the Netflow event type:

Field	Type	Description
`netflow_bytes`	integer	Number of bytes in a flow. Example: `106`
`netflow_dst_net`	string	Destination network address associated with a particular network flow with the mask. Example: `0.0.0.0/0`
`netflow_dst_vlan`	integer	Virtual LAN identifier associated with egress interface. Example: `0`
`netflow_etype`	string	Ethernet type (0x0800 for IPv4). Entire list is here: https://en.wikipedia.org/wiki/EtherType Example: `IPv4`
`netflow_forwarding_status`	integer	Forwarding status is encoded on 1 byte with the 2 left bits giving the status and the 6 remaining bits giving the reason code.Status is either unknown (00), Forwarded (10), Dropped (10) or Consumed (11). Example: `0`
`netflow_frag_id`	integer	The fragment ID. Example: `19093`
`netflow_frag_offset`	integer	The fragment-offset value from fragmented IP packets. Example: `0`
`netflow_icmp_code`	integer	Code of the ICMP message. Example: `0`
`netflow_icmp_type`	integer	ICMP flags Example: `0`
`netflow_input_interface`	integer	Input interface.

Field	Type	Description
		Example: 512
netflow_ip_flags	integer	IP flags Example: 0
netflow_ip_tos	integer	IP Type of Service. Example: 0
netflow_ip_ttl	integer	TTL value observed for packets of the flow. Example: 64
netflow_ipv6_flow_label	integer	IPv6 flow label as in RFC 2460 definition. Example: 0
netflow_layer_size	array	Size of protocols seen in the flow. Example: [14, 4, 20, 8]
netflow_layer_stack	array	Protocols seen in this flow. Example: [Ethernet, MPLS, IPv4, ICMP]
netflow_output_interface	integer	Output interface. Example: 0
netflow_sampled	integer	Denominator of how frequently data is collected. Meaning a sampling rate of 100 means one out of every 100 packets is sampled. Helps reduce the load on network devices and collectors by only exporting a portion of the traffic. Example: 1
netflow_sampler_address	string	The IP address of the network device (typically a router) that is performing packet sampling and exporting NetFlow data. Example: 169.254.0.2
netflow_seq_num	integer	A cumulative counter that increments with each exported datagram to detect and account for any missing or dropped NetFlow datagrams. Example: 766
netflow_source	string	Type of netflow Example: IPFIX
netflow_src_net	string	Source network address associated with a particular network flow with the mask. Example: 0.0.0.0/0
netflow_src_vlan	integer	Virtual LAN identifier associated with ingress interface. Example: 0

Field	Type	Description
`netflow_tcp_flags`	integer	TCP flags Example: `0`
`netflow_timestamp_end`	string	Time the flow ended in nanoseconds.
`netflow_timestamp_received`	string	Timestamp in nanoseconds when the flow message was received by the NetFlow collector or analysis system.
`netflow_vlan_id`	integer	Allows you to associate network traffic flows with their respective VLANs. Example: `0`
`proto`	string	Protocol used in the traffic. Example: `TCP`
`tag`	string	The type of event Example: `flow`
`total_pkts`	integer	Number of packets in a flow. Example: `1`

In NetFlow events, the `src` (source) and `dst` (destination) fields are replaced with `interface_enriched`, a type based on `ip-object`. This enriched type includes everything in `ip-object`. Unique to Netflow, the `src` and `dst` also include the `mac` (MAC address) field

Back to Event Fields.

Notice Fields

A `notice` event is raised when unusual or noteworthy activity is detected and logged as a security or policy notification. It flags anomalies or policy-triggered events across Zeek's analysis.

The following table shows fields unique to the Notice event type:

Field	Type	Description
`application`	application	The classified application for a flow
`dst_ip`	string	The IP of the responder to the connection Example: `8.8.8.8`
`dst_ip_enrichments`	ip_enrichments	Enrichments for an IP
`dst_port`	integer	The port of the responder to the connection Example: `53`

Field	Type	Description
`file_desc`	string	Description of a file to provide more context. For example, if a notice was related to a file over HTTP, the URL of the request would be shown.
`file_mime_type`	string	If the notice event is related to a file, this will be the mime type of the file.
`fuid`	string	A file unique ID if this notice is related to a file.
`msg`	string	Description of activity noticed. Example: `10.1.0.47 appears to be guessing SSH passwords (seen in 30 connections).`
`n`	integer	Associated count, or perhaps a status code.
`note`	string	Notice type Example: `SSH::Password_Guessing`
`notice_actions`	string	The actions which have been applied to this notice. Example: `[Notice::ACTION_LOG]`
`peer_descr`	string	Textual description for the peer that raised this notice, including name, host address and port.
`proto`	string	The transport protocol.
`src_ip`	string	The IP of the initiator of the connection Example: `10.10.10.10`
`src_ip_enrichments`	ip_enrichments	Enrichments for an IP
`src_port`	integer	The port of the initiator of the connection Example: `52843`
`sub`	string	Technical details of the activity. Example: `Sampled servers: 10.1.0.86, 10.1.0.86, 10.1.0.86, 10.1.0.86, 10.1.0.86`
`suppress_for`	number	This field indicates the length of time that this unique notice should be suppressed.
`tag`	string	| The type of event Example: `flow`

Back to Event Fields.

NTLM fields

An `ntlm` event is generated when NT LAN Manager authentication exchanges are seen, including domain, username, hostname, and whether authentication succeeded. This is a Microsoft authentication protocol.

