Technical Brief

STAMUS NETWORKS

Understanding Declarations of Compromise® and Declarations of Policy Violations®

High-fidelity Incident Events from Clear NDR®

Executive Summary

Clear NDR generates two critical types of events that represent high-fidelity, asset-oriented security incidents designed to streamline threat detection and incident response: Declarations of Compromise (DoC) and Declarations of Policy Violations (DoPV).

Both incident types share fundamental characteristics — they are asset-specific, high-confidence detections with near-zero false positives and provide comprehensive evidence collection for effective investigation.

Declarations of Compromise (DoC) focus on security threats, detecting serious and imminent dangers such as malware, lateral movement, and advanced persistent threats (APTs). DoCs dramatically reduce alert fatigue by identifying only the most critical threats that represent true organizational compromise, transforming millions of network events into focused, actionable incidents. Each DoC maps to specific phases of the cyber security kill chain and provides complete attack timelines from initial compromise through full blast radius analysis.

Declarations of Policy Violations (DoPV) address internal compliance and security policy enforcement, identifying unauthorized activities that may not be malicious but still pose organizational risk. These include insecure protocols, outdated TLS versions, vulnerable systems, and potential data leakage scenarios. DoPVs enable continuous, real-time compliance monitoring and governance oversight.

Both event types integrate seamlessly with existing security infrastructure through SIEM integrations and automated response capabilities via webhooks.

Organizations can create custom DoC and DoPV rules through an "escalation" process, extending built-in detection capabilities to address specific organizational needs.

The system supports automated response workflows including incident ticket creation, endpoint isolation, IP blocking, and SOAR playbook initiation.

Overview

This paper describes two different types of high-fidelity asset-oriented incident events generated by Clear NDR: Declarations of Compromise (DoC) and Declarations of Policy Violations (DoPV). While they share many similarities – such as those listed below, they are intended for two different primary use cases.

The common characteristics of both DoC and DoPV are:

- **Asset oriented** - a given DoC or DoPV can only be associated with only one asset. And the complete collection of evidence and insights are associated with the asset
- **High confidence, high-fidelity** - each of the curated threat detection methods that can initiate a DoC or DoPV incident are designed to trigger only under conditions of an active incident
- **Low noise -** while Clear NDR continues to record repeated detection events against a given asset, only the first one generates a DoC or DoPV and optionally initiates an automated response.
- **Effective with the UI or SIEM** - the events sent to the SIEM contain information about the DoC/DoPV such as the status along with the first time and most recent time the threat was seen attacking the asset. Therefore, the value of DoC and DoPV can be leveraged in SIEM integrations as well as security teams who use the Clear NDR UI as their primary interface.
- **Built-in and/or customized** - while Stamus Networks provides extensive built-in detections which are updated daily, users may create their own DoCs and DoPVs to suit the needs of their organizations.

The primary benefit of both DoC and DoPV is that it gives security personnel a clear starting point for what is important and worthy of investigation.

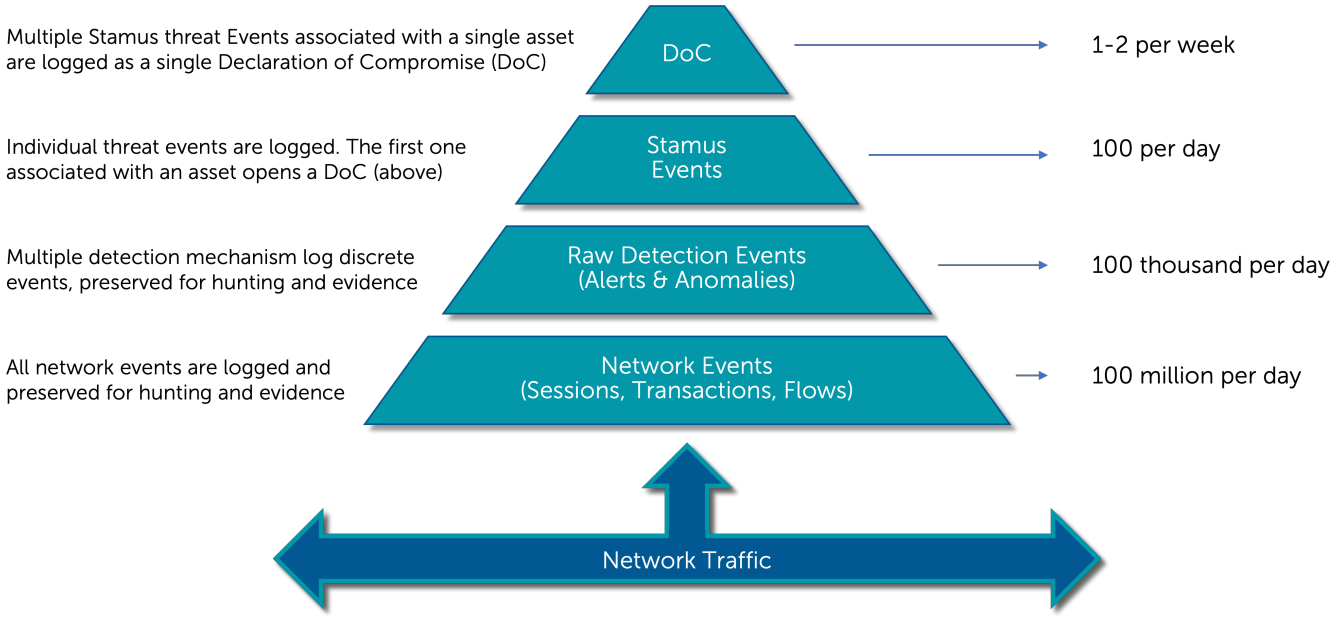
Declaration of Compromise (DoC)

A Declaration of Compromise is the high-fidelity **security incident event** in Clear NDR. Examples may include the observation of malware, lateral movement, or advanced persistent threats (APTs) associated with a specific asset (e.g. host) in the network.

Powerful Security Alert Noise Reduction

The power of the DoC is that it gives security personnel a clear starting point for what is important and worthy of investigation. The diagram below illustrates this concept more clearly for a typical deployment of Clear NDR monitoring a 10 Gbps network connection.

Threat Detection Event Reduction with Declarations of Compromise® in Clear NDR®

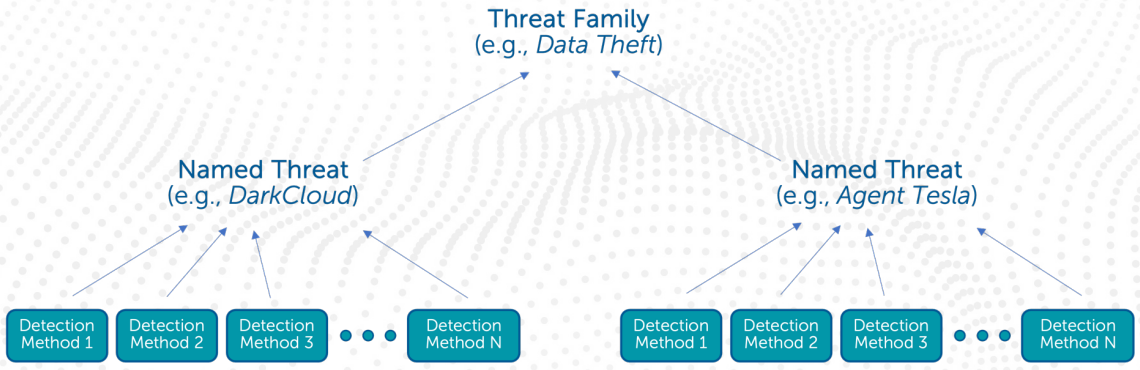


You can see that, while Clear NDR collects extensive network metadata and discrete threat detections, it simplifies the incident responder's job by identifying the most serious and imminent and true positive threat events – those that represent a true compromise to the organization, issuing a confident '**declaration**' of compromise.

