MXTOOLBOX

MXToolbox is a free online suite of network tools used to:

- Diagnose email (SMTP/MX) server issues,
- Check DNS records,
- Test blacklist status,
- Perform port scans, traceroutes, and more.

Originally built to check Mail eXchange (MX) records, it has since expanded into a full diagnostic toolbox for email admins, sysadmins, IT support, and cybersecurity professionals.

Use Case	**What It Helps You Do**
Email Troubleshooting	Diagnose delivery issues, verify SMTP settings
Blacklist Monitoring	Check if your IP/domain is on any spam blacklist
DNS Diagnostics	Inspect A, MX, TXT, SPF, DKIM, DMARC, CNAME, and more
Security Posture Checking	Validate security settings like SPF/DMARC to prevent spoofing
Alerting & Monitoring	Set alerts for domain/server blacklisting or DNS changes
Server Health Testing	Test SMTP, HTTP, TCP, and DNS response performance

Now let us see key features of this MXToolbox:

1. MX Lookup

- Checks your domain's MX (Mail Exchange) records.
- Shows what mail servers are responsible for accepting your emails.
- Use it to verify mail routing and catch misconfigured email setups.

2. Blacklist Check

- Scans your IP or domain against 80+ spam blacklists (like Spamhaus, SORBS).
- Helps prevent emails from going to spam folders.
- ➢ Useful for email deliverability and reputation management

3. SPF, DKIM, DMARC Lookup

- SPF (Sender Policy Framework): Prevents spoofing by validating sending IPs.
- DKIM (DomainKeys Identified Mail): Verifies that the message hasn't been altered.
- DMARC: Tells receiving servers what to do if SPF or DKIM fail (e.g., reject/quarantine).
- ➢ Helps fight email spoofing, phishing, and spam.

4. DNS Tools

- DNS Lookup: Shows all records for a domain.
- A, CNAME, TXT Lookup: Check specific record types.
- DNS Propagation Check: See if recent DNS changes have spread across the globe.
- ➢ Critical for domain migration, email setup, CDN issues, etc.

5. SMTP Test

- Tests mail server on port 25 to verify:
    - Open relays
    - SMTP banner
    - TLS/SSL support
    - STARTTLS availability
    - Authentication mechanism
- ➢ Great for email security testing.

6. Port Scan

- Checks if specific ports are open on a server (like 25, 80, 443, etc.).
- Can be used to detect unnecessary open ports — important for security hardening.

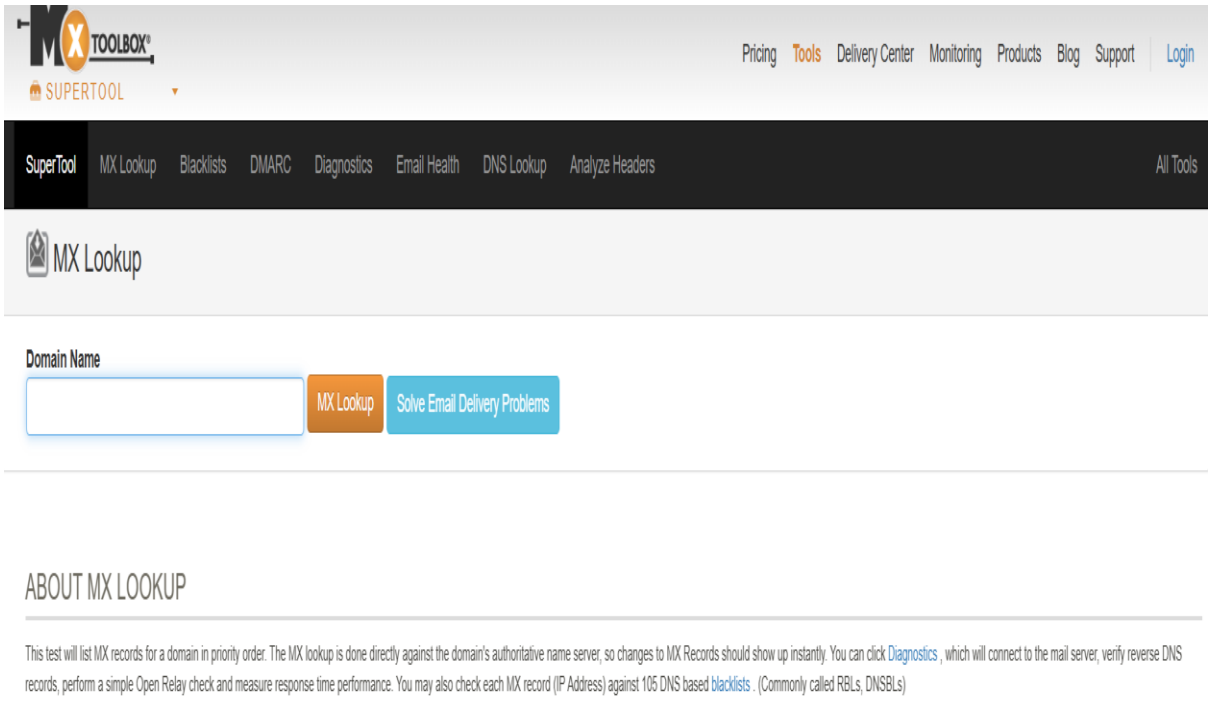
7. Traceroute & Ping

- Similar to traceroute and ping on Linux/Windows CLI.
- Lets you troubleshoot latency or connectivity issues from their remote servers.

Now we may ask why is it important for this cybersecurity field?

MXToolbox isn't just for email admins — it plays a key role in cybersecurity:

- Detect spoofing vulnerabilities (via SPF/DKIM/DMARC checks)
- Find DNS misconfigurations that can lead to subdomain takeover
- Monitor your IP/domain reputation on blacklists
- Identify weak SMTP servers (e.g., open relays vulnerable to abuse)
- Monitor your domain for sudden DNS changes (which may indicate hijacking)



SuperTool Beta9

www.asus.in | MX Lookup

mx:www.asus.in Find Problems | Solve Email Delivery Problems | mx

Type	Domain Name	Canonical Name	TTL	
CNAME	www.asus.in	asus.in	23 min	Blacklist Check SMTP Test

	Test	Result
✔	DNS Record Published	DNS Record found
✔	DMARC Record Published	DMARC Record found
✔	DMARC Policy Not Enabled	DMARC Quarantine/Reject policy enabled

dns lookup | dns check | dmarc lookup | spf lookup | dns propagation

Reported by **ns2.asus.in** on 6/18/2025 at **3:59:32 AM (UTC -5)**, just for you. Transcript