The following table shows fields unique to the NTLM event type:

Field	Type	Description
auth_domain	string	The domain used to authenticate the client Example: ACME
hostname	string	The client hostname used Example: FINANCEWKS008
ntlm_status	string	String indicating the result of the authentication Example: SUCCESS
success	Boolean	Indicates whether the authentication succeeded Example: True
username	string	The client username used Example: sqlservice

Back to Event Fields.

Observation fields

An observation event is created when the FortiNDR Cloud analytics backend identifies a correlation of information of interest. See below for valid values for the following fields:

You can view the list of observations in the *Observations* widget in the *Default Dashboard* . For more information, see:

- observation_category: asset, account, software, flow, file, relationship
- observation_class: anomalous, newly observed, specific

Observations run independently from the metadata extraction process, and are not tied to flow events with a flow_id. Additionally, an observation event may only have one of src.ip or dst.ip, although it could contain both.

The following table shows fields unique to the observation event type.

Field	Type	Description
evidence_end_timestamp	timestamp	The timestamp for which the flagged activity ended. Example: 2019-01-01T00:00:00.000Z
evidence_iql	string	An IQL statement that attempts to identify the events used to generate the observation. Example: src.ip = '10.10.10.10' AND customer_id = 'chg' AND dce_rpc:dce_rpc_operation = 'NetrSessionEnum' AND timestamp >= t'2019-01-01T22:00:00.000000Z' AND timestamp <= t'2019-01-01T22:10:00.000000Z'

Field	Type	Description
evidence_start_timestamp	timestamp	The timestamp for which the flagged activity began. Example: 2019-01-01T00:00:00.000Z
observation_category	string	The subject of an observation. Example: relationship
observation_class	string	The class of what was observed about the subject. Example: specific
observation_confidence	string	The confidence (high, medium, or low) in the model output to what was attempted to be observed. Example: high
observation_title	string	The title of what was attempted to be detected - similar to a suricata sig name. Example: High Count of NetSession Destinations
observation_uuid	string	A unique identifier for the model used to generate the observation. Multiple models may exist for the same title. Example: ac33189b-ee31-4f5e-b6a1-dcb63d9a7295
sensor_ids	string array	A list of sensors from which activity was used as part of the observation. Example: [chg1,chg2,chg3]

Back to Event Fields.

PE fields

A pe event is created when a Portable Executable file (e.g., Windows .exe or .dll) is transferred or extracted during file analysis. The PE format is the executable file format for Windows binaries.

The following table shows fields unique to the pe event type:

Field	Type	Description
compile_timestamp	timestamp	The compile timestamp extracted from the file Example: 2015-11-12T10:23:51.000Z
file	file-object	The enriched file properties (hashes, size, MIME-type) Example: N/A
has_cert_table	Boolean	Indicates whether the file has an attribute certificate table

Field	Type	Description
		Example: `True`
`has_debug_data`	Boolean	Indicates whether the file has a debug table Example: `True`
`has_export_table`	Boolean	Indicates whether the file has an export table Example: `True`
`has_import_table`	Boolean	Indicates whether the file has an import table Example: `True`
`id`	string	An internal unique identifier for the file Example: `FrkSk6Y0mqKGxMBF6`
`is64_bit`	Boolean	Indicates whether the file is 64-bit Example: `True`
`is_exe`	Boolean	Indicates whether the file is executable or just an object Example: `True`
`machine`	string	The architecture the file was compiled for Example: `I386`
`os`	string	The OS the file was compiled for Example: `Windows XP`
`section_names`	string-array	An array of section names extracted from the file Example: `[.text, .rdata, .data, .rsrc]`
`subsystem`	string	The subsystem the file was compiled for Example: `WINDOWS_GUI`
`uses_aslr`	Boolean	Indicates whether the file supports ASLR Example: `True`
`uses_code_ integrity`	Boolean	Indicates whether the file enforces code integrity checks Example: `True`
`uses_dep`	Boolean	Indicates whether the file supports DEP Example: `True`
`uses_seh`	Boolean	Indicates whether the file uses SEH Example: `True`

Back to Event Fields.

QUIC fields

A quic event is generated when QUIC protocol activity—Google's transport layer network protocol combining UDP and TLS—is detected, providing performance and security for web traffic.

The following table shows fields unique to the QUIC event type:

Field	Type	Description
quic_client_initial_dst_conn_id	string	Destination Connection ID (DCID). This DCID is used for routing and packet protection by client and server. Example: 95412c47018cdfe8
quic_client_protocol	string	QUIC Application-Layer Protocol Negotiation (ALPN) extension. This is the extension's first entry. Example: h3
quic_client_src_conn_id	string	Source Connection ID chosen by the client in its INITIAL packet. This ID is used for packet protection and is typically random and unpredictable. Example: 4823dfc5a047e6acd230b5c5e047ced9b0a6b542
quic_history	string	Provides a history of QUIC protocol activity in a connection, similar to the history field in Conn. Example: ISisH
quic_server_src_conn_id	string	A QUIC-supported server responds to a DCID by selecting a Source Connection ID (SCID). Occurs within the server's first INITIAL packet. Example: 0130dfc5a047e6acd230b5c5e047ced9b0a6bbf0
quic_version	string	A string interpretation of the QUIC version number, usually "1" or "quicv2" Example: 1
server_name_indication	ip_or_domain_enriched	An IP or domain with its enrichments

Back to Event Fields.

