Simulated SOC: Intro to Phishing by (TryHackMe's SOC Simulator)

Date: 10.05.2025

Project: Simulated SOC: Intro to Phishing Project

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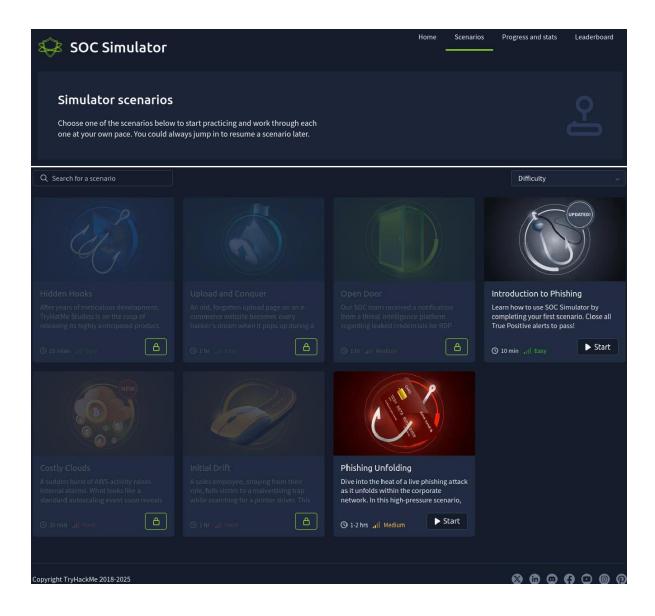
Executive Summary

Introduction

The TryHackMe "SOC Simulator" service is an interactive platform designed to simulate real-world Security Operations Center (SOC) environments. The simulator includes a dashboard, alert queue, built in SIEM (Splunk) and an analyst VM workstation for threat intel investigations.

It provides scenarios involving phishing attacks, malware, and insider threats, requiring users to investigate alerts, classify incidents, and write reports. The purpose of this project is to practice incident response skills in a simulated realistic setting, document the investigative process, and provide possible recommendations based on the findings.

The SOC Simulator service includes 7 unique scenarios to tackle as a simulated SOC analyst. However, most of these scenarios are restricted to Business users, intended for corporate environments only. For individual users, only two scenarios are currently accessible to premium users like myself, both centered around phishing-based threats.



This project will cover, engage in and document actions primarily focused on phishing attacks through the "Introduction to Phishing" and "Phishing Unfolded" scenarios through the SOC Simulator.

Project Scenarios Objectives

1. Introduction to Phishing

Difficulty: Easy | **Duration:** 1 hour

Description:

This is a beginner-level scenario designed to introduce users phishing via the SOC Simulator platform. It teaches how to:

Task Objective:

- Monitor and analyze real-time alerts.
- Identify and document critical events such as suspicious emails and attachments.
- Close all True Positive alerts to pass
- Create detailed case reports based on your observations to help your team understand the full scope of alerts and malicious activity.

Skills Gained:

- Basic alert handling
- Understanding and analyzing phishing behavior
- Basic Splunk SIEM search query
- Working with a simulated SOC dashboard

2. Phishing Unfolding

Difficulty: Moderate | **Duration:** 1-2 hours

Description:

This is a more advanced scenario that simulates a **live phishing attack** within an organization. The attacker sends a phishing email, which leads to:

- A user clicking a malicious link or attachment
- Execution of suspicious PowerShell commands
- Potential credential theft or lateral movement
- Persistent activity by the attacker inside the network

Task Objective:

To investigate a multi-stage phishing attack — from initial email delivery to compromise — and understand how such attacks unfold in real time.

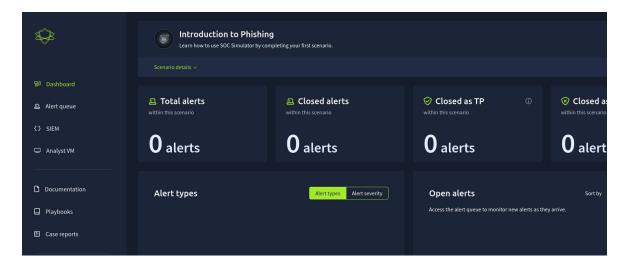
- Monitor and analyze real-time alerts as the attack unfolds.
- Identify and document critical events such as PowerShell executions, reverse shell connections, and suspicious DNS requests.
- Create detailed case reports based on your observations to help the team understand the full scope of the breach.

Disclaimer

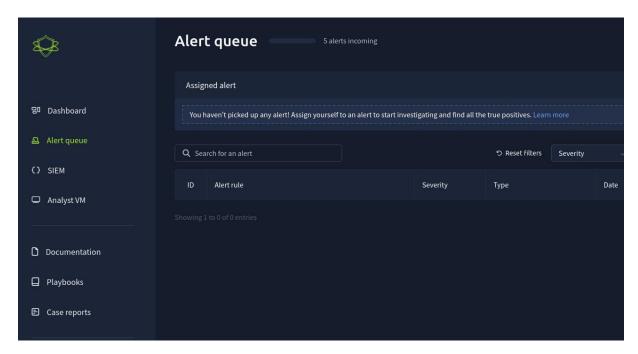
This project is for educational and training purposes only. All scenarios and activities were conducted within the controlled environment provided by TryHackMe's SOC Simulator. No real systems, networks, or users were involved.

Introduction to Phishing scenario

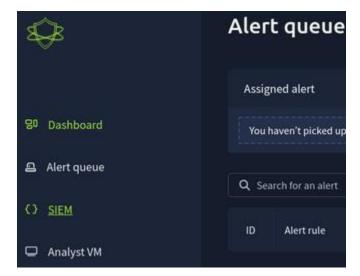
Once the environment has loaded up, we are greeted at the Dashboard in the SOC Simulator platform. From here, it will take a few minutes for the incident alerts to come in real time. But before that happens, lets further explore the SOC Simulator.



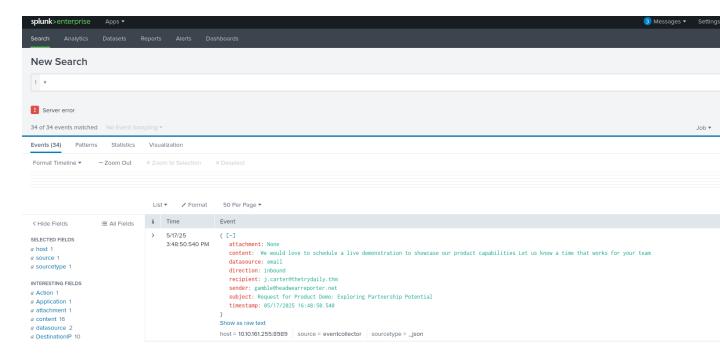
Under dashboard section is "Alert Queue", where alerts will be accessible as they come in. This is where initial alerts will be triggered and shown with information on incident. Information within the alerts will be used to do further investigation of event and its contents.



