Detections

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The ExtraHop system applies machine learning techniques and rule-based monitoring to your wire data to identify unusual behaviors and potential risks to the security and performance of your network.

Before you begin
Users must be granted privileges to view detections.

When anomalous behavior is identified, the ExtraHop system generates a detection and displays the available data and investigative options. Controls on the Detections page help you group, filter, and sort your view of detections, so you can quickly triage issues with critical systems first and begin investigating potential security risks.

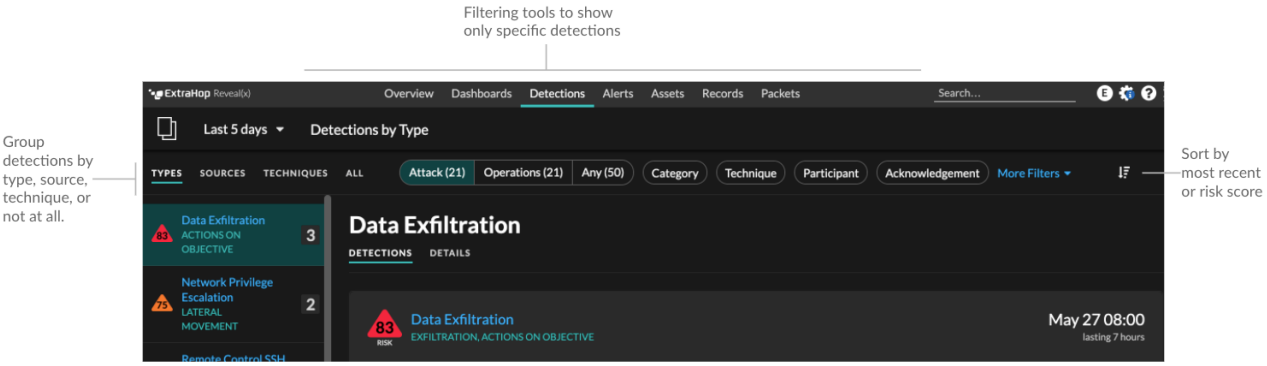
Detections can help you defend your network in the following ways:

- Collect high-quality, actionable data to find the root causes behind network issues.
- Find unknown issues with performance, security, or infrastructure.
- Identify malicious behavior that is associated with different attack categories or MITRE techniques.
- Connect related detections to track prolonged attack campaigns.
- Flag suspicious IP addresses, hostnames, and URIs identified by threat intelligence.

Important: Although detections can inform you about security risks and performance issues, detections do not replace decision-making or expertise about your network. Always investigate security and performance detections to determine the root cause of unusual behavior and when to take action.