RDP fields

An rdp event is created when Remote Desktop Protocol sessions are observed, capturing details like client build, keyboard layout, desktop size, and security negotiation. It tracks remote Windows desktop connections.

Authentication cannot always be determined as the necessary data may be encapsulated within an encrypted tunnel. Therefore, the `result` field may contain a "best-guess" based on available data.

The following table shows fields unique to the RDP event type:

Field	Type	Description
`cert_count`	int	The number of certificates seen Example: `0`
`cert_permanent`	Boolean	Indicates if the provided certificate or certificate chain is permanent Example: `True`
`cert_type`	string	The type of certificate used if the connection is encrypted with native RDP encryption Example: `RSA`
`client_build`	string	The client RDP version Example: `RDP 5.1`
`client_dig_product_id`	string	The client product ID Example: `715e03e8-6eef-4c53-b022-rbcd967`
`client_name`	string	The client hostname Example: `bob-PC`
`cookie`	string	The truncated account name used by the client Example: `bob`
`desktop_height`	int	The client desktop height Example: `1080`
`desktop_width`	int	The client desktop width Example: `1920`
`encryption_level`	string	The encryption level used Example: `Client compatible`
`encryption_method`	string	The encryption method used Example: `128bit`
`keyboard_layout`	string	The client keyboard layout (language) Example: `English -United States`
`requested_color_depth`	string	The color depth requested by the client in the high_color_depth field Example: `32bit`

Field	Type	Description
`result`	string	The result for the connection, derived from a mix of RDP negotiation failure messages and GCC server create response messages Example: `Succeed`
`security_protocol`	string	Security protocol chosen by the server Example: `RDP`

Back to Event Fields.

SMB file fields

An `smb_file` event is generated when files transferred over SMB/CIFS are observed, logging file-related actions like creation, modification, renaming, with metadata like paths and timestamps. This monitors file-level operations in SMB sessions.

The following table shows fields unique to the SMB file event type:

Field	Type	Description
`files`	file-array	Files transferred over the SMB connection Example: N/A
`files.accessed_timestamp`	timestamp	The last time the file was accessed Example: `2018-04-08T22:48:07.958Z`
`files.bytes`	int	The file's size in kilobytes Example: `145922`
`files.changed_timestamp`	timestamp	The last time the file's metadata changed Example: `2018-04-08T22:48:07.958Z`
`files.created_timestamp`	timestamp	The time the file was created Example: `2018-04-08T22:48:07.958Z`
`files.modified_timestamp`	timestamp	The last time the file's content changed Example: `2018-04-08T22:48:07.958Z`
`files.name`	string	The post-transfer name of the file (can be renamed before writing to disk) Example: `secrets.zip`
`files.previous_name`	string	The pre-transfer name of the file Example: `exfil.zip`
`files.smb_path.path`	string	The full network path to the target share Example: `\\DYNACCOUNTIC-DC.dynaccountic.com\sysvol`
`files.smb_path.share`	string	The target network share

Field	Type	Description
		Example: `sysvol`
`files.smb_path.system`	string	The target host Example: `DYNACCOUNTIC-DC.dynaccountic.com`
`smb_action`	string	The action taken on the files Example: `SMB::FILE_OPEN`

Back to Event Fields.

SMB mapping fields

An `smb_mapping` event is created when an SMB share is mapped, capturing tree paths, share types (disk, printer, pipe), and native file system info. It tracks resource sharing mappings over SMB.

The following table shows fields unique to the SMB mapping event type:

Field	Type	Description
`native_file_system`	string	The file system type on the target host (for Disk shares) Example: `NTFS`
`share_type`	string	The type of share established Example: `DISK`
`smb_path.path`	string	The full network path to the target share Example: `\\DYNACCOUNTIC-DC.dynaccountic.com\sysvol`
`smb_path.share`	string	The target network share Example: `sysvol`
`smb_path.system`	string	The target host Example: `DYNACCOUNTIC-DC.dynaccountic.com`
`smb_service`	string	The service used to establish a connection to the share Example: `IPC`

Back to Event Fields.

SMTP fields

An `smtp` event is created when Simple Mail Transfer Protocol messages—such as MAIL FROM, RCPT TO, HELO/EHLO—are observed during an email session. This protocol is used to send email between servers.

The following table shows fields unique to the SMTP event type:

Field	Type	Description
`date`	string	The content of the Date header Example: `Thu, 12 Jul 2015 17:59:01 -0400 (EDT)`
`files`	file-object-array	An array of the files attached to the email
`first_received`	string	The full content of the first Received header Example: `from JIM@GMAIL.COM ([198.51.100.1]) by SALLY@GMAIL.COM ([101.9.210.120]) with mapi id 14.01.1039.013; Thu, 12 Jul 2015 18:09:44 -0500`
`from`	email-object	The content of the From header Example: `jdoe@gmail.com`
`helo`	host-object	The argument supplied to the HELO command Example: `client.example.com`
`in_reply_to`	string	The Message-ID in the In-Reply-To header Example: `<b8bba2baae4c2a08fdff4e223458577d@gmail.com>`
`is_webmail`	Boolean	Indicates whether the message was sent through a webmail interface Example: `true`
`last_reply`	string	The last message the server sent to the client Example: `250 Message accepted for delivery`
`mailfrom`	string	The argument supplied to the MAIL FROM command Example: `support@acme.corp`
`msg_id`	string	The Message-ID of the message Example: `<b8bba2baae4c2a08fdff4e223458577d@gmail.com>`
`path`	ip-object-array	The message transmission path extracted from the Received headers Example: `[192.161.0.200, 204.148.78.113]`
`rcptto`	string	The argument supplied to the RCPT TO command Example: `jdoe@gmail.com`
`reply_to`	email-object	The content of the Reply-To header Example: `jdoe@gmail.com`
`second_received`	string	The content of the second Received header Example: `from JIM@GMAIL.COM ([198.51.100.1]) by SALLY@GMAIL.COM ([101.9.210.120]) with mapi id 14.01.1039.013; Thu, 12 Jul 2015 18:09:44 -0500`