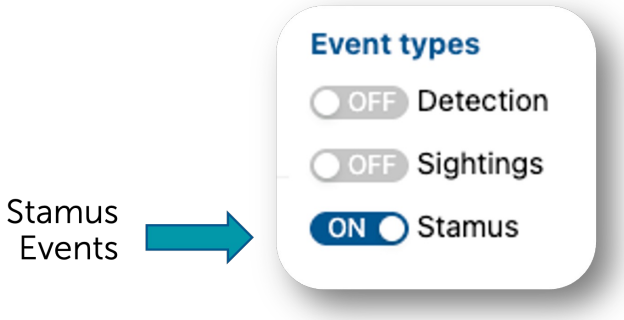
The Anatomy of a DoC

The high-fidelity threat detection algorithms in Clear NDR are called "detection methods" or simply "methods." Most can be associated with threat families and named threats. See the diagram below:

Hierarchy of Named Threats in Clear NDR®

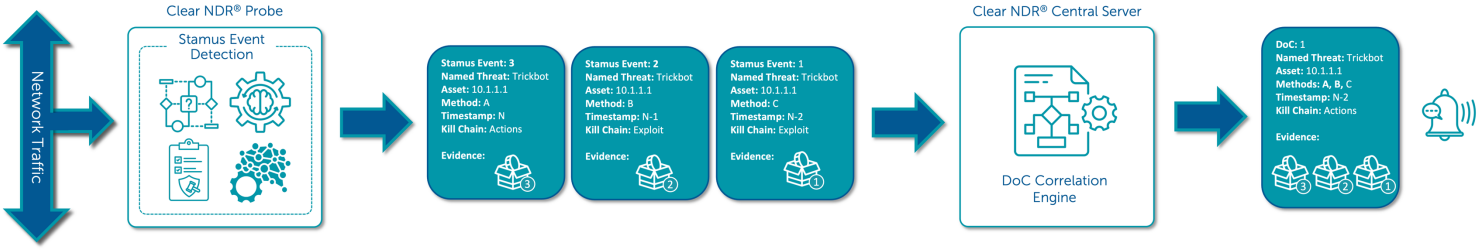


These detection methods can initiate a DoC or DoPV incident and are designed to trigger only under conditions of an active incident. These individual high-fidelity detection events are logged in the Clear NDR Probe, and they are called “Stamus Events” in the user interface and “Stamus Events” in the API.

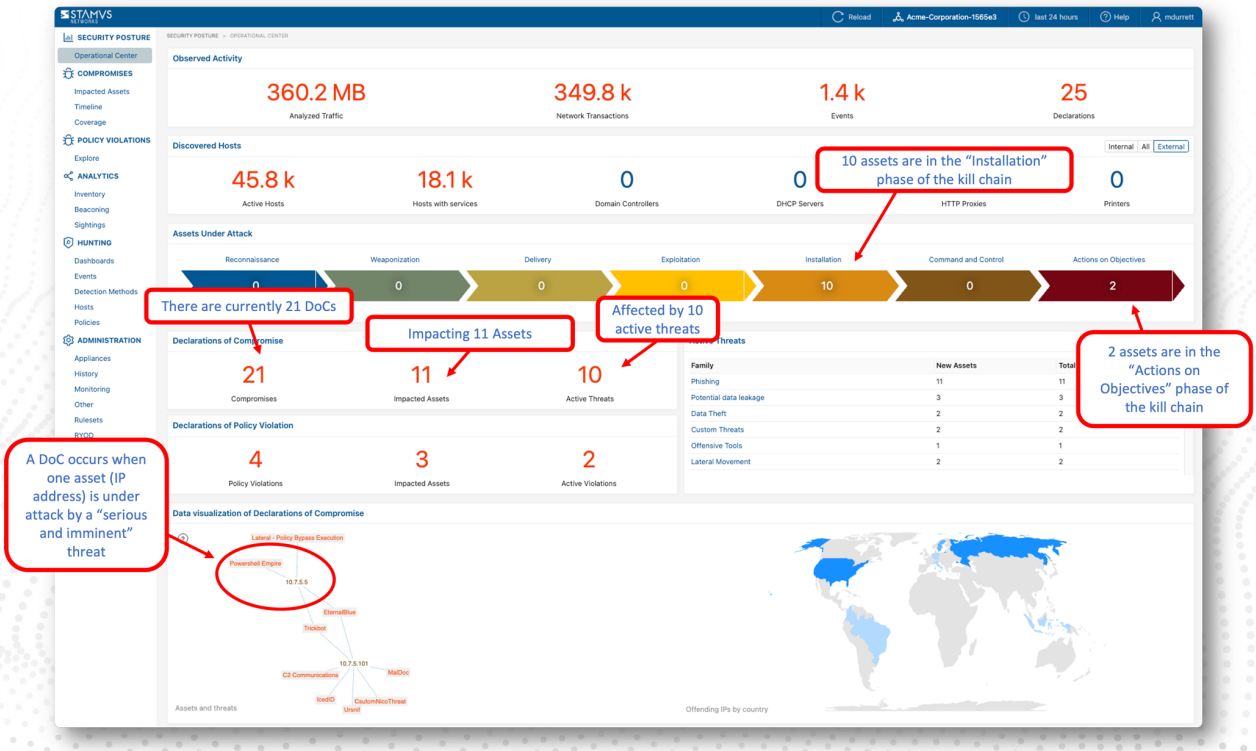


A DoC event is created when the first Stamus Event is logged against an asset, such as a HOST or USER. DoC events are created in the Clear NDR Central Server.