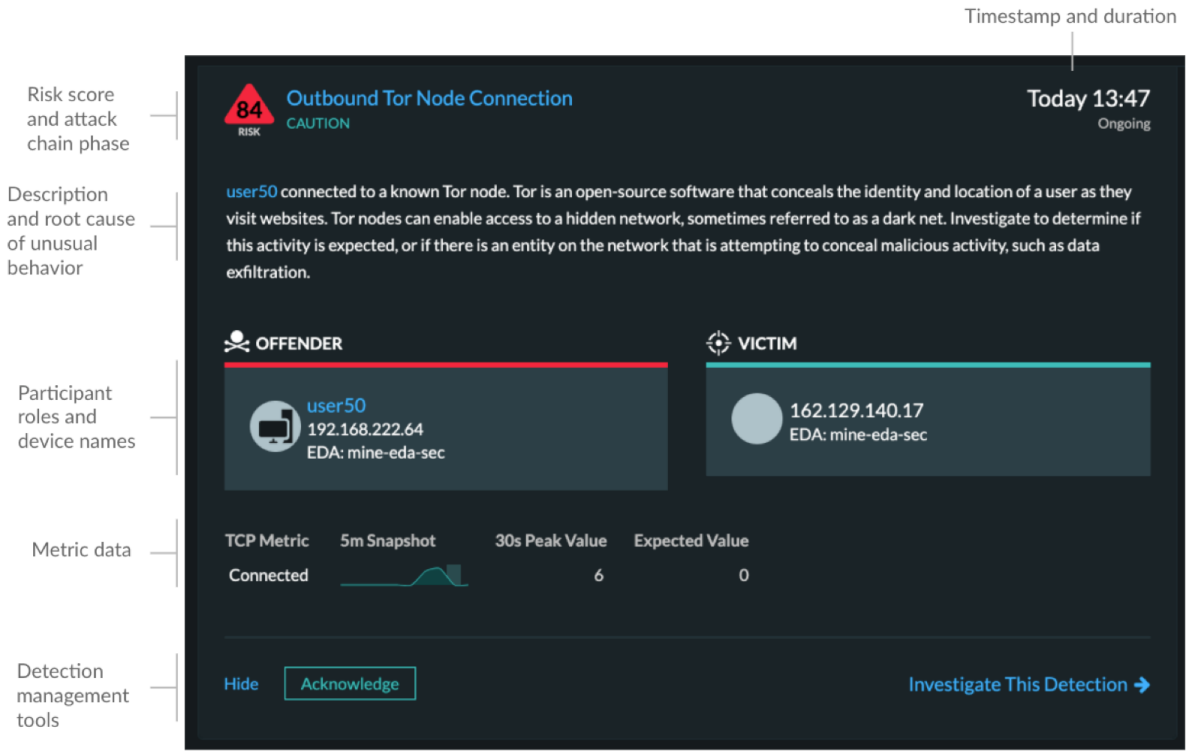
Navigating detections

Detection cards appear in a sortable list that can be further grouped and filtered by multiple criteria on the main Detections page. Click any detection card to navigate to the detection detail page.



Detection cards

Each detection card identifies the cause of the detection, the detection category, when the detection occurred, and the victim and offender participants. Security detections include a risk score.



Risk score

Measures the likelihood, complexity, and business impact of a security detection. This score provides an estimate based on factors about the frequency and availability of certain attack vectors against the necessary skill levels of a potential hacker and the consequences of a successful attack. The icon is color coded by severity as red (80-99), orange (31-79), or yellow (1-30).

Participants

Identifies each participant (offender and victim) involved in the detection by hostname or IP address. Hover over a participant to view basic details and access links. Internal endpoints display a link to the device overview page; external endpoints display the geolocation of the IP address and links to the ARIN Whois website and IP address detail page.

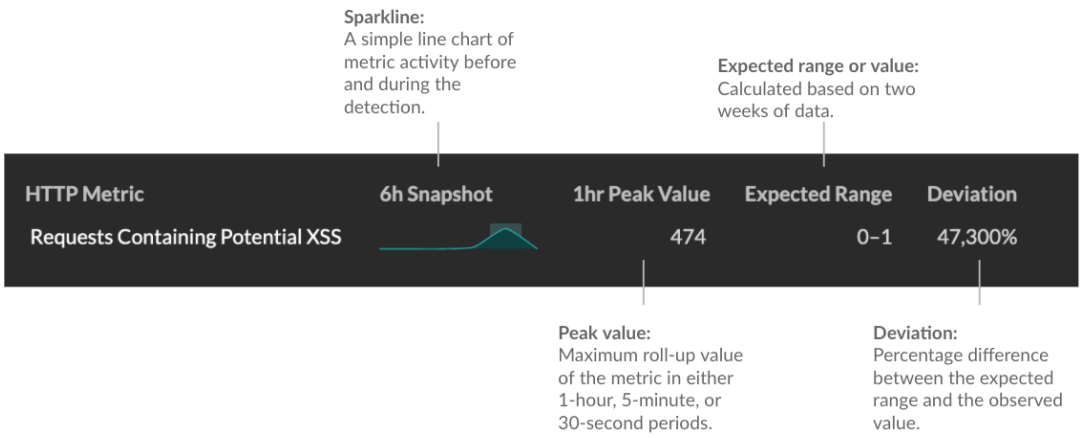
When grouping the Detection page by **Sources**, you can click **Details** under the source name to view a summary of detections where that source was a participant. These device details are displayed next to the detection card on wide screens (1900 pixels or greater).