Field	Type	Description
subject	string	The content of the Subject header Example: Click this link!
tls	Boolean	Indicates whether the connection switched to using TLS Example: true
to	email-object-array	The content of the To header Example: [jdoe@gmail.com, kdoe@gmail.com]
trans_depth	int	The depth of this message transaction where multiple messages were transferred in a single connection Example: 1
urls	string-array	A list of URLs extracted from the message Example: [http://malware.pwn//root.ps1, https://www.google.com]
user_agent	string	The content of the client's User-Agent header Example: SquirrelMail/1.4.22
x_originating_ip	ip-object	The content of the X-Originating-IP header Example: 8.8.8.8

Back to Event Fields.

SNMP fields

An snmp event is created when Simple Network Management Protocol messages—used for monitoring and managing network devices—are detected, including version, community string, and request types. It supports network device telemetry.

The following table shows fields unique to the SNMP event type:

Field	Type	Description
snmp_community	string	Community string of the first packet associated with the session Example: public
snmp_display_string	string	A system description of the SNMP responder endpoint Example: Roma v1.9 v9.5.0_W EQ
snmp_duration	number	Amount of time between the first in the session and the latest one seen in seconds Example: 12.209241
snmp_get_bulk_requests	integer	Number of variable bindings in GetBulkRequest PDUs seen for the session

Field	Type	Description
		Example: `3`
`snmp_get_requests`	integer	Number of variable bindings in GetRequest/GetNextRequest PDUs seen for the session Example: `7`
`snmp_get_responses`	integer	Number of variable bindings in GetResponse/Response PDUs seen for the session Example: `2`
`snmp_set_requests`	integer	number of variable bindings in SetRequest PDUs seen for the session Example: `10`
`snmp_up_since`	string	Time at which the SNMP responder endpoint claims it's been up since Example: `2024-09-19T00:00:49.536262Z`
`snmp_version`	string	Version of the protocol being used Example: `2c`

Back to Event Fields.

Software fields

A `software` event is generated when software metadata—such as client or server software versions—is detected via protocol-specific exchanges (e.g. DHCP client, HTTP user-agent).

Software events do not have a `src` or `dst` column like all other event types because they only refer to behavior observed from one host and not the underlying connection.

The following table shows fields unique to the `software` event type:

Field	Type	Description
`host`	ip-object	The host from which the software was observed Example: `10.0.0.10`
`software_name`	string	The name of the observed software Example: `Wget`
`software_type`	string	The category of the observed software Example: `HTTP::BROWSER`
`software_version.additional`	string	Arbitrary notes about the software

Field	Type	Description
		Example: linux-gnu
software_version.major	int	The major version number Example: 1
software_version.minor	int	The first minor version number Example: 19
software_version.minor2	int	The second minor version number Example: 1
software_version.minor3	int	The third minor version number Example: 0
software_version.version	string	The full version string Example: Wget/1.19.1 (linux-gnu)
software_version.version_number	string	The full version number Example: 1.19.1

Back to Event Fields.

SSH fields

An ssh event is created when SSH connection metadata or authentication results—like client/server version strings or auth success/failure—are captured. SSH provides secure remote shell and file transfer capabilities.

Authentication cannot be accurately determined because the necessary data is encapsulated within the encrypted tunnel. Therefore, the auth_success field contains a "best-guess" based on available data.

The following table shows fields unique to the ssh event type:

Field	Type	Description
auth_success	Boolean	The inferred authentication result Example: True
cipher_alg	string	The encryption algorithm used Example: aes128-ctr
client	string	The client version string Example: SSH-2.0-OpenSSH_7.6
compression_alg	string	The compression algorithm used Example: none

Field	Type	Description
direction	string	The direction of the connection, Outbound if the client was a local host logging into an external host and Inbound in the opposite situation Example: Inbound
host_key	string	The server fingerprint Example: a1:a2:79:80:6d:b1:77:82:d8:6c:aa:ee:25:19:23:42
host_key_alg	string	The server's key algorithm. Example: ssh-rsa
kex_alg	string	The key exchange algorithm used Example: ecdh-sha2-nistp256
mac_alg	string	The signing (MAC) algorithm used Example: hmac-sha1
server	string	The server version string Example: SSH-2.0-OpenSSH_7.4
ssh_version	int	The SSH major version (1 or 2) Example: 2

Back to Event Fields.

SSL fields

An ssl event is generated when secure session negotiations are observed, logging details like cipher suite, certificate chain, server name, and session resume status. It provides insight about encrypted communications by parsing and logging the connection's metadata.

