



Bhuvaneshwar-Naidu / DF_Lab



Code

Issues

Pull requests

Actions

Projects

Wiki

Security



DF_Lab / Exp_4_Mail Header Analyzer.md



Bhuvaneshwar-Naidu Update Exp_4_Mail Header Analyzer.md

7d14797 · now



75 lines (57 loc) · 3.15 KB

Preview

Code

Blame



Raw



Ex. No 4: Analyze Email Headers and Detect Email Spoofing using MHA (Mail Header Analyzer)

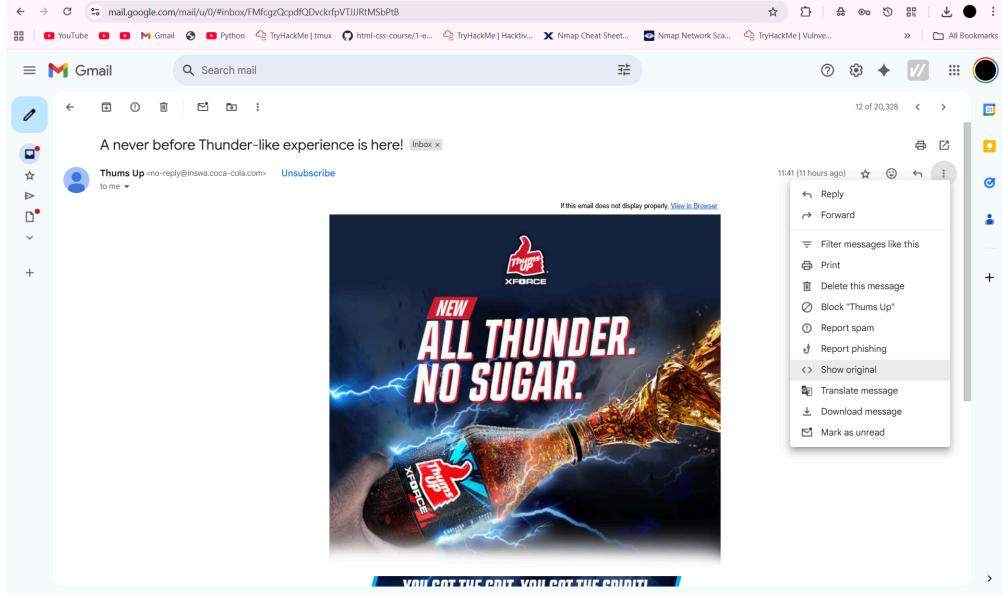
Aim

To analyze an email header and detect possible **email spoofing** using the **Mail Header Analyzer (MHA)** tool.

Steps

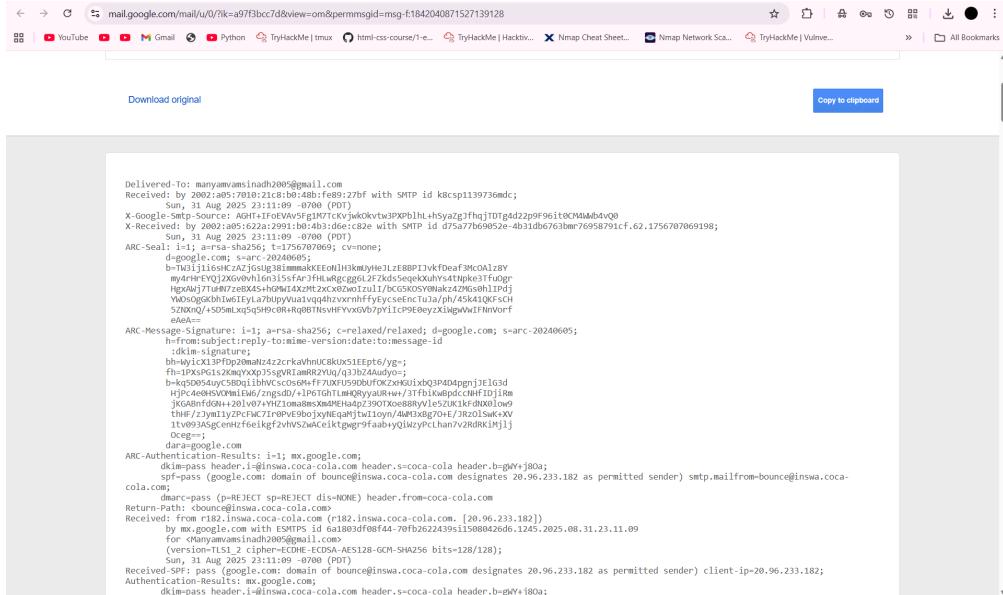
Step 1: Access the Email Header

- Gmail: Open the email → Click the three dots (More) → Select Show Original
- Outlook: Open the email → Click on File → Properties → Copy from Internet headers
- Yahoo: Open the email → Click the three dots (More) → Select View Raw Message



Step 2: Copy the Email Header

- Copy the entire header text (contains details like Received, Message-ID, SPF, DKIM, etc.)
- Save it into a text file or keep it ready to paste into an analysis tool.