Duration

Identifies how long the unusual behavior was detected or displays ONGOING if the behavior is currently occurring. The minimum duration of a detection is 30 seconds.

Metric data

Identifies additional metric data when the unusual behavior is associated with a specific metric or key. If metric data is unavailable for the detection, the type of anomalous protocol activity is displayed.



You can hide or acknowledge the detection or click **Investigate This Detection** to navigate to the detection detail page.

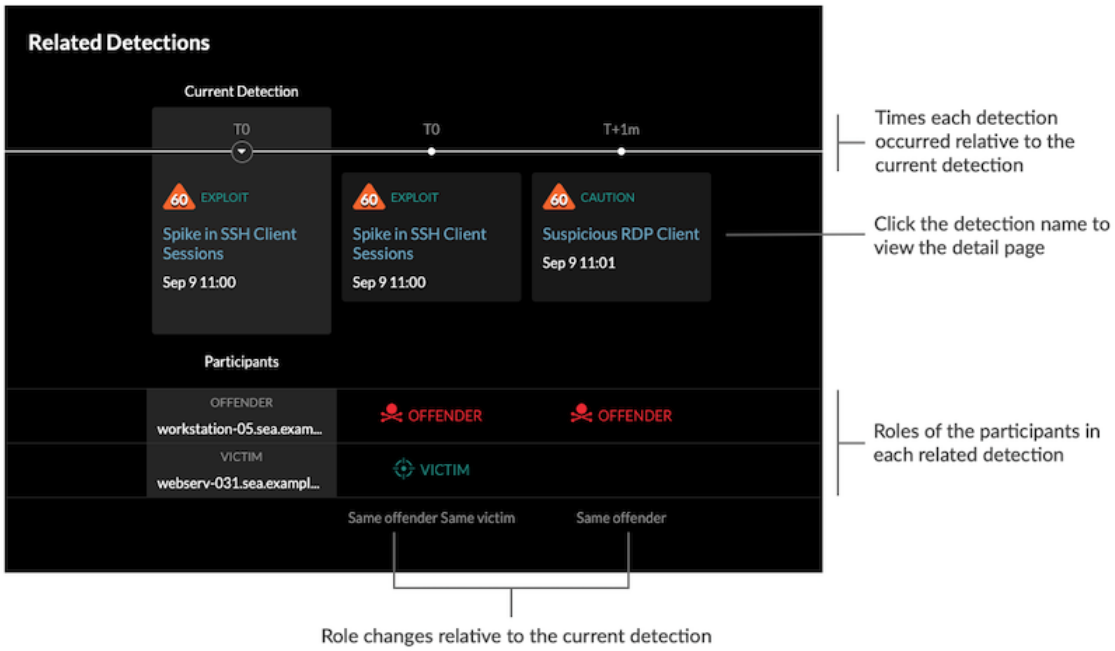
Detection detail page

Most of the data that you need to understand, validate, and investigate a detection appears on the detection detail page: tables of relevant metric data, record transactions, and links to raw packets.

The detection card information is followed by all available sections for the detection. These sections vary depending on the type of the detection.

Related detections

Provides a timeline of detections related to the current detection that can help you identify a larger attack campaign. Related detections include the participant role, duration, timestamp, and any role changes if the offender in one detection becomes the victim in a different detection. Click any related detection in the timeline to view the details page for that detection.