The following table shows fields unique to the ssl event type:

Field	Type	Description
cipher	string	The cipher suite selected by the server Example: TLS_ECDHE_ECDSA_WITH_AES_128_GCM_SHA256
client_issuer	string	The Issuer field of the client's certificate Example: CN=Google Internet Authority G2,O=Google Inc,C=US
client_subject	string	The Subject field of the client's certificate Example: CN=*.google.com,O=Google Inc
issuer	string	The Issuer field of the server's certificate Example: CN=Google Internet Authority G2,O=Google Inc,C=US

Field	Type	Description
`ja3`	string	The computed JA3 hash for the client Example: `4d7a28d6f2263ed61de88ca66eb011e3`
`ja3s`	string	The computed JA3 hash of the server Example: `4d7a28d6f2263ed61de88ca66eb011e3`
`ja4`	*string*	The computed JA4 hash for the client hello packet Example: `t13d1516h2_acb858a92679_e5627efa2ab1`
`server_name_indication`	domain-object	The enriched Server Name Indication set by the client Example: `www.google.com`
`session_id`	string	The ID used for session resumption (deprecated) Example: N/A
`subject`	string	The Subject field of the server's certificate Example: `CN=*.google.com,O=Google Inc`
`validation_status`	string	Result of certificate validation for this connection (deprecated) Example: `Success`
`version`	string	The SSL/TLS version being used (period omitted) Example: `TLSv10`

Back to Event Fields.

Suricata fields

A `suricata` event is created when Suricata (an intrusion detection tool) alerts or metadata are integrated into Zeek logs, highlighting threat detection signatures and behaviors.

Suricata runs independently from the metadata extraction process, and thus is not tied to `flow` events with a `flow_id` even though both a `suricata` and `flow` event will exist for the traffic. Additionally, directionality is not maintained by Suricata, so the `src.ip` and `dst.ip` fields for a `suricata` event may be reversed from the related `flow`.

The following table shows fields unique to the `suricata` event type:

Field	Type	Description
`payload`	byte-array	Payloads are generated by the sensor’s IDS engine. This field displays the raw payload from traffic that matched a detection signature. This ASCII representation helps you determine whether the traffic is malicious or benign.

Field	Type	Description
		Payloads are disabled by default due to the potential exposure of sensitive or personally identifiable information (PII). When enabled, you can click the field to view the payload in FortiNDR Cloud. Payloads can be enabled upon request through Fortinet Support.
`proto`	string	The transport layer protocol used. Example: `tcp`
`sig_category`	string	The query's category. Example: `A Network Trojan was Detected`
`sig_id`	int	The query's ID. Example: `2024290`
`sig_name`	string	The query's name. Example: `ET TROJAN Jaff Ransomware Checkin M1`
`sig_rev`	float	The query's revision number. Example: `2`
`sig_severity`	int	The query's severity rating (1 = high, 3 = low) Example: `1`

Back to Event Fields.

Tunnel fields

A `tunnel` event is generated when tunneled sessions—such as VPN, SSH tunnels, or other encapsulations—are detected, noting tunnel types and actions. This event helps trace encapsulated traffic flows.

The following table shows fields unique to the Tunnel event type:

Field	Type	Description
`tunnel_action`	string	The action taken on the tunnel Example: `Tunnel::DISCOVER`
`tunnel_type`	string	The protocol/application running over the tunnel Example: `Tunnel::HTTP`

Back to Event Fields.

x509 fields

An `x509` event is created when X.509 certificates exchanged in TLS/SSL sessions are parsed and logged, capturing certificate metadata, fingerprints, extensions, and alternate names.

The following table shows fields unique to the x509 event type:

Field	Type	Description
`ca_constraints`	Boolean	Indicates whether the CA flag is set Example: `False`
`ca_constraints_len`	int	The maximum path length Example: `10`
`cert_id`	string	The file ID of the certificate Example: `FNbDqq2ZxjNk10D7ie`
`issuer`	string	The content of the Issuer field Example: `O=Internet Widgits Pty Ltd,ST=Some-State,C=AU`
`key_len`	int	The length of the key Example: `2048`
`key_type`	string	The type of key used Example: `rsa`
`san_dns`	host-array	The list of DNS entries in the SAN Example: `[*.outlook.com, *.office365.com]`
`san_email`	email-array	The list of email entries in the SAN Example: `[dave@email.corp]`
`san_ip`	ip-array	The list of IP entries in the SAN Example: `[169.254.1.1]`
`san_uri`	uri-array	The list of URI entries in the SAN Example: `[https://169.254.1.1]`
`serial`	string	The serial number of the certificate Example: `E3BD4F4F884EADDA`
`subject`	string	The content of the Subject field Example: `O=Internet Widgits Pty Ltd,ST=Some-State,C=AU`
`valid_end`	timestamp	The time before the certificate became valid Example: `2018-01-11T14:35:34.000Z`
`valid_start`	timestamp	The time once the certificate becomes invalid Example: `2018-01-11T14:35:34.000Z`
`version`	string	The X.509 version Example: `3`

Back to Event Fields.

IQL operators

The following operators are supported in IQL.

- Comparison operators on page 223
- Logical operators on page 224
- Exclude operators on page 224
- Pattern operators on page 225
- Units on page 225
- Supported units on page 225
- Fields with units on page 226

Comparison operators

Comparison operators are used to compare fields to values. The following comparison operators are supported by IQL.

