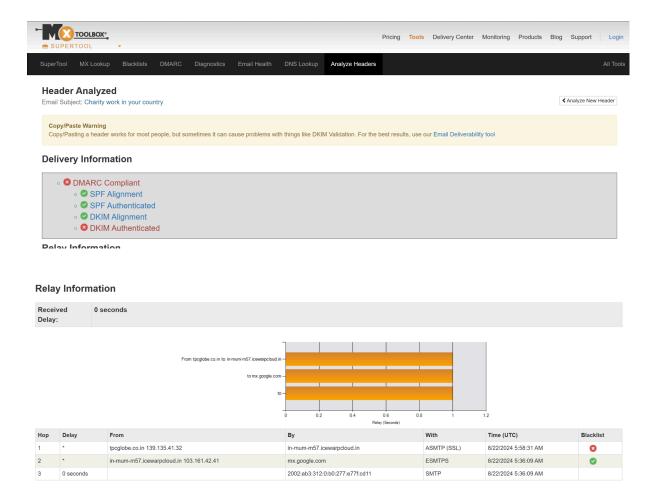
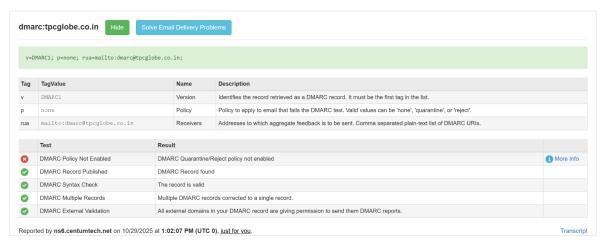
### **Analyzing a Phishing Email:**



#### SPF and DKIM Information





#### **Headers Found** Header Name Header Value jagannadhulapalli@gmail.com X-Forwarded-Encrypted i=2; AJvYcCXDcnGVxGYIdZoWpyCc5VvXRdpsi ayeJtnc65fzzRth7zK8e22N//FqARNuEo5pCAjhGoNJkkN8Vs07rDA84zATg==@gmail.com X-Received by 2002:a17:90b:1b48:b0:2c9:8c34:9754 with SMTP id 98e67ed59e1d1-2d5e9a66838mr4848952a91.21.1724304969219; Wed, 21 Aug 2024 22:36:09 -0700 (PDT) i=1; a=rsa-sha256; t=1724304969; cv=none; d=google.com; s=arc-20240605; b=XTYxzu0hYqggR2gZNN6MwoO819sufgZpcj901NafMly5duqUfE2IAjOvul50+ZMe683InKsEGIMx0gWiJuf2cJlRoxvvhhxB4lSAb4lljinGtgU1g7g9budplukCdvqDOlg4TZ G+mjpKDW08LCbqCyK0ZT4HiGP/PoPhcZlcIV8eRk7uW3oXEpqzp7s3s6ASXqhcZMqZ3G 9YxGwl4TEPExHgiQKSSdk3MS2f3kXvgFYFgv8QilolMeWlJe5jl8lY1TWpXYVPGbsN7Y e3Vk5NuZ7LuF7K4Q25x/odnmaVSR/f5pJJlvemXOvNqVHp/0j5CgTa2FGPhu47nWSQEO GBVQ=ARC-Seal ARC-Messagei=1; a=rsa-sha256; c=relaxed/relaxed; d=google.com; s=arc-20240605; h=mime-version;reply-to:message-id;subject;from:date:dkim-signature; bh=IYFQLiUIi+YUB4EAoPDear/fU6i6VD876sQnGveboRk=; fh= ARC-AuthenticationResults i=1; mx.google.com; dkim=temperror (no key for signature) header,i=@tpcglobe.co.in header.s=iwc header.b=STTI+Tz; spf=pass (google.com: domain of pmd@tpcglobe.co.in designates 103.161.42.41 as p ermitted sender) smtp.mailfrom=pmd@tpcglobe.co.in; dmarc=pass (p=NONE sp=NONE dis=NONE) header.from=tpcglobe.co.in <pmd@tpcglobe.co.in> Received-SPF pass (google.com; domain of pmd@tocglobe.co.in designates 103.161.42.41 as permitted sender) client-ip=103.161.42.41; Authentication-Results and the microscopic community of the many consists and the microscopic community of the many consists and the microscopic community of the many consists and the many consists and the microscopic community of the many consists and the microscopic community of the many consists and the microscopic community of th DKIM-Signature a=rsa-sha256; t=1724304516; x=1724909316; s=iwc; d=tpcqlobe,co.in; c=relaxed/relaxed; v=1; bh=IYFQLiUli+YUB4EAoPDear/fU6i6VD876sQnGyeboRk=; h=From;Reply-To:Subiect;Date:Message-ID:MIME-Version:Content-Type; b=STT1+TzuEnWV6lg0QqwxUho2pnPzK3O6JCnLMBgOlQ2lSh6Wna0FxhYqroZMSTRU/a3AxzptNOV2kzlqaGPafY384Txz1aTO3OJmFSCG2cRGOwzcXCje797g4+LyD7B7rCB53ay2lhWs/sq+zi8RLhEl2GQlwzB+lpYjEUzd2o= Date Wed, 21 Aug 2024 22:28:27 -0700 Subject Charity work in your country <32ffd09c6cee6e7962d2d746950ae454@tpcglobe.co.in> Message-ID