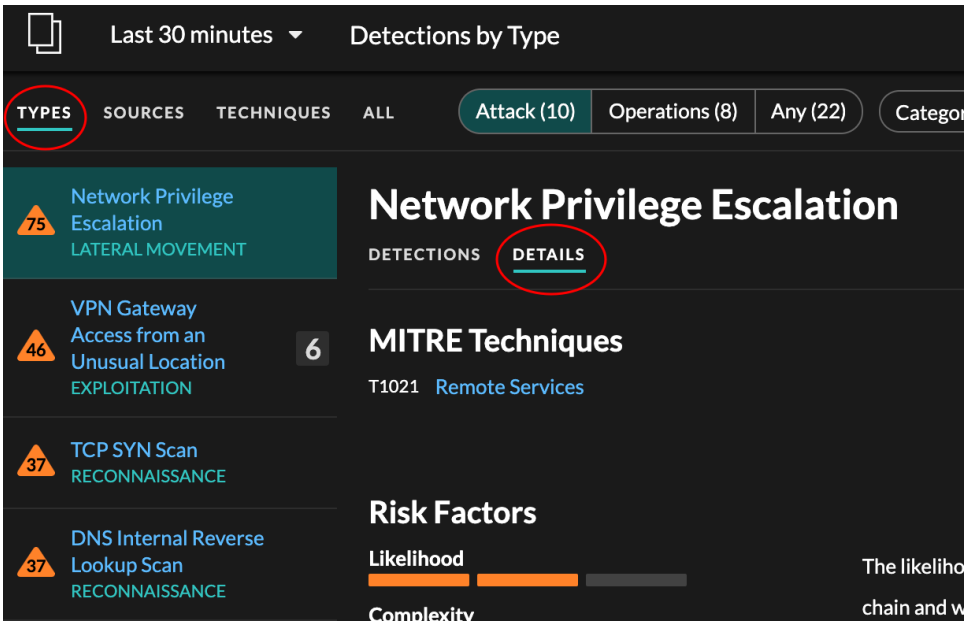
Investigative data and links

Provides all available data about the detection, such as metrics from the targeted servers and clients and their record transactions. Click the icon to view the raw packets associated with the detection.

Detection details

Provides an expanded description of the detection, such as associated MITRE techniques, risk factors, attack backgrounds and diagrams, mitigation options, and reference links to security organizations such as MITRE.

These details are displayed next to the detection card on wide screens (1900 pixels or greater), or you can access them by clicking **Details** under the detection title when grouping the Detection page by **Types**.



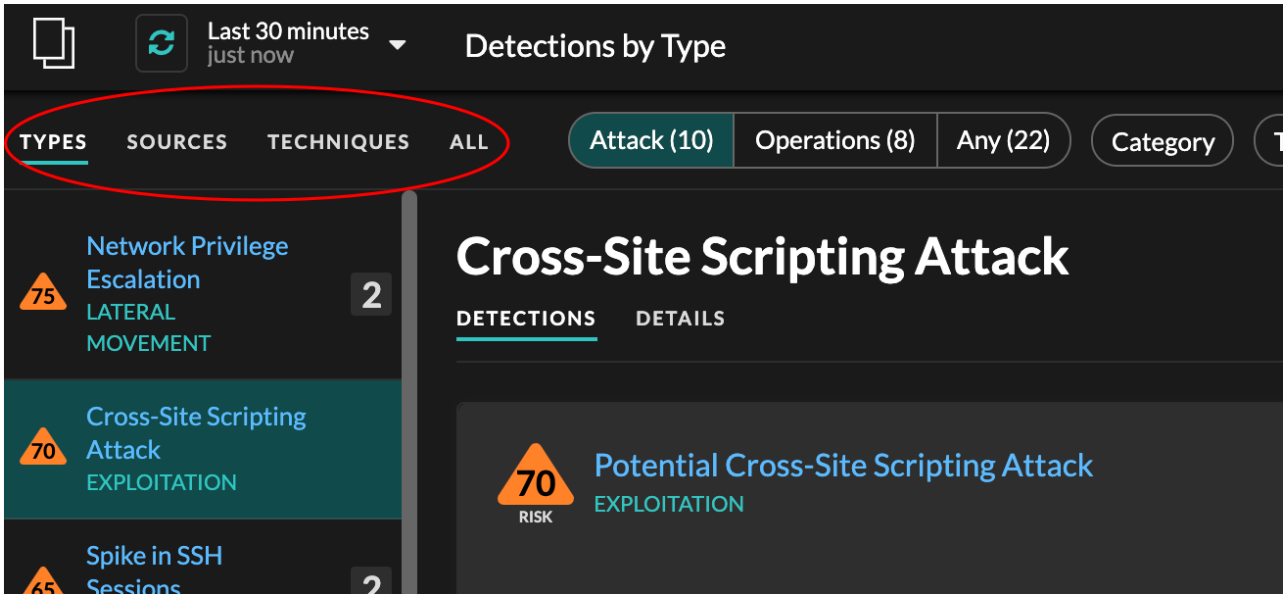
Tip: You can share detection detail pages with other ExtraHop users.