Operator	Description	Example
`=`, `==`	Equals	`ip = 8.8.8.8`
`!=`, `<>`	Does not equal	`ip != 8.8.8.8`
`IN`	Set/list operator - the field matches any of the listed values	`ip IN (8.8.8.8, 8.8.4.4)`
`>`	Greater than	`ip_bytes > 100`
`<`	Less than	`ip_bytes < 100`
`>=`	Greater than or equal to	`ip_bytes >= 100`
`<=`	Less than or equal to	`ip_bytes <= 100`

Most comparison operators are standard and intuitive. However, the `IN` operator has two behaviors worth mentioning:

- The values in the list must all be of the same type
- The values in the list will all be treated as exact matches
  - Fuzzy matches in lists are not supported

Also, the absence of a property can be tested by comparing the desired field to the `null` keyword.

```
// Returns HTTP requests that did not receive a response
```

```
http:status_code == null
```

Logical operators

Logical operators are used to chain clauses together to form a more complex query.

Operator	Description	Example
`AND`	Both clauses must be satisfied	`ip = 8.8.8.8 AND port = 53`
`OR`	Only one clause must be satisfied	`ip = 8.8.8.8 OR port = 53`
`NOT`	The inverse must be true (applied to other operators)	`ip NOT IN (10.0.0.10, 8.8.8.8)`

Logical operators allow chaining of multiple clauses. However, in the case of `AND`, all field comparisons must apply, which means all event-types involved must support all fields referenced. For example, the following query is illegal because `flow` events don't have a `qtype_name` field and `dns` events don't have a `service` field. In other words, no single event can have both a `flow`-specific field and a `dns`-specific field.

```
// invalid no single event can be both FLOW and DNS
```

```
dns:qtype_name = 'A' AND flow:service = 'dns'
```

The above example does not apply to the `OR` operator because a single event could be either a `dns` event or a `flow` event.

```
// This is ok, because a single event could match just one clause
```

```
dns:qtype_name = 'A' OR flow:service = 'dns'
```

Exclude operators

The `exclude` operator, for example, A exclude B, provides relative complement filtering that allows all items matching a criteria to be excluded from the result set.

For example, `event_type = 'flow' and ip != 10.30.0.3` may return an event with `src.ip = 10.30.0.1` and `dst.ip = 10.30.0.3` because `src.ip` satisfies the constraint that the event has an ip field that is not `10.30.0.3`. This may not be the desired intention. In comparison, `event_type = 'flow' exclude ip = 10.30.0.3` would not return the event previously described. It will only return flow events excluding those events that match `ip = 10.30.0.3`.

Syntax:

The exclude operator is a low precedence, infix operator with left associativity. For example, with A, B, and X below representing complex expressions:

- A exclude X ## base example of matching everything in A except what matches X
- A and B exclude X ## this is the same as (A and B) exclude X
- A or B exclude X ## this is the same as (A or B) exclude X
- A exclude X and Y ## this is the same as A exclude (X and Y)
- A exclude X or Y ## this is the same as A exclude (X or Y)

- A exclude X exclude Y ## this is the same as (A exclude X) exclude Y which is the same as A exclude (X or Y)
- (A exclude X) and (B exclude Y) ## example of using exclude in a restricted context
- exclude X ## This is a special case and interpreted as * exclude X

Pattern operators

Pattern operators allow you to identify strings that contain certain patterns. The `LIKE` operator provides simple fuzzy matching, while the `MATCHES` operator provides access to Regex for more complex pattern matching.

Operator	Description	Example
`LIKE`	The `LIKE` operator supports simple pattern matching using `%` (any number of characters) and _ (a single character).	`domain NOT LIKE "%.google.com"`
`MATCHES`	Regex matching	`domain MATCHES ".*\.(com|net|org|edu)"`

Strings must be provided to pattern operators, meaning the characters must be surrounded by quotes. For the `LIKE` operator, the exact string will be matched if no wildcards exist in the provided string.

Units

IQL supports units for several numeric fields. Units are optional but can greatly increase readability of queries that use time, size, or distance values. Here are some examples:

```
dst.ip_bytes > 5MB  // will convert 5MB to 5242880 bytes
```

```
dst.ip_bytes > 5.5mb  // will convert 5.5mb to 5767168 bytes
```

Unit labels are case insensitive.

Supported units

Name	Type	IQL Label
`bytes`	*size*	b
`kilobytes`	*size*	kb
`megabytes`	*size*	mb

Name	Type	IQL Label
gigabytes	*size*	gb
terabytes	*size*	tb
petabytes	*size*	pb
miles	*distance*	mi
kilometers	*distance*	km
nanoseconds	*time*	ns
microseconds	*time*	us
miliseconds	*time*	ms
seconds	*time*	s
minutes	*time*	m
hours	*time*	h
days	*time*	d

Fields with units

Fields	Units
geo_distance	miles
lease_duration	seconds
ip_bytes	bytes
duration	seconds
total_ip_bytes	bytes
request_len	bytes
file.bytes	bytes

Advanced Query Concepts

Putting it all together

The following query searches for outbound traffic from an internal network to external destinations. It also looks for traffic that is going through a proxy server that acts as an intermediary between a device and the internet.

```
// Outbound traffic
(
   http:src.internal = true
   OR http:source IN ("Zscaler")
)
AND (
   dst.internal = false
   OR (
         // Not internal IP address
         host.internal != true
         // Proxied traffic
         AND uri.scheme != null
   )
)
```

Outbound Traffic	The query is looking for traffic that is leaving the internal network.
Conditions for Source	• `http:src.internal = true`: The source of the traffic is internal. • `http:source IN ("Zscaler")`: The source is from Zscaler, a cloud security company.
Conditions for Destination	• `dst.internal = false`: The destination is external (not internal). • `host.internal != true`: The host is not internal.