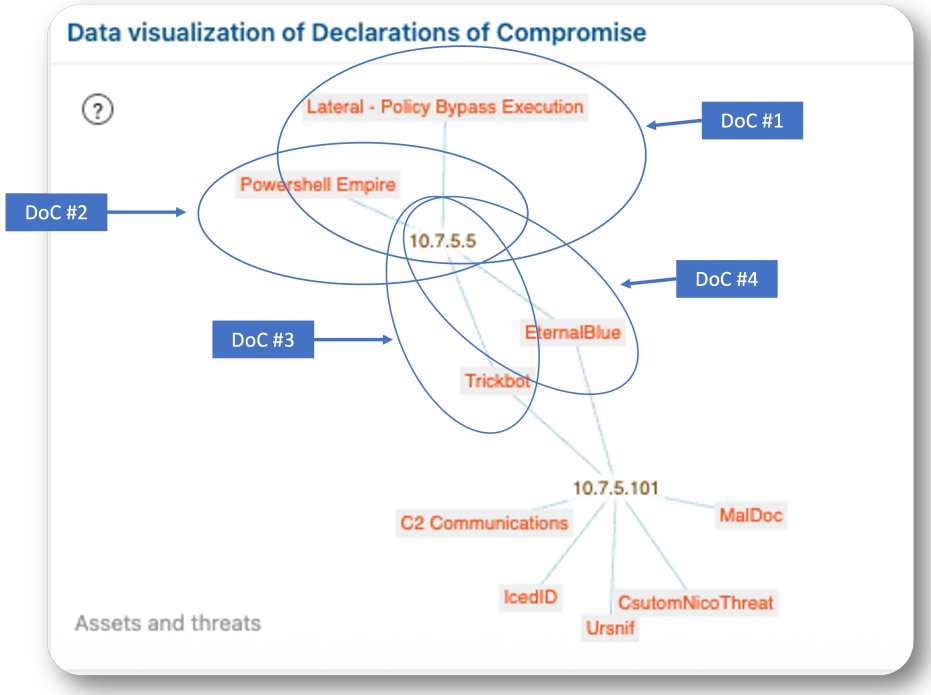
Subsequent occurrences of Stamus Events for the same Named Threat on the same asset are logged, but they do not trigger a new DoC.



Each specific named threat is associated with a phase of the cyber security kill chain. And the kill chain phase of the asset is determined by the kill chain phase of the threat which is attacking it.



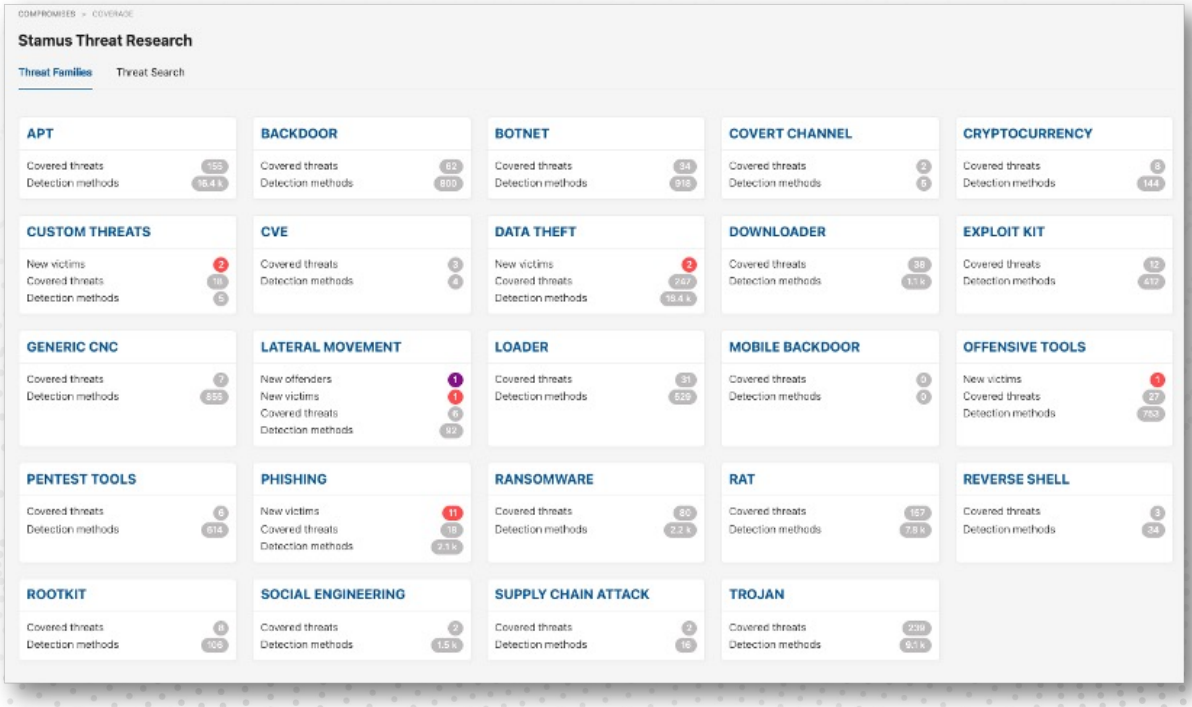
A given asset may be "compromised" by more than one threat, and as such may be subject to more than one DoC. When an asset is under attack by one or more threats, Clear NDR logs each of them. The asset will be placed in the highest kill chain phase based on the threats associated. Here's an example threat visualization from the Clear NDR UI that illustrates this point.



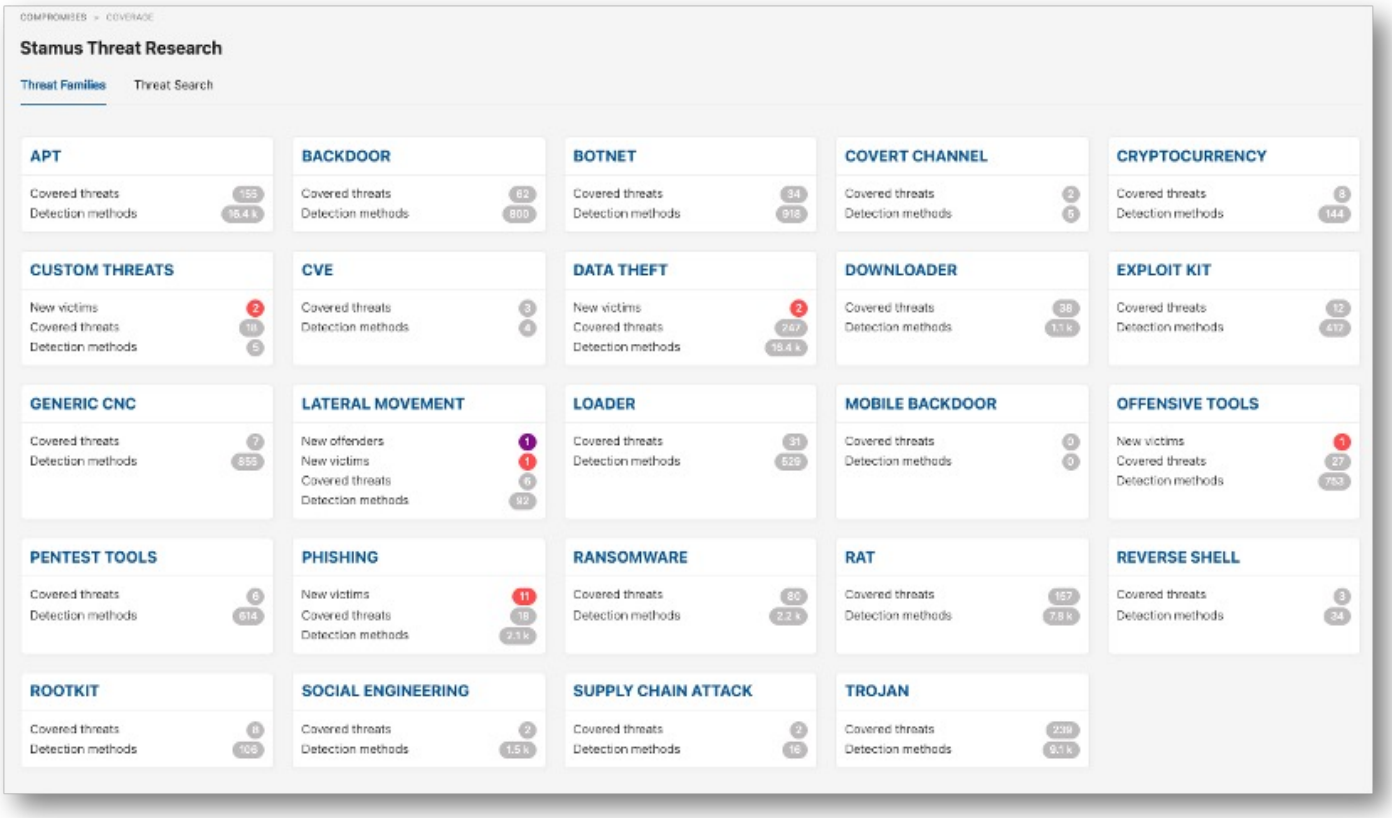
NOTE: Each one of the event records is accompanied by its associated evidence – including network protocol transaction, anomaly, and flow logs along with the packet capture file (PCAP).