Under the alert queue is a built in SIEM based on Splunk to be used analyze logs regarding the incoming alerts to gain a better understanding and look for additional information.



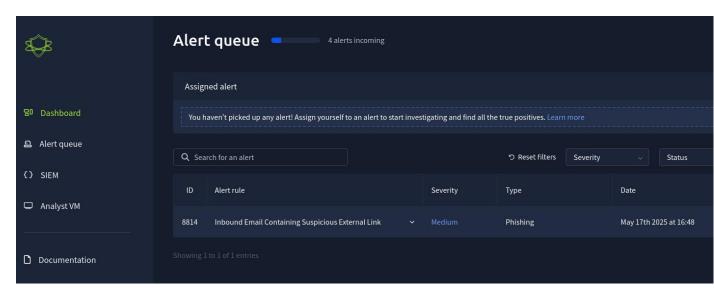
By clicking the SIEM, we are redirected to the Splunk server within the simulator.

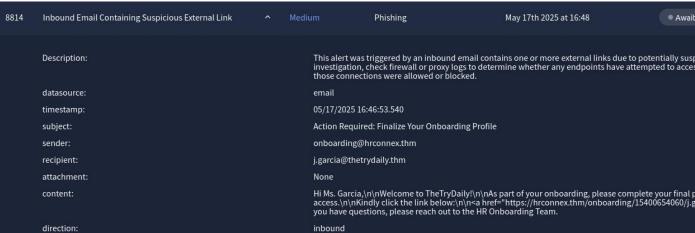


At last, there is an Analyst VM workstation for the simulated analyst to do threat intelligence research. On the workstation are 3 apps, Powershell, WireShark and "TryDetectThis". The "TryDetectThis" application is a URL/IP and File threat intelligence tool to lookup reputation and function.



The first email alert came in, the mail triggered a built-in rule for emails containing external links.

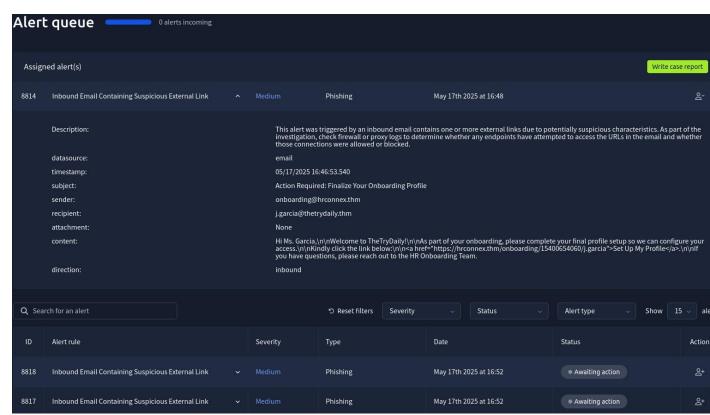




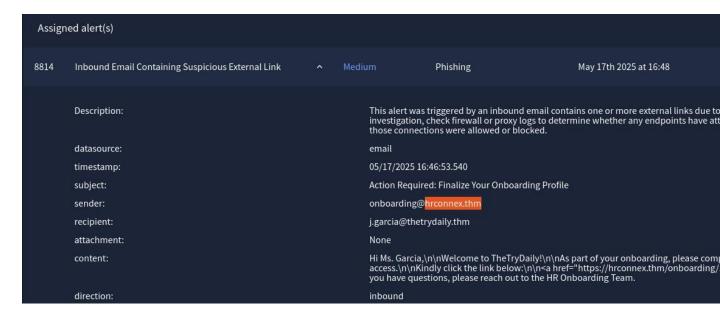
To analyze the suspicious email, the alert contained the following information:

- Title: Inbound Email Containing Suspicious External Link
- Category: Phishing
- Date and Time: May 17th 2025 at 16:48
- Description: This alert was triggered by an inbound email containing one or more external links due to potential investigation, check firewall or proxy logs to determine whether any endpoints have attempted to those connections were allowed or blocked.
- Datasource: email
- Timestamp: 05/17/2025 16:46:53.540
- Subject: Action Required: Finalize Your Onboarding Profile
- Sender: onboarding@hrconnex.thm
- Recipient: j.garcia@thetrulythm
- Attachment: None
- Content: Hi Ms. Garcia,[...]Welcome to TheTrulyDaily![...]As part of your onboarding, please complete your final access[...]click the link
 below[...]https://hrconnex.thm/onboarding/154006540069[...]The HR Onboarding Team

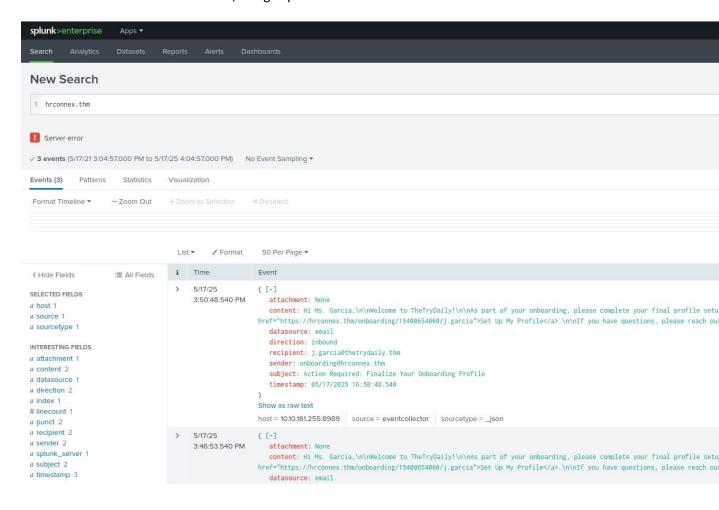
The email, sent to <u>i.garcia@thetrydaily.thm</u> on May 17, 2025, at 16:48 CEST, is an onboarding notification titled "Action Required: Finalize Your Onboarding Profile." The title uses urgency in the title by stating "Action Required", encouraging the user to engage now. It comes from <u>onboarding@hrconnex.thm</u>, seemingly the HR Onboarding Team, and asks Ms. Garcia to complete her profile via a link (https://hrconnex.thm/onboarding/15400654060/j.garcia) for TheTryDaily. It offers support via the same email. The sender domain and destination domain aligns up with each other by both domains using the ".thm" extension. The alert flags it as potential phishing despite matching domains because it contains URL to an external source.



Take ownership of the alert by selecting "Action" and set alert to "Assigned alerts" for the analyst to work on. Assigned alerts can contain multiple alerts.