Array matching

Array matching

The following table provides example queries for array matching where `answers.ip` is the array field:

Show me events where at least one answer value is:	Query
8.8.8.8	`answers.ip = 8.8.8.8`
not 8.8.8.8	`answers.ip != 8.8.8.8`

8.8.8.8 and one is not 8.8.8.8	`answers.ip = 8.8.8.8`
	`AND answers.ip != 8.8.8.8`

Excluding values in DNS queries

The != operator will not exclude values in a DNS query (*answers.ip != 8.8.8.8*). Instead, you will need to use the EXCLUDE condition:

```
event_type = "dns"
EXCLUDE answers.ip = 8.8.8.8
```

Using Curly Braces for multiple Conditions

Curly braces {} are used to group multiple conditions together in an array of objects, such as `intel` and `files`. This helps to specify detailed criteria for your queries.

Format:

```
<array of objects field> {
    <subfield> <operator> <value>
    …
}
```

Examples:

In the following example, the query will return results for both confidence and severity.

High-Confidence and High-Severity Intel Matches	
Query	Show me events with a high-confidence intel match and a high-severity intel match.

Syntax	`intel.confidence = "high"`
	`AND intel.severity = "high"`

In the following example, the curly braces {} help to group the conditions together, making it clear that both conditions must be met within the same intel object.

High-Confidence and High-Severity Intel Matches	
Query	Show me events with a high-confidence intel match and a high-severity intel match.

Syntax	`intel {`
	`   confidence = "high"`
	`   AND severity = "high"`
	`}`

Aggregations

An aggregation is achieved by adding GROUP BY at the end of the query, this allows for summarizing data, typically resulting in event counts by default. The portal provides both visual and tabular representations of these results.

Aggregations can include up to two unambiguous fields, with default limits of 100 and 10, respectively, which can be adjusted but must not exceed a product of 10,000. High-entropy fields like *uuid* and *flow_id* cannot be used. Functions such as SUM, MIN, and MAX are available.

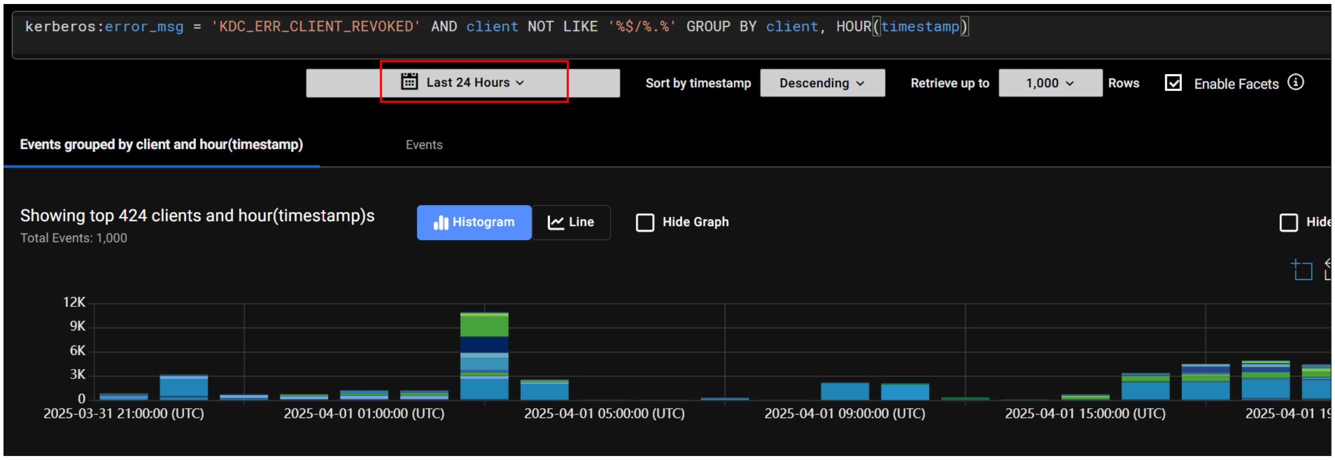
Example:

The following query identifies Kerberos authentication errors where the client's credentials have been revoked and groups the results by the client name.

```
kerberos:error_msg = 'KDC_ERR_CLIENT_REVOKED' AND client NOT LIKE '%$/%.%' GROUP BY client LIMIT 10
```

Kerberos Error Message	`kerberos:error_msg = 'KDC_ERR_CLIENT_REVOKED'`: This looks for Kerberos errors with the specific message `KDC_ERR_CLIENT_REVOK`. This error indicates that the client's credentials have been revoked by the Key Distribution Center (KDC).
Client Filtering	`client NOT LIKE '%$/%.%'`: This condition filters out clients that have a dollar sign ($) or a period (.) in their name. Typically, in Kerberos, machine accounts end with a dollar sign, so this filter is excluding machine accounts.
Grouping and Limiting	`GROUP BY client`: This groups the results by the client name. `LIMIT 10`: This limits the output to the top 10 results.