Threat Coverage

Clear NDR recognizes many different types of threats. The current coverage map of threat families that can trigger a DoC is shown in the Clear NDR screenshot below.



Within a given threat family such as “Ransomware”, there may be as many as 70 or more individual named threats. Here’s a screenshot from the “Ransomware” coverage page in the Clear NDR UI.



The DoC event is logged when Clear NDR detects that an asset is under attack by one of the curated threat detection algorithms or rules that are known to trigger with very high accuracy (nearly zero false positives) and pose an extreme danger to the asset under attack. We call these, “detection methods.”

Stamus Networks includes an updated set of these curated DoC algorithms in the daily Clear NDR threat detection updates.

Custom DoCs

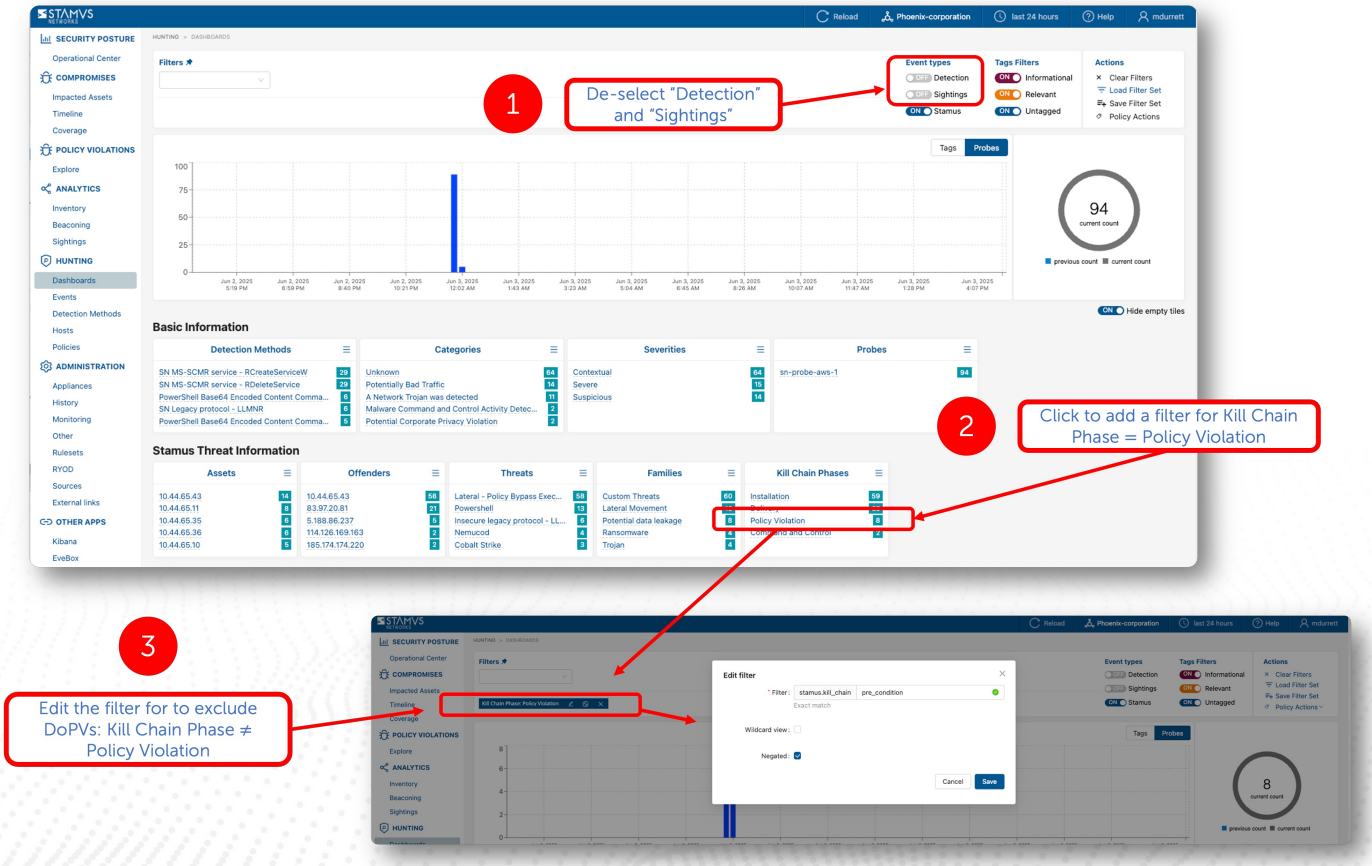
In addition to those built-in and included in the daily threat detection updates, users may create their own through a process known as “escalation,” whereby the results of an investigation or hunt can be turned into a DoC rule. These custom DoCs may be used for real-time detection in future network traffic or applied retroactively to historic data.

Custom DoCs

In addition to those built-in and included in the daily threat detection updates, users may create their own through a process known as “escalation,” whereby the results of an investigation or hunt can be turned into a DoC rule. These custom DoCs may be used for real-time detection in future network traffic or applied retroactively to historic data.

Viewing the DoCs in the Hunt and Investigation Console

Sometimes it becomes important to view all the DoCs and all the assets under attack from one summary screen. To view all DoCs from the Clear NDR Hunting dashboard, toggle the event times “Detection” and “Sightings” to the off position, add a filter to remove the events in the “policy violation” phase of the kill chain. See instructions below. Further filtering can be performed to investigate one or more of the assets under attack.