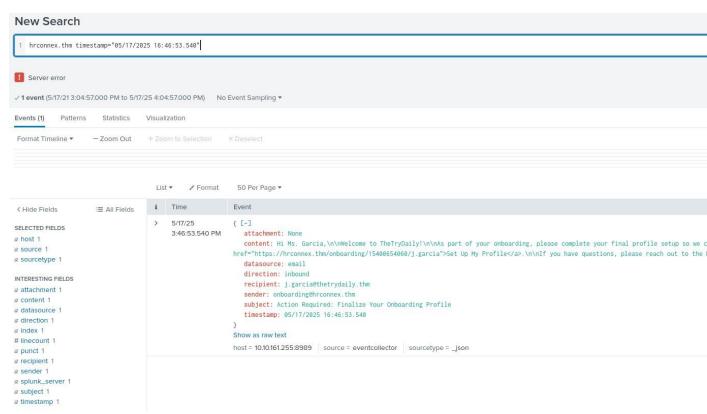


From the information in the assigned alert, copy the senders email domain and search in Splunk SIEM to look for the specific event. Open the SIEM section and move to Splunk. The result for the search of the email address domain, brings up 3 recorded events.

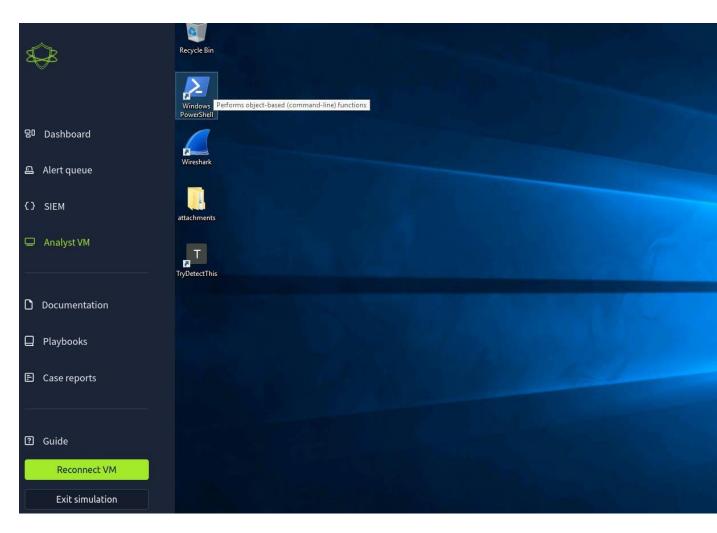


To narrow down the search to find the specific event we are looking for, add in unique information to the search query related to the specific email we are looking for. I noted down the timestamp earlier, include the timestamp in the query with the following search:

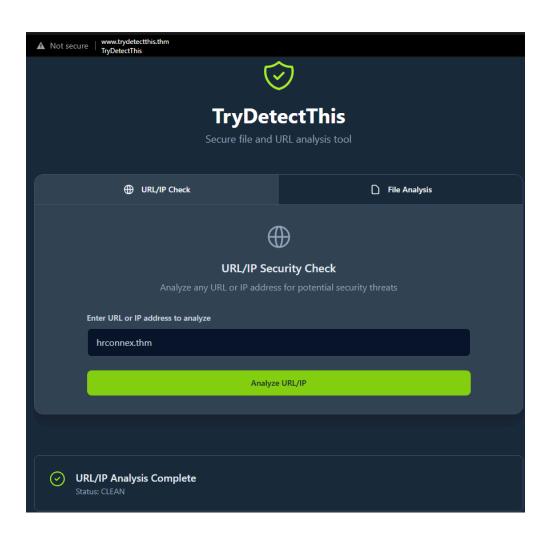
hrconnex.thm timestamp="05/17/2025 16:46:53.540"



1 event found, this is the one specific to the alert we are looking at. The log contains the sender's domain and the external URL listed in the main content that triggered the alert.

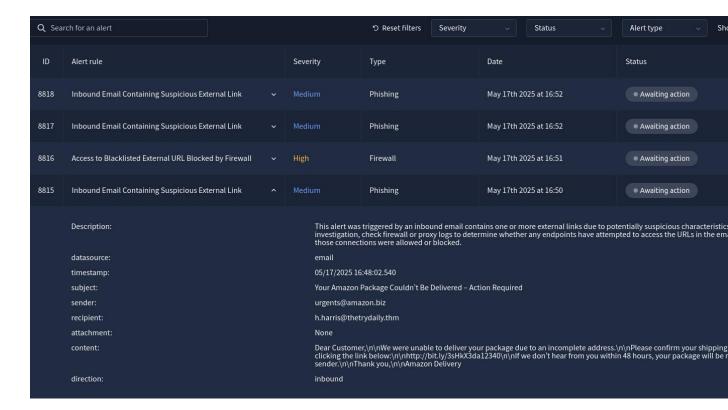


Inside the Analyst VM workstation, open the "TryDetectThis" application to look up the listed domain reputation and external URL function. TryDetectThis tool is for threat intel research.



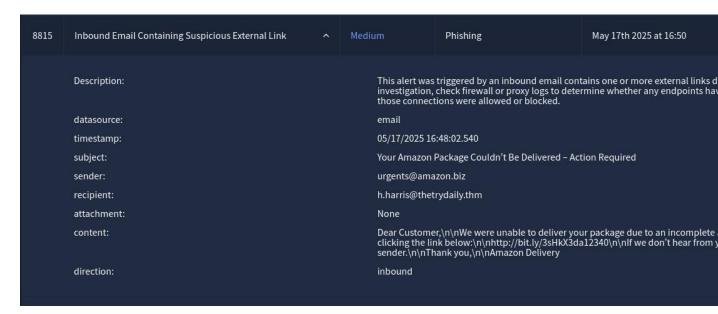
TryDetectThis			
Secure file and URL analysis tool			
⊕ URL/IP Check	☐ File Analysis		
\oplus			
URL/IP Security Check			
Analyze any URL or IP address for potential security threats			
Enter URL or IP address to analyze			
https://hrconnex.thm/onboarding/15400654060/j.garcia			
Paste			
URL/IP Analysis Complete Status: CLEAN			

The domain of the sender and external URL came up CLEAN Analysis, meaning the domain and URL is seemingly safe. This points to the possibility that this might be a false positive.



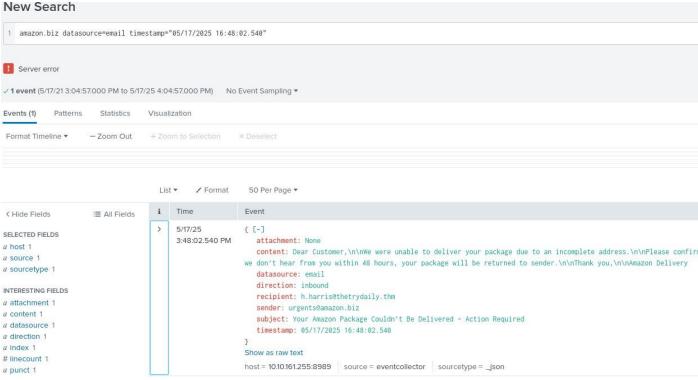
By now, 4 additional alerts have come in. 3 new email alerts and 1 high risk alert from the firewall.