# Step 1: Email Header Analysis

Tool Used: MXToolbox Header Analyzer
 Email Subject: Charity work in your country

#### Observation:

The email header was analyzed to check the sender's authenticity and mail routing path. The results indicated:

DMARC: X Not CompliantSPF Alignment: V Passed

SPF Authentication: Passed
 DKIM Alignment: Passed

○ **DKIM Authentication:** X Failed

### • Interpretation:

The failure of DMARC and DKIM authentication suggests that the message may not be from a legitimate or authorized sender. SPF alone is not enough to ensure message trustworthiness.

## **Step 2: Relay Information (Mail Path Tracking)**

- The mail passed through the following servers:
  - 1. tpcglobe.co.in (139.135.41.32)  $\rightarrow$  icewarpcloud.in
  - 2. icewarpcloud.in (103.161.42.41) → mx.google.com
  - 3. **mx.google.com** → recipient mailbox

#### Blacklist Check:

The IP address **139.135.41.32** was found on a **blacklist**, indicating previous suspicious activity or spam-related behavior.

### Observation:

Although the delivery delay was 0 seconds (indicating quick delivery), the blacklist status and relay through external mail servers raise concerns about legitimacy.

## **Step 3: SPF and DKIM Record Validation**

### **SPF Record (Sender Policy Framework)**

v=spf1 mx a include:in-iwc-spf.icewarpcloud.in -all

**Result:** SPF is correctly configured and passes validation.

**Purpose:** SPF confirms that the sending mail server is authorized to send emails for the domain <a href="mailto:tpcqlobe.co.in">tpcqlobe.co.in</a>.

DKIM Record (DomainKeys Identified Mail)

v=DKIM1; k=rsa; n=1024; p=MIGfMA0GCSqGSlb3DQEBAQUAA4...

**Result:** DKIM signature verification failed (DKIM Authenticated: No)

**Reason:** Signature mismatch or modification in message content during transmission.

**Impact:** The email's integrity cannot be verified.

## **Step 4: DMARC Record Analysis**

v=DMARC1; p=none; rua=<u>mailto:dmarc@tpcglobe.co.in</u>;

**Policy (p):** none  $\rightarrow$  No action is taken even if SPF/DKIM fail.

**Result:** DMARC record published but not enforced.

### Interpretation:

This weak policy (p=none) allows potentially spoofed or phishing emails to bypass filters.

## **Step 5: Header Details Verification**

• Return-Path: pmd@tpcglobe.co.in

• **Received-SPF:** pass (Google confirms SPF validation)

• ARC Authentication Results: DKIM temporary failure

Authentication Results (Summary):

o SPF: pass

o DKIM: fail

DMARC: pass (because of p=none, not actual compliance)

### Observation:

Despite passing SPF, the failure of DKIM and a non-enforced DMARC make the email **suspect**. The sender's domain (tpcglobe.co.in) might be spoofed or misused.

### **Final Assessment:**

The analyzed email shows multiple red flags such as:

- Failed DKIM authentication
- Weak DMARC policy (p=none)

• Sender IP found on blacklist

These factors strongly indicate that the email could be a **phishing or spoofed message** sent from an unauthorized mail server.

# **Conclusion:**

Security Mechanism	<u>Result</u>	<u>Status</u>	<u>Risk</u>
SPF	Passed	<b>V</b>	Low
DKIM	Failed	X	High
DMARC	Not Enforced	<b>1</b>	High
Blacklist Status	Blacklisted IP	×	Critical