Using the same mechanism, users may also use filters to proactively create a custom DoC for events not yet seen in the network. For example, a user might create a custom DoC by creating a filter to identify an attempt to exploit a particular CVE that is known to be a vulnerability in the environment.

How to Identify DoCs Using a SIEM Query

Below is an example of how to query your SIEM for a DoC. The query uses "Event Type = Stamus" and the negation to exclude those "Stamus events" that are not yet associated with a kill chain phase (DoPVs).

Query:

"event_type":"stamus" + !(NOT) "kill_chain":"pre_condition" + unique incident_id

This will return the DoC JSON log entry that includes Stamus Event information. See example below.


```
"stamus": {
  "extra_info": null,
  "source": "62.204.41.23",
  "family_name": "Lateral Movement",
  "incidents_id": [71],
  "threat_id": 399,
  "asset_net_info": "wifi-users-hq.organization-acme",
  "pk": 3581,
  "asset_info": {
   "last_seen": "2025-07-24T02:40:34.977144Z",
   "event_id": 88,
   "first_seen": "2025-07-24T02:40:34.968258Z",
   "incident_id": 71,
   "kill_chain": "delivery",
   "state": "ongoing"
  },
  "method_id": 1002026992,
  "family_type": "family",
  "event_id": 88,
  "offender_type": "ip",
  "asset_type": "ip",
  "family_id": 7,
  "threat_name": "Powershell",
  "asset": "192.168.100.60",
  "kill_chain": "delivery"
 }
```


Note: This query returns only the first Stamus Event that triggered a DoC on an Asset

Declaration of Policy Violation (DoPV)

Like a DoC, a Declaration of Policy Violation (DoPV) is a high-confidence and high-priority incident detection event in Clear NDR. DoPV events are related to the security and compliance policy of an organization and activities identified as "unauthorized".

Continuous Compliance and Security Audits

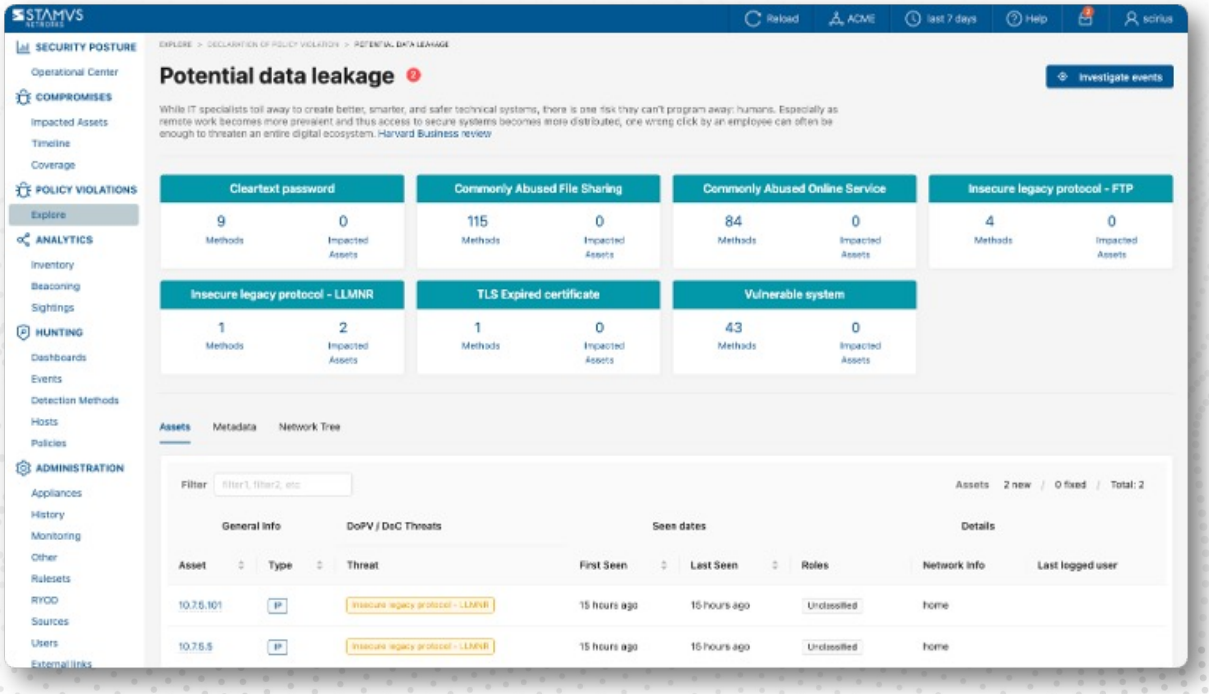
The power of the DoPV is that it gives security, governance, and risk personnel a continuous and real-time understanding of significant policy violations taking place in their organizations.

Unlike Declarations of Compromise (DoC) which alert organizations to high-priority threats, DoPVs focus on unauthorized activities or policy violations that may not necessarily be malicious but still pose a risk to the organization.

Examples may include insecure protocols, outdated TLS versions, expired TLS certificates, vulnerable systems, software, TOR browser usage, or unencrypted (clear text) passwords. These fall largely into two families of detections:

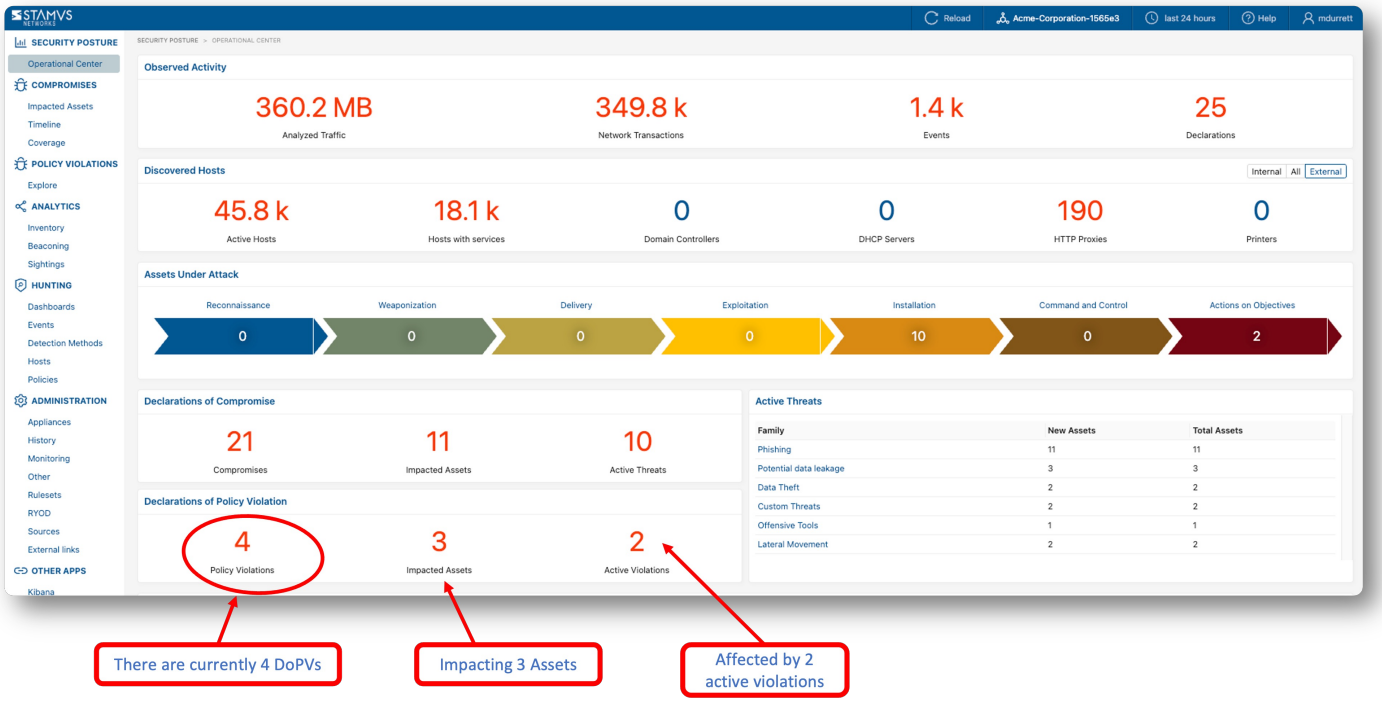
- **Adware** – This detection family identifies unwanted software designed to display advertisements to users, most often within a web browser. These are dangerous because they can become weaponized
- **Potential Data Leakage** – This detection family identifies security vulnerabilities and risky behaviors that could lead to unauthorized data exposure or exfiltration. The detections focus on conditions that create pathways for sensitive information to leave the organization through insecure channels or compromised systems.