The next email alert coming in was triggered when another email contained an external URL within the email.



Lookup the specific alert on Splunk using unique information within the email such as domain and timestamp for the alert. Search up in Splunk:

amazon biz datasource=rcemail timestamp="05/17/2025 16:48:02.540"

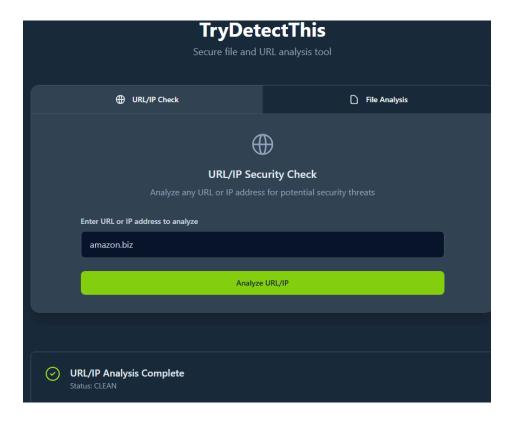


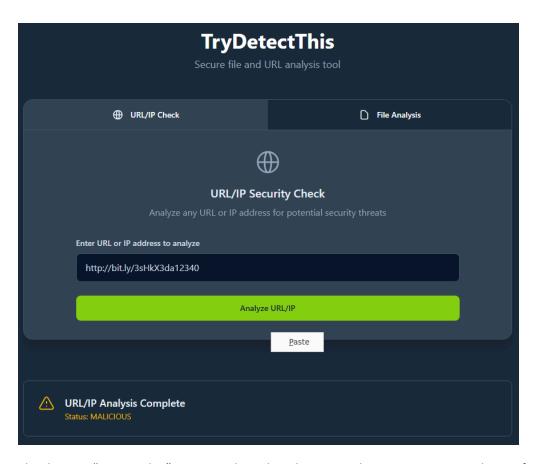
Found the specific event on Splunk.

- Description: This alert was triggered by an inbound email containing one or more external
 links due to potentially suspicious characteristics. As part of the investigation, check firewall
 or proxy logs to determine whether any endpoints have attempted to access the URLs in the
 email and whether those connections were allowed or blocked.
- Timestamp: 05/17/2025 16:48:02.540
- Subject: Your Amazon Package Couldn't Be Delivered Action Required
- Sender: urgents@amazon.biz
- Recipient: h.harris@thetrydaily.thm
- Attachment: None (No attachment)
- Content: Dear Customer,\n\nWe were unable to deliver your package due to an incomplete address.\n\nPlease confirm your shipping information by clicking the link below:\n\nhttp://bit.ly/3sHkX3da12340\n\nIf we don't hear from you within 48 hours, your package will be returned to sender.\n\nThank you,\n\nAmazon Delivery
- Direction: Inbound

This email seems to be coming from Amazon at domain "amazon.biz" sent to the user h.harris at our organisation "TheTryDaily". The .biz extension seems a little suspicious. Subject says package could not be delivered and uses urgency to request action. The main content asks the viewer to clicking the link below listed as a bit.ly URL. Bitly is a common URL shortener, used by many phishers to mask or hide a potential malicious link. The URL is highly suspicious, as Amazon most likely wouldn't use Bitly instead of a trusted amazon domain. The email also uses urgency by stating action is required within 48 hours, a common tactic for phishing campaigns to encourage engagement.

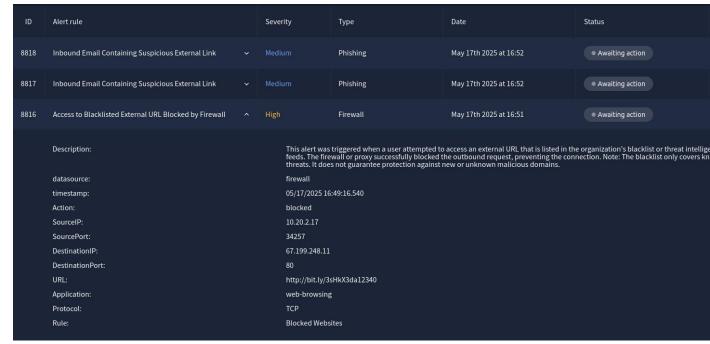
Use the TryDetectThis application to lookup the sender domain and listed external URL.





The domain "amazon.biz" came up clean, but the external URL came up as malicious function. This points to the possibility of being a phishing email with a malicious link.

This email alert "8815" is a **True Positive**



The next alert triggered is for "Access to Blacklisted external URL blocked by firewall". The alert is from the network firewall, the alert contains the following information:

- Title: Access to Blacklisted External URL Blocked by Firewall
- Description: This alert was triggered when a user attempted to access an external URL that is listed in the organization's blacklist or threat intelligence feeds. The firewall successfully blocked the outbound request, preventing the connection. Note: The blacklist only covers known or known malicious domains; it does not provide protection against new or unknown malicious domains.

Timestamp: 05/17/2025 16:49:50

Action: BlockedSource IP: 10.20.2.17Source Port: 54217

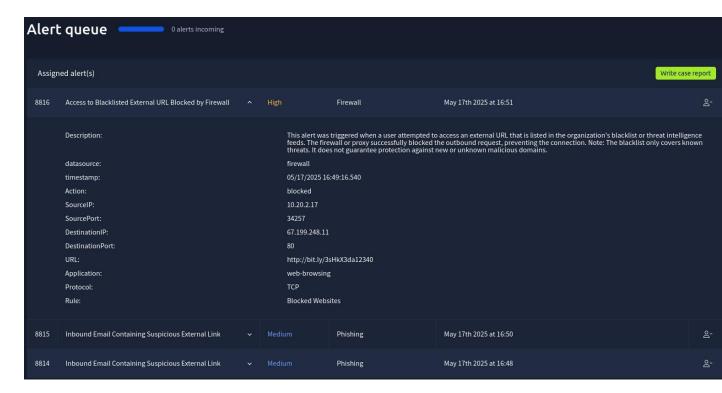
Destination IP: 67.199.248.11

Destination Port: 80

URL: http://bit.ly/3HxkdA2340
 Application: web browsing
 Rule: Blocked Websites

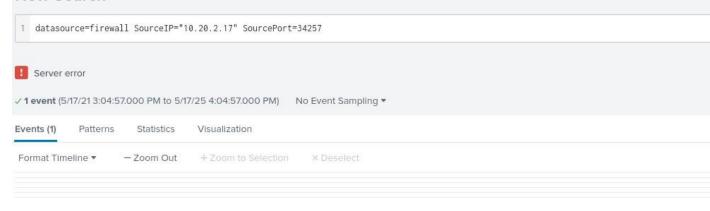
This alert tells us that a user within our network has attempted to visit an external URL that was listed in our organizations blacklist of domains. These domains will be automatically blocked if visited by our users. The firewall successfully blocked the outbound request. It states that the IP 10.20.2.17 using port 54217 had tried to visit IP 67.199.248.11 at port 80 at URL http://bit.ly/3HxkdA2340. The domain "bit.ly" was a part of our organization's blacklist of domains, likely because it is a URL shortener often used to hide actual malicious domains.