Grouping, filtering, and sorting detections

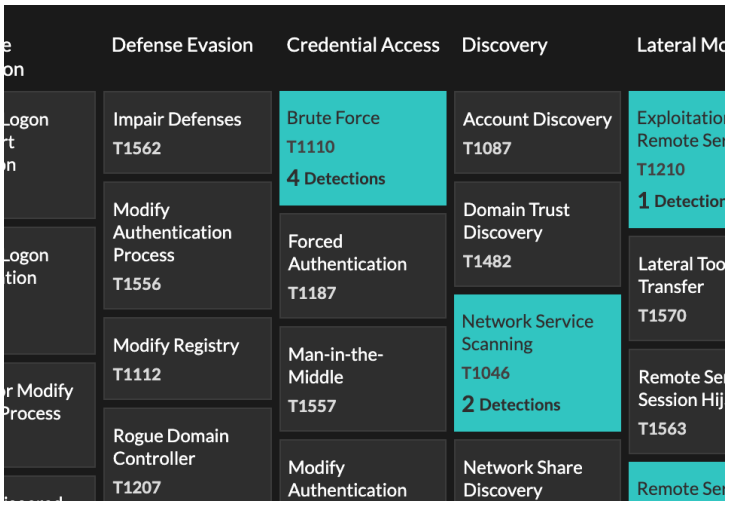
By default, detections are grouped by **Types** and sorted by risk on the Detections page. There are three types of controls at the top of the page that modify your page view: groups, filters, and sort.

Grouping detections

You can group detections to organize the page by **Types** of detection (such as Spike in SSH Sessions), by detection **Sources** (offender or victim hostname or IP address), by MITRE **Techniques** (a common attack classification framework), or show **All** detections for the current time interval.



When grouping by **Techniques**, you see attack techniques organized in a matrix according to the MITRE ATT&CK® Matrix for Enterprise. Each tile in the matrix represents a MITRE technique. If a tile is highlighted, that means that a detection associated with that technique occurred during the selected time interval. Click on any tile to see detections that match that technique.



Timeline

When you group by **All** on the Detections page, a timeline chart displays the total number of detections identified within the selected time interval. Each horizontal bar in the chart represents the duration of a single detection and is color-coded according to the risk score.

- Click and drag to highlight an area on the chart to zoom in on a specific time range. Detections are listed for the new time interval.
- Hover over a bar to view the detection title.
- Click a bar to navigate directly to the detection detail page.

Security

Most network attacks tend to follow familiar patterns or phases. All security detections are assigned an attack category that corresponds with one of these phases.

When you group by **All** on the Detections page, a flow chart displays the number of detections that are associated with each attack category. Categories are assembled into an attack chain that characterizes the progression of steps an attacker takes to ultimately achieve their objective, such as stealing sensitive data.

Filtering detections

You can filter the Detections page to display only the detections that match your specified criteria. For example, you might only be interested in exfiltration detections that occur over HTTP, or detections associated with participants that are critical servers.

Attack

Show only detections that are associated with an attack category. Combine this filter with the **Category** filter to only show detections from a specific attack category.

Operations

Show only detections that are associated with network, application, and infrastructure problems. Combine this filter with the **Category** filter to show only detections within a specific performance or IT operations category.

Any

Shows detections from both **Attack** and **Operations** filters.

Category

Attack and **Operations** detections have categories that can further refine your view of the Detections page.

Attack detections include the following categories that match phases of the attack chain.

Command & Control

An external server that has established and maintained connection to a compromised device on your network. C&C servers can send malware, commands, and payloads to support the attack. These detections identify when an internal device is communicating with a remote system that appears to be acting as a C&C server.