You can see more detailed examples from the Potential Data Leakage family coverage here:



How to Identify DoPVs in the Clear NDR User Interface

You may start an investigation into a policy violation from the Operations Center. Click on Declaration of Policy Violations (Policy Violations)

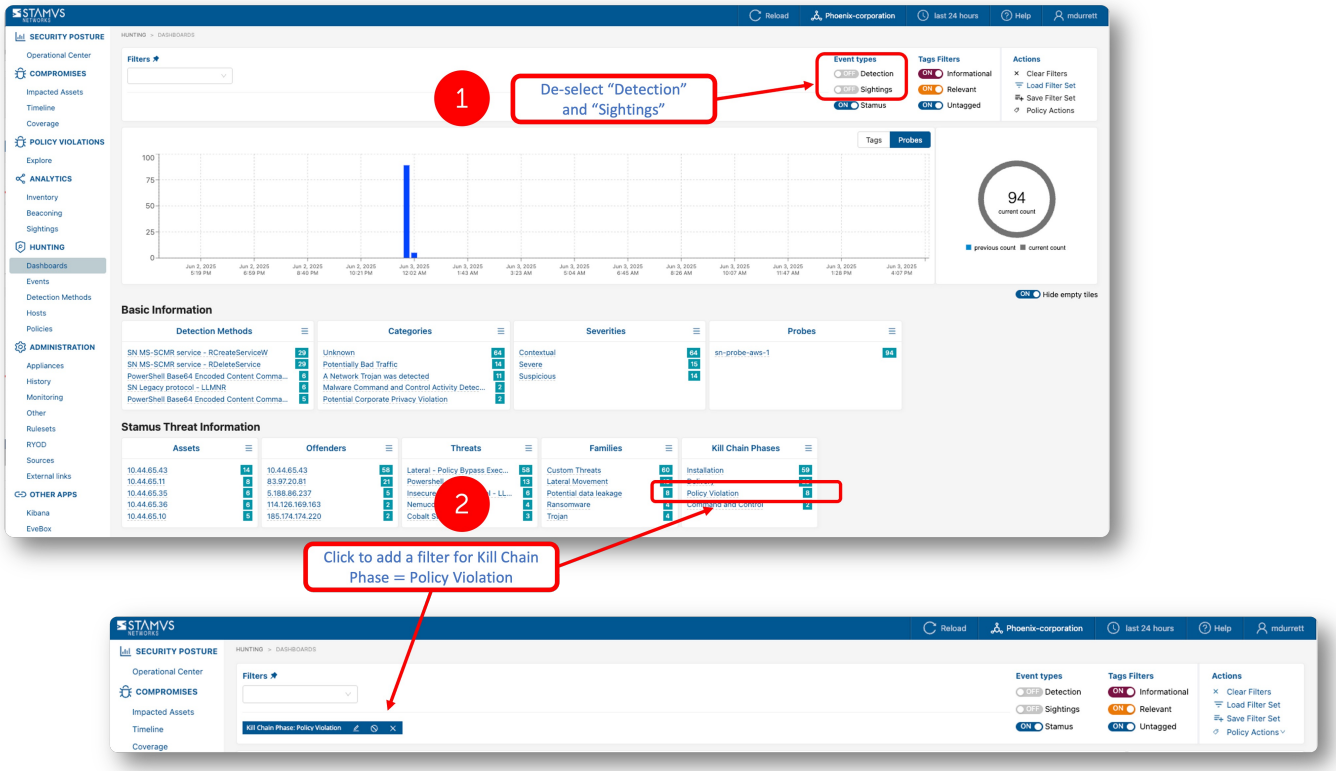


Custom DoPVs

In addition to those built-in and included in the daily threat detection updates, users may create their own through a process known as “escalation,” whereby the results of an investigation or hunt can be turned into a DoPV rule. These custom DoPVs are built using the filters and may be used for real-time policy violation detection on future network traffic or applied retroactively to historic data.

Viewing the DoPVs in the Hunt and Investigation Console

To view all DoPVs from the Clear NDR Hunting dashboard, toggle the event type “Detection” and “Sightings” to the off position, add a filter to add the events in the “policy violation” phase of the kill chain. See instructions below.



How to Identify a DoPV Event Using a SIEM Query

Below is an example of how to query your SIEM for a DoPV. Note, the query uses "Event Type = Stamus" and the DoPV qualifier: "Stamus events" that are not associated with a kill chain phase.

Query:

"event_type":"stamus" + "kill_chain":"pre_condition" + unique incident_id

This will return the DoC JSON log entry that includes Stamus Event information. See example on next page