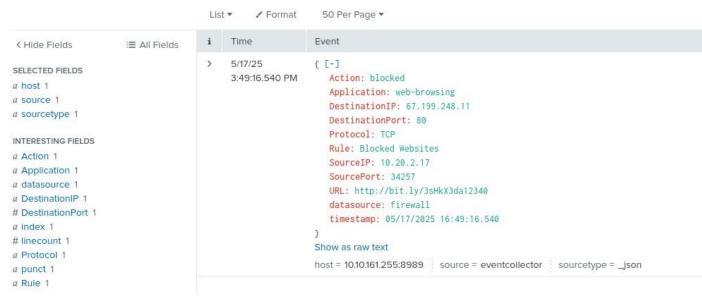
Add the alert to assigned alerts with the 2 other emails we previously covered.

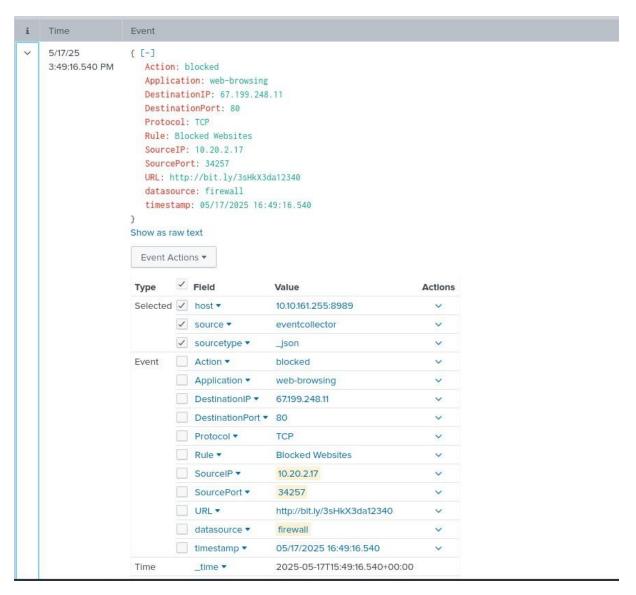


Search up the log to the firewall alert in Splunk using the information given in the alert queue. The search query "datasource=firewall SourceIP="10.20.2.17" SourcePort=34257" narrowed it down.

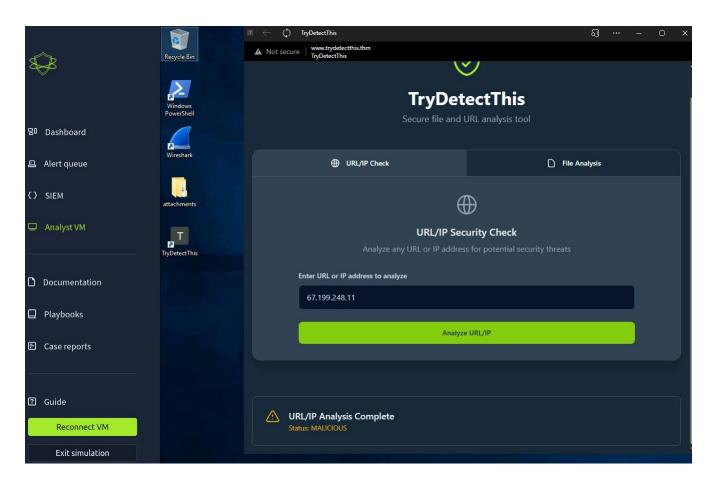
New Search





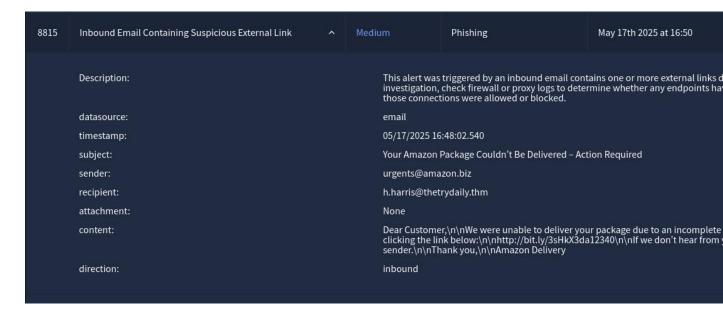


In the Splunk log for the specific firewall alert, we see the matching information in the log. The URL contains a blacklisted domain, was blocked for that reason. The Destination IP hosting the web service on port 80 should be further investigated through threat intel.



The destination IP was flagged as Malicious.

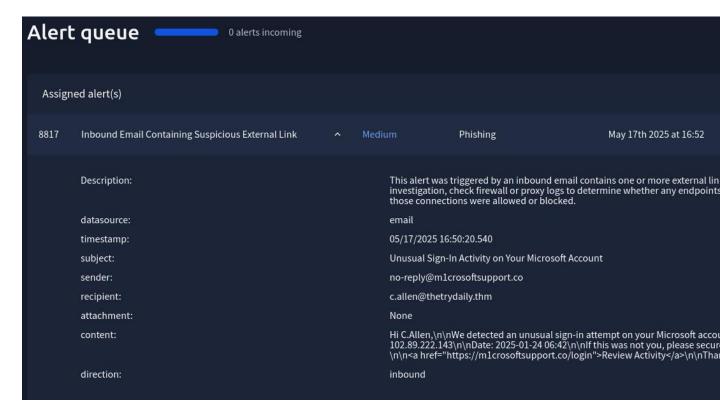
We know the email alert 8815 coming from urgents@amazon.biz requested the user "h.harris" to visit an external bit.ly URL to complete address information to amazon. This bit.ly link is the exact same URL as the one blocked by the firewall. Note the email from amazon.biz below:



This points to the conclusion that the user "h.harris" at TheTryDaily has engaged in a phishing email from "amazon.biz" and clicked on the external URL listed in the mail leading to a bit.ly URL. The connection was blocked by the firewall as bit.ly is a blacklisted domain for automatic block.

This firewall alert "8816" is a True Positive

Moving on, there are 2 email alerts left.



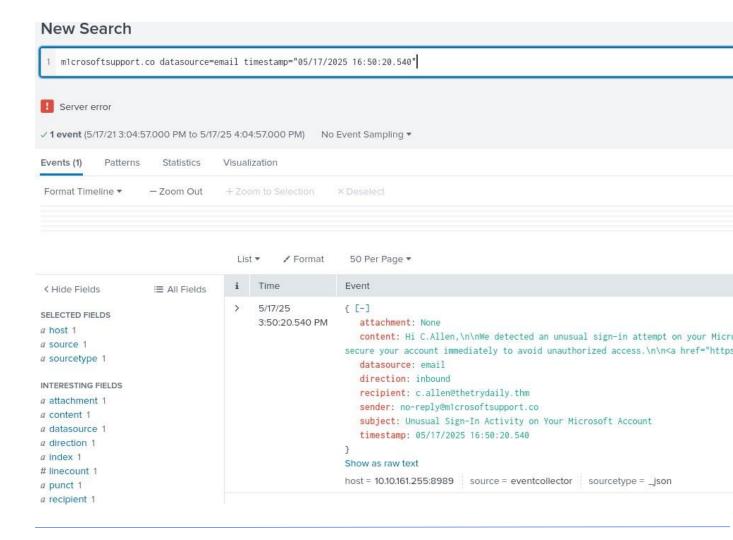
The next email alert contains the following information:

- Alert ID: 8817
- Title: Inbound Email Containing Suspicious External Link
- Category: Phishing
- Description: This alert was triggered by an inbound email containing one or more external links due to potential investigation, check firewall or proxy logs to determine whether any endpoints have attempted to those connections were allowed or blocked.
- Datasource: email
- Timestamp: 05/17/2025 16:50:20.540
- Subject: Unusual Sign-In Activity on Your Microsoft Account

- Sender: no-reply@m1crosoftsupport.co
- Recipient: c.allen@thetrulythm
- Attachment: None
- Content: Hi C.Allen,[...]We detected an unusual sign-in attempt on your Microsoft account.[...]Location: Lagos 10.0.89.222.143[...]InDate: 2025-01-24 06:42[...]If this was not you, please secure your account immediately[...]https://m1crosoftsupport.co/login*-Review-Activity-[...]Thank you,[...]microsoft
- **Direction**: inbound

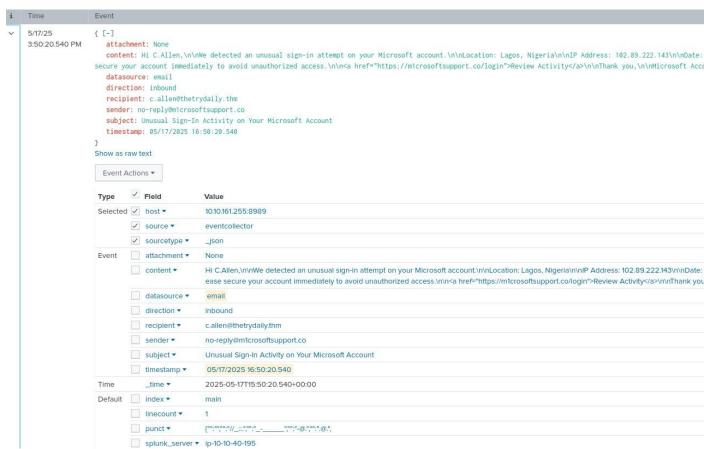
This email claims to be from Microsoft (no-reply@m1crosoftsupport.co) about an unusual sign-in from Lagos (IP: 10.0.89.222.143) on January 24, 2025, at 06:42. The senders domain contains a "1" number in the domain as in "m1crosoftsupport.co", highly suspicious. The link (https://microsoftsupport.co/login) is also suspicious, likely leading to a malicious site. Sent to c.allen@thetruly.thm with no attachments.

First impressions, this looks like a phishing email. Let's investigate further through Splunk log and threat intelligence.

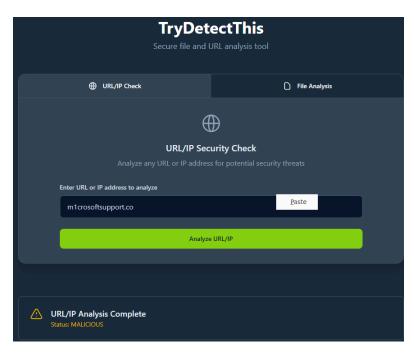


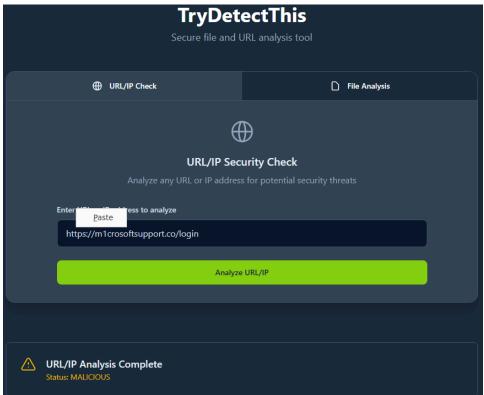
Search: m1crosoftsupport.co datasource=email timestamp="05/17/2025 16:50:20.540"

This splunk search narrowed it down to the specific event.



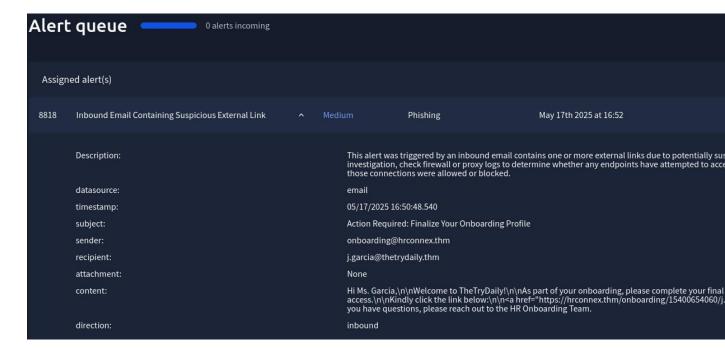
The log contains the email information provided. Using the stated information, do threat intelligence research on the senders domain "m1crosoftsupport.co" and listed URL in the main content.





Both the senders domain at "m1crosoftsupport.co" and the listed URL under the same domain were flagged as malicious. We can determine that this email alert is a malicious phishing email and is therefore a true positive alert.

The email alert "8817" is a **True Positive**



The last email alert our SOC simulator receives is another email from "hrconnex.thm".