Step 3: Use Mail Header Analyzer (MHA)

- Open [Google Admin Toolbox MHA](#)
- Paste the copied email header into the text box.
- Click Analyze the Header.

The screenshot shows the Google Admin Toolbox Messageheader interface. On the left, there's a text area containing raw email headers. Below it is a button labeled "ANALYZE THE HEADER ABOVE". To the right, there's a "Help" section with a yellow background containing tips for interpreting email headers.

Example of what the output may look like:

#	Delay	From *	To *	Protocol	Time received
0		mail7.myt.meetup.com	→	COL004-MC1F51.hotmail.com	4/11/2016, 11:31:44 AM
1	2 sec	COL004-MC1F51.hotmail.com	→	COL004-GMC4514.hotmail.com	4/11/2016, 11:31:46 AM

Step 4: Interpret the Results

- **Received Chain** → Shows the exact path (servers & timestamps) the email took.
 - The email went through the following servers:
 - **r182.inswa.coca-cola.com** → **Google Mail Server (mx.google.com)**, taking **5 minutes** for delivery.
 - Further SMTP relays from Google IP addresses.
- **Delay Analysis** → Highlights unusual delays that might indicate suspicious routing.
 - There is a delay of **5 minutes** before the email was received by the final server. This isn't too unusual, but it's worth considering depending on the context of the email delivery.
- **SPF/DKIM/DMARC** → Shows authentication results.
 - **SPF: Pass** → Email was sent from an authorized IP (20.96.233.182).
 - **DKIM: Pass** → The email domain (inswa.coca-cola.com) has verified the message's integrity.
 - **DMARC: Pass** → The email aligns with the domain's policy.
- **Message-ID** → Should match the sender's domain; mismatch may indicate forgery.
 - The **Message-ID** appears legitimate and corresponds to the sender's domain (inswa.coca-cola.com), meaning it's unlikely to be forged.

The screenshot shows the Google Admin Toolbox interface with the title "Messageheader". The main content area displays the following information:

MessageID: e2f408e0-6c21-4eb6-8601-613c5195f958.d16bdc69-54ad-4b53-ab05-1f910efbb068.e5716fbc-df60-4828-b4c9-f87b70b00148@inswa.coca-cola.com

Created at: 9/1/2025, 11:36:12 AM GMT+5:30 (Delivered after 5 mins)

From: Thums Up <no-reply@inswa.coca-cola.com>

To: Manyamvamsinadh2005@gmail.com

Subject: A never before Thunder-like experience is here!

SPF: pass with IP 20.96.233.182
[Learn more](#)

DKIM: pass with domain inswa.coca-cola.com
[Learn more](#)

DMARC: pass
[Learn more](#)

Below this, there is a table showing the delivery path:

#	Delay	From *	To *	Protocol	Time received
0	5 mins	r182.inswa.coca-cola.com.	→ [Google] mx.google.com	ESMTPS	9/1/2025, 11:41:09 AM GMT+5:30
1			→ [Google] 2002:a05:622a:2991:b0:4b3:d5e:c02e	SMTP	9/1/2025, 11:41:09 AM GMT+5:30
2			→ [Google] 2002:a05:7010:21c8:b0:48b:fe99:27bf	SMTP	9/1/2025, 11:41:09 AM GMT+5:30

At the bottom left is a blue button labeled "ANALYZE ANOTHER HEADER".

Rubrics

Criteria	Mark Allotted	Mark Awarded
1. GitHub Activity & Submission Regularity	3	
2. Application of Forensic Tools & Practical Execution	3	
3. Documentation & Reporting	2	
4. Engagement, Problem-Solving & Team Collaboration	2	
Total	10	

Result:

Successfully analyzed the email header. All authentication checks (SPF, DKIM, DMARC) **passed**, indicating the email is **genuine**. The **delay** is not unusually long and doesn't suggest suspicious activity.