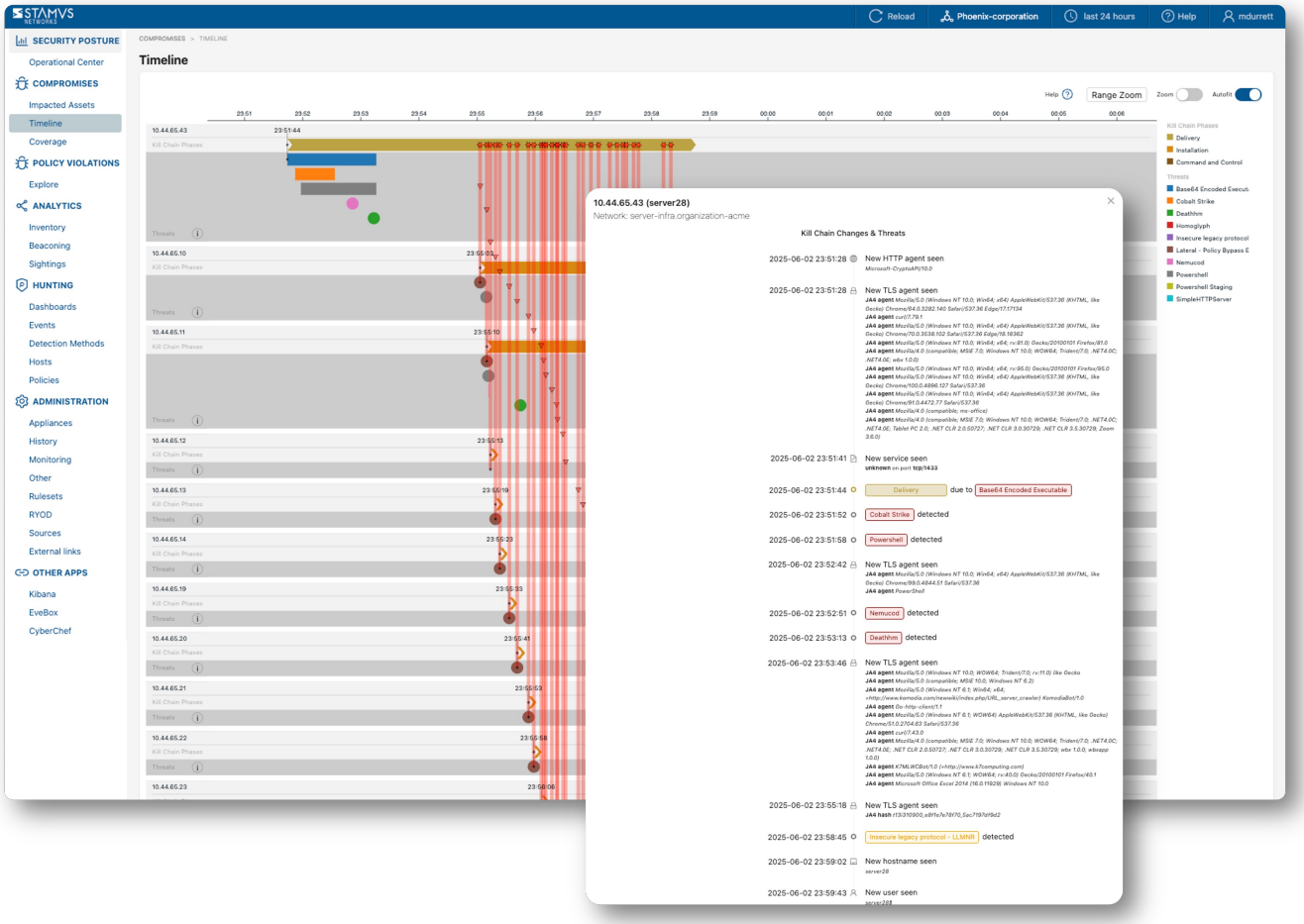
```
"stamus": {
  "extra_info": null,
  "source": "212.193.30.21",
  "family_name": "Adware",
  "incidents_id": [118],
  "threat_id": 1058,
  "asset_net_info": "wifi-users-hq.organization-acme",
  "pk": 1218,
  "asset_info": {
   "last_seen": "2025-07-24T03:36:27.077767Z",
   "event_id": 183,
   "first_seen": "2025-07-24T03:36:27.077767Z",
   "incident_id": 118,
   "kill_chain": "pre_condition",
   "state": "new"
  },
  "method_id": 1002010595,
  "family_type": "family",
  "event_id": 183,
  "offender_type": "ip",
  "asset_type": "ip",
  "family_id": 23,
  "threat_name": "Potentially Unwanted Program",
  "asset": "192.168.100.238",
  "kill_chain": "pre_condition"
 }
```


Note: This query returns only the first Stamus Event that triggered a DoPV

Asset-Oriented Incident Insights

When a DoC or DoPV event is logged, Clear NDR collects all relevant data - including PCAPs, protocol transaction logs, flow records, and details about the threat detection logic itself – and associates it with the threat and the asset.

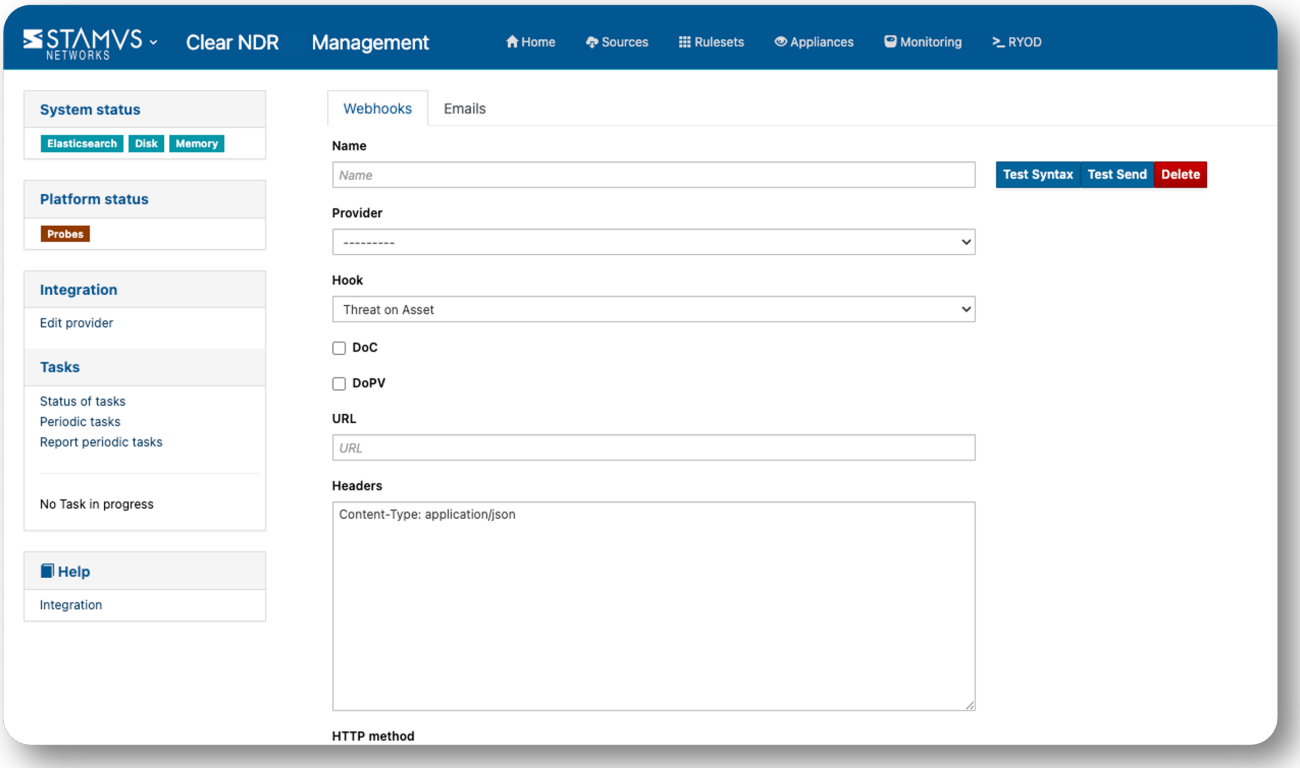
And the Host Insights and Timeline feature consolidates all relevant DoC and DoPV detection methods associated with an incident affecting the asset under attack. These include a complete attack timeline outlining the progression of the incident beginning with “patient zero” and expanding to the entire blast radius. The screenshot below illustrates the attack timeline for a DoC Incident involving multiple assets (Hosts).