Alert ID: 8818

Title: Inbound Email Containing Suspicious External Link

Type: Phishing

• **Description**: This alert was triggered by an inbound email containing one or more external links due to potential investigation, check firewall or proxy logs to determine whether any endpoints have attempted to those connections were allowed or blocked.

• **Datasource**: email

• Timestamp: 05/17/2025 16:50:48.540

• Subject: Action Required: Finalize Your Onboarding Profile

Sender: onboarding@hrconnex.thm

Recipient: j.garcia@thetrulythm

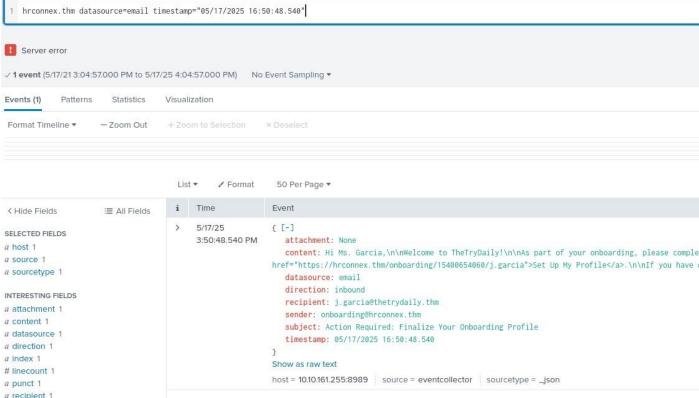
• Attachment: None

Content: Hi Ms. Garcia,[...]Welcome to TheTrulyDaily![...]As part of your onboarding, please complete your final access[...]click the link
 below[...]https://hrconnex.thm/onboarding/154006540069[...]The
 HR Onboarding Team

This email has already been received before. It is in fact the exact same email as the first email that came into the SOC simulator.

The email appears to be a legitimate onboarding request from an HR team ("The HR Onboarding Team") for a new employee, Ms. Garcia, at TheTrulyDaily. This email seems to have been sent twice.



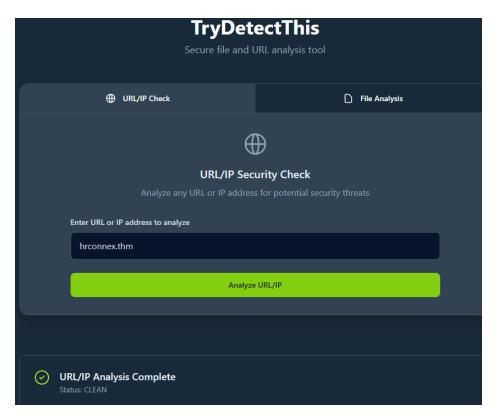


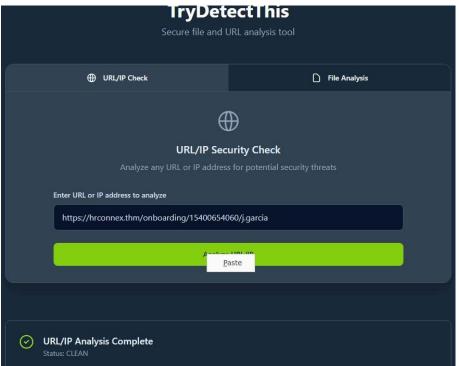
Using the Splunk search:

hrconnex.thm datasource=email timestamp="05/17/2025 16:50:48.540"

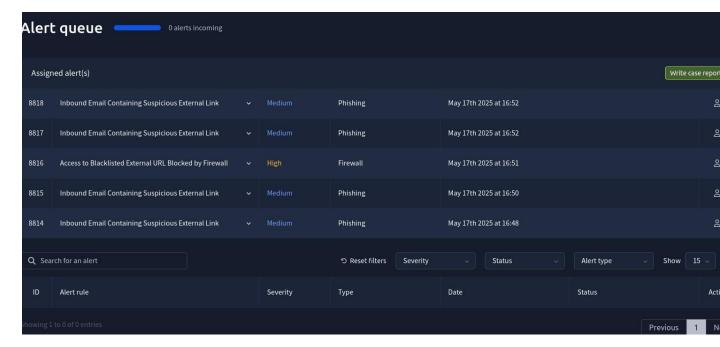
Let's do threat intelligence on the email content to determine its nature.

Search up threat intel on the sender's domain "hrconnex.thm" and the listed external URL in the mail.





The domain and listed URL came up as clean. The same result as the first version of this same email from hrconnex.thm. It seems that the same email was sent twice and is a false positive again.

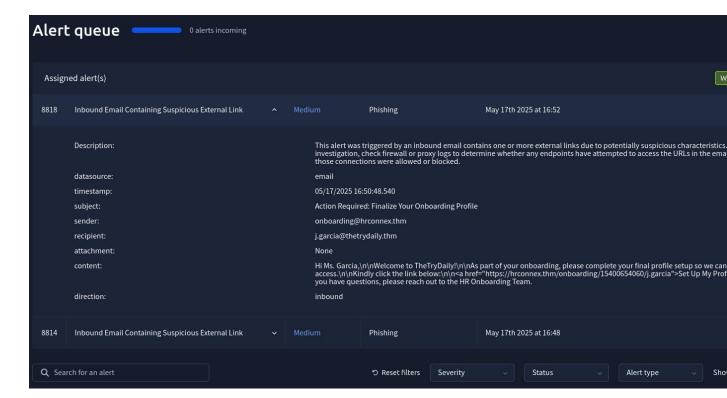


That was all the alerts for this scenario, lets write a quick case report for these alerts.

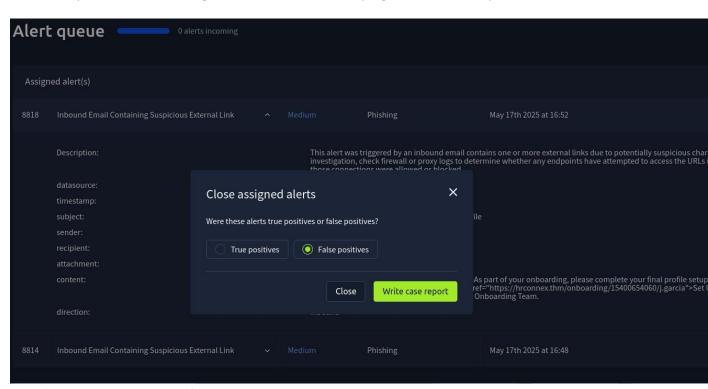
We have determined throughout this scenario that there were 2 false positives and 3 true positives.

First, organize the 2 false positives alerts into the assigned alerts section. These 2 alerts will be reported together as they are related to eachother.