Reconnaissance

An attacker is seeking high-value targets and weaknesses to exploit. These detections identify scans and enumeration techniques.

> **Note:** Detections might identify a known vulnerability scanner such as Nessus and Qualys. Click the device name to confirm if the device is already assigned a Vulnerability Scanner role in the ExtraHop system. To learn how to hide detections related to these devices, see Create a detection rule.

Exploitation

An attacker is taking advantage of a known vulnerability on your network to actively exploit your assets. These detections identify unusual and suspicious behaviors associated with exploitation techniques.

Lateral Movement

An attacker has infiltrated your network and is moving from device to device in search of higher-value targets. These detections identify unusual device behavior associated with east-west corridor data transfers and connections.

Actions on Objective

The attacker is close to achieving their objective, which can vary from stealing sensitive data to encrypting files to ransom. These detections identify when an attacker is close to completing a campaign objective.

Operation detections include the following categories.

Caution

Highlight security policies and standards that should be enforced to mitigate risk. These detections identify areas of risk on your network that might require attention, such as expiring certificates or software that should be patched.

Authentication & Access Control

Highlight unsuccessful attempts by users, clients, and servers to log in or access resources. These detections identify potential WiFi issues over authentication, authorization, and audit (AAA) protocols, excessive LDAP errors, or uncover resource-constrained devices.

Database

Highlight access problems for applications or users based on analysis of database protocols. These detections identify database issues, such as database servers that are sending an excessive number of response errors that might cause slow or failed transactions.

Desktop & App Virtualization

Highlight long load times or poor quality sessions for end users. These detections identify application issues, such as an excessive number of Zero Windows, which indicates that a Citrix server is overwhelmed.

Network Infrastructure

Highlight unusual events over the TCP, DNS, and DHCP protocols. These detections might show DHCP issues that are preventing clients from obtaining an IP address from the server, or reveal that services were unable to resolve hostnames due to excessive DNS response errors.

Service Degradation

Highlight service issues or performance degradation associated with Voice over IP (VoIP), file transfer, and email communications protocols. These detections might show service degradations where VoIP calls have failed and provide the related SIP status code, or show that unauthorized callers have attempted to make several call requests.

Storage

Highlight problems with user access to specific files and shares found when evaluating network file system traffic. These detections might show that users were prevented from accessing files on Windows servers due to SMB/CIFS issues, or that network-attached storage (NAS) servers could not be reached due to NFS errors.

Web Application

Highlight poor web server performance or issues observed during traffic analysis over the HTTP protocol. These detections might show that internal server issues are causing an excessive number of 500-level errors, preventing users from reaching the applications and services they need.

Technique

Highlight detections that match specific MITRE technique IDs. The MITRE framework is a widely recognized knowledgebase of attacks.

Participant

The offender and victim endpoints associated with a detection are known as participants. You can filter your detection list to only show detections for a specific participant, such as an offender that is an unknown remote IP address, or a victim that is a critical server.

Acknowledgement

Show detections that have been acknowledged or that are unacknowledged.

More Filters

You can also filter your detections by the following criteria:

- Device roles
- Protocol
- Appliance (Command appliance only)
- Ticket information

Sorting detections

You can sort detections to organize the grouped and filtered list by either the highest risk score or most recent occurrence. Click the sort icon to the far right to select an option.

Finding detections in the ExtraHop system

While the Detections page provides quick access to all detections, there are indicators and links to detections throughout the ExtraHop system.

- From the Activity page, click a detections link to go to the Detections page. The detections list is filtered to the associated protocol.
- From a device Overview page, click Detections to view a list of associated detections. Click the link for an individual detection to view the detection details page.
- From a device group Overview page, click the Detections link to go to the Detections page. The detections list is filtered to the device group as the source.
- From a device or device group protocol page, click the Detections link to go to the Detections page. The detections list is filtered to the source and protocol.
- On an activity map, click a device that displays animated pulses around the circle label to view a list of associated detections. Click the link for an individual detection to view detection details.
- From a chart on a dashboard or protocol page, hover over a detection marker to display the title of the associated detection or click the marker to view detection details.