The query results will look like this:



```
kerberos:error_msg = 'KDC_ERR_CLIENT_REVOKED' AND client NOT LIKE '%$/%.%' GROUP BY client, HOUR(timestamp)
```

Last 24 Hours ⌄ Sort by timestamp Descending ⌄ Retrieve up to 1,000 ⌄ Rows ☑ Enable Facets ⓘ

Events grouped by client and hour(timestamp) Events

Showing top 424 clients and hour(timestamp)s
Total Events: 1,000

Histogram
Line
□ Hide Graph
□ Hide
12K
9K
6K
3K
0
2025-03-31 21:00:00 (UTC)
2025-04-01 01:00:00 (UTC)
2025-04-01 05:00:00 (UTC)
2025-04-01 09:00:00 (UTC)
2025-04-01 15:00:00 (UTC)
2025-04-01 1

De Morgan’s Law

You cannot use the NOT operator to negate a group of clauses directly. This means you cannot write a query like:

```
NOT (
    dst.ip = 8.8.8.8
    AND host = "dns.google.com"
)
```

Instead, you need to apply the NOT operator to each clause individually and then combine them using the OR operator. The equivalent query would be:

```
NOT dst.ip = 8.8.8.8
OR NOT host = "dns.google.com"
```

This way, the query will return results where either the `dst.ip` is not `8.8.8.8` or the `host` is not `dns.google.com`. This ensures that at least one of the conditions is not met.

De Morgan’s Law does not apply to array fields. An array field is an array of values as opposed to a number or a string. The `answers.ip` field is an example is an example of an array.
In the following example, the two conditions can both be true at the same time:

```
answers.ip = 8.8.8.8
answers.ip != 8.8.8.8
```

Field reference

This section describes how to use fields including where flexibility exists and the implications of that flexibility.

- Schema and field references on page 230
- Event-type expansion on page 230
- Field expansion on page 231
- Synthetic fields on page 232

Schema and field references

Queries are evaluated against the events datastore. Every event type has a set of properties – we refer to them as **fields** – that carry data of a defined primitive type. For instance, every event has a `sensor_id` property that is of type `string` and a `timestamp` property of type `timestamp`. The full schema for all available event types and their properties is available within the Event Types page.

All queries consist fundamentally of matching an event field against a value; for instance, "Show me all events for which the destination IP is 8.8.8.8." However, there is some room for flexibility. Do you really want *all* event types, or is there one in particular you're interested. Do you really want to restrict results to cases where 8.8.8.8 is the *destination* IP address, or would any involvement of that IP address be interesting?

Each field involved in a query must be resolved to a specific field of a specific event type. A fully-specified field is of the format `event-type:field`; for instance, `flow:sensor_id` and `dns:dst.geo.country` are both fully specified. For a field that's not fully specified, either by omitting the event type or part of the field, the system will expand the field to include all fully-qualified fields that fit the ambiguity.

The next two subsections will show how these expansions work and what their implications are.

Event-type expansion

A field without a specifed event type will infer all valid event types. For example, `dns` and `flow` events both have a `proto` field, so a query containing just `proto` without an event-type prefix will expand to include both event types. Effectively, the query on the first line below is rewritten by the query engine on the backend to the query on the second line.

```
// original query
```

```
proto = 'udp'
```

```
// rewrite produced by the query engine on the backend
```

```
dns:proto = 'udp' OR flow:proto = 'udp'
```

If a field only belongs to one event type, then the event type does not need to be specified since the results would be the same. For example, the `qtype_name` field is unique to the `dns` event type, so only one event type can be inferred. This means that the two queries below are equivalent.

```
// original query
```

```
qtype_name = 'A'
```

```
// the rewrite is equivalent
```

```
dns:qtype_name = 'A'
```

Field expansion

Some fields hold values of a structural type (Event Type and Fields), meaning they contain subfields that must be referenced. To make this clear, let's use the `src` field as an example. The `src` field is of the type *ip-object*, i.e. a JSON structure. Looking at the following code block, we couldn't compare `src` to an IP address because we'd have to specify the entire JSON structure for them to match on structure. Instead, we must compare the `ip` subfield to an IP address.

```
// invalid because src is type ip-object and we're comparing it to an ip
```

```
src = 10.0.0.10
```

```
// valid because src.ip is type ip and we're comparing it to an ip
```

```
src.ip = 10.0.0.10
```

If a subfield is used without the parent field, the query will be expanded to include all valid parent fields. For instance, the subfield `ip` could expand to `dst.ip`, `src.ip`, and a number of others. The block below shows the complete expansion for the `ip` field in a `dns` event.

```
// original query
```

```
dns:ip = 10.0.0.10
```

```
// rewritten to expand the unspecified parent field
```

```
dns:src.ip = 10.0.0.10 OR dns:dst.ip = 10.0.0.10 OR dns:answers.ip = 10.0.0.10
```

Event-type and field expansion can be applied to the same query. For example, if we simply specified the `ip` field, the query engine would expand to all possible parent fields in all possible event types.

```
// original query
```

```
ip = 10.0.0.10
```

```
// complete expansion of event type and parent field (truncated)
```

```
dns:src.ip = '10.0.0.10' OR dns:dst.ip = '10.0.0.10' OR dns:asnwers.ip = 10.0.0.10 OR flow:src.ip
= '10.0.0.10' OR flow:dst.ip = '10.0.0.10'
```

Synthetic fields

A **synthetic field** is a field that doesn't exist in an event record, i.e. it isn't static. Synthetic fields are dynamically evalutated and converted into static values before your IQL query is run against the event data store. This enables more robust capabilities that aren't possible with a simple query of static values.

Synthetic fields begin with a `$`. The example query below demonstrates the `$device` synthetic field, which enables a user to search for a source or destination device by hostname or MAC address instead of just the observed IP address. The hostname is evaluated behind the scenes to produce a large array of IP addresses and valid time ranges, which are then used to query the event data store.

```
src.$device.hostname = 'FinanceWks008' and dst.internal = false
```

FORTINET®

www.fortinet.com