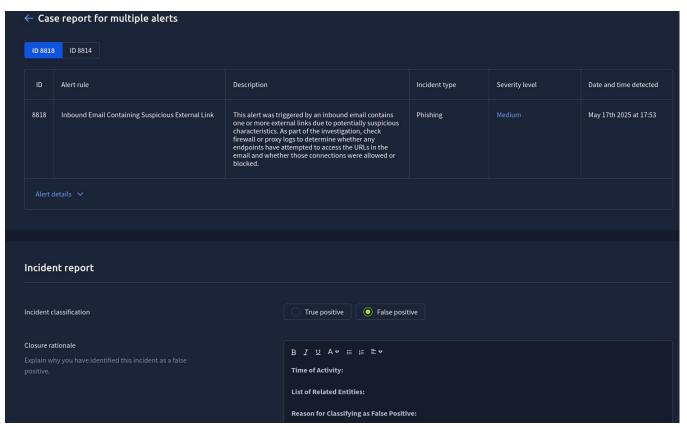
After writing the first report, organize the 3 true positives alerts into the assigned alerts section and provide a case report for the positives as well.



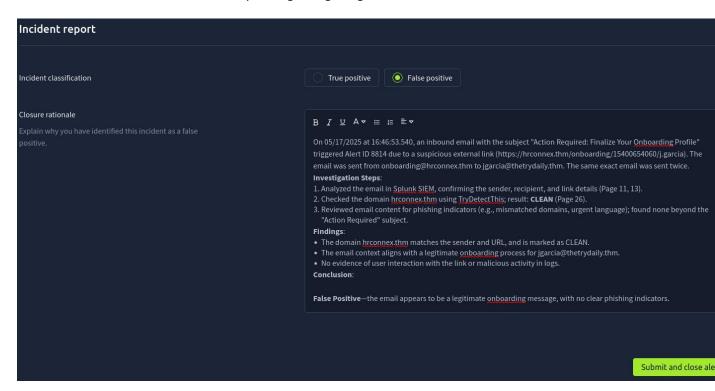
The 2 false postives alerts in assigned alerts and click the top right "Write case report".

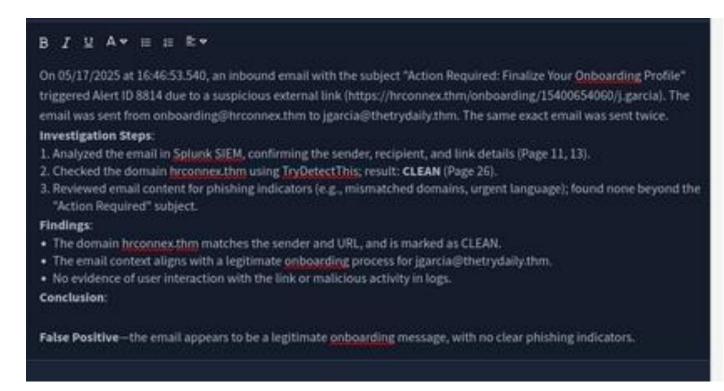


Classify the assigned alerts by false positives and click write case report.

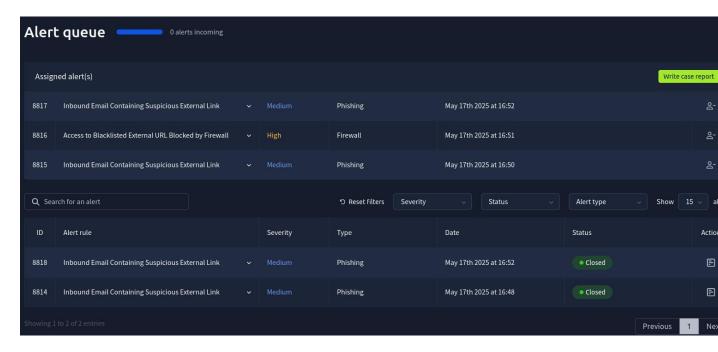


Review the alerts and write incident report regarding assigned alerts.

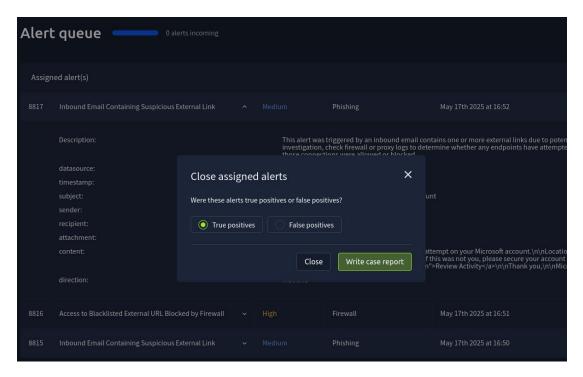


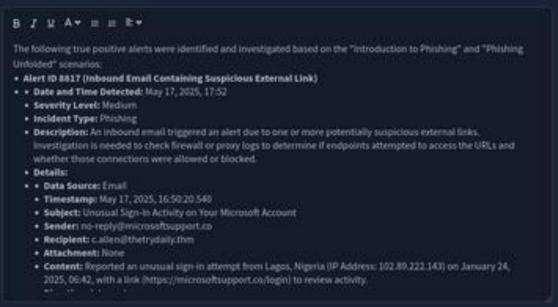


Case report written and delivered for the 2 false positives alerts. Move on to the remaining 3 alerts.

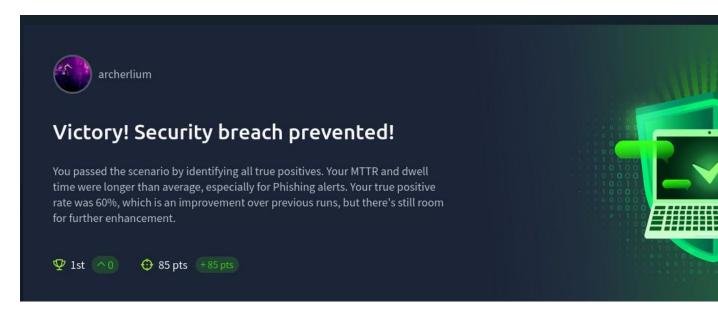


Organize the 3 true positive alerts into assigned alerts and click "write case report". Label the 3 alerts as true positives and write a quick report on them.





The report was contained the related information, phishing email purpose and outcome of the emails. 1 user within our network had clicked a malicious link, but the connection was blocked by the firewall due to the URL containing a blacklisted domain within the link and documented. Another user receives a phishing email, but did not engage in it.



All alerts of this scenario have been delivered and were all correctly identified as true or false positives. Granted with a victory page, security breach to the SOC simulator was prevented.

Phishing Unfolded scenario

Coming soon

References

SOC Simulator, Tryhackme, (2025). "Introduction to Phishing": tryhackme.com

SOC Simulator, Tryhackme, (2025). "Phishing Unfolded": tryhackme.com

Tools

Splunk (SIEM)