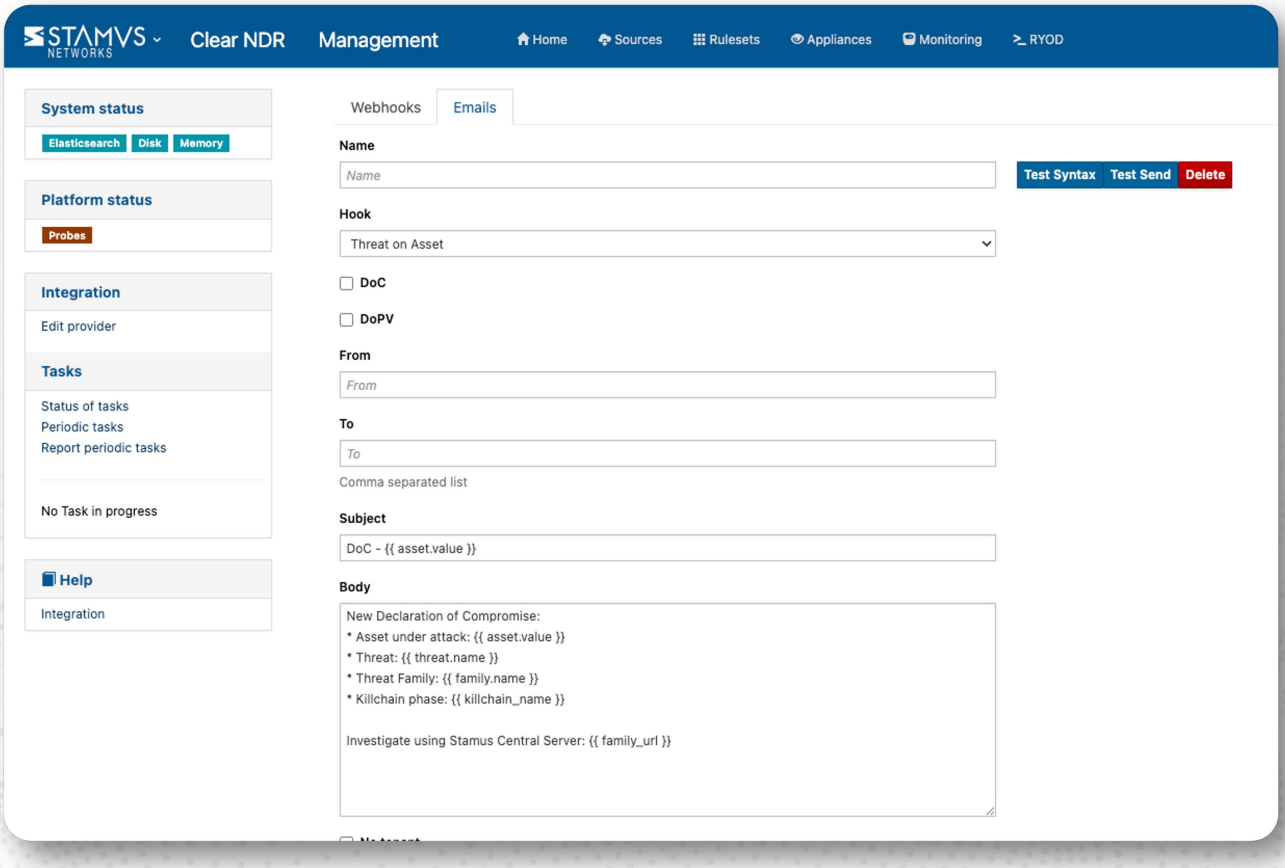
Automating Response with DoCs and DoPVs

DoCs and DoPVs can be used to trigger a response using an integration with an outside system such as an EDR, firewall, incident response system, or SOAR. The primary mechanism for this integration is Webhooks, a lightweight API that powers the one-way data sharing triggered by DoC and DoPV events.

See screenshot below.



In addition to Webhooks, a DoC or DoPV can generate an email. See screenshot below.



Examples of common webhook integration use cases for DoC include the following:

- Open an incident response (IR) ticket ticket via an IR system
- Isolate an offending endpoint via an EDR (endpoint detection and response) system
- Block an offending IP Address via a firewall rule
- Initiate a response playbook via a SOAR (security orchestration and response) system
- Send a message to your instant messaging platform of choice (Slack, Teams, WhatsApp, Google Chat...)

Reviewing the Power of DoCs and DoPVs

Clear NDR's Declarations of Compromise and Policy Violations represent a paradigm shift from traditional security monitoring approaches, providing security teams with precise, high-confidence starting points for investigation rather than overwhelming them with low-fidelity alerts. By focusing on asset-oriented incidents with comprehensive evidence collection, these detection events bridge the gap between raw network data and actionable security intelligence.

The dual approach addresses both threat detection (DoC) and policy compliance (DoPV), creating a comprehensive security posture management solution. The system's integration capabilities—spanning SIEM platforms, automated response systems, and custom DoC and DoPV escalation creation—ensure that organizations can adapt these high-fidelity detections to their specific operational workflows and security architectures.

Ultimately, DoCs and DoPVs transform security operations from reactive alert processing to proactive incident management, enabling security personnel to focus their expertise on genuine threats and policy violations while maintaining the detailed forensic capabilities necessary for thorough investigation and response. This approach significantly enhances both the efficiency and effectiveness of modern cybersecurity operations.

Contact Stamus Networks Today

To request a custom live demonstration of Clear NDR, visit the Stamus Networks website at https://www.stamus-networks.com/demo
To generate a custom pricing quote for your application, visit the Stamus Networks website at https://www.stamus-networks.com/pricing-quote-generator

ABOUT STAMUS NETWORKS

Stamus Networks is the global leader in Suricata-based network security and the creator of the innovative Clear NDR® system. Designed to close visibility gaps and reduce alert fatigue, Clear NDR transforms raw network traffic into actionable security insights with unmatched transparency, customization, and effectiveness. Trusted by leading financial institutions, government agencies, and participants in NATO's largest cybersecurity exercises, Stamus Networks delivers proven, high-performance network detection and response solutions. Stamus empowers security teams – delivering clarity amidst complexity – with greater control, fewer false positives, faster response times, and a more responsive, open approach than legacy vendors.

STAMUS® NETWORKS

229 rue Saint-Honoré
75001Paris
France

450 E 96th St. Suite 500
Indianapolis, IN 46240
United States

contact@stamus-networks.com
www.stamus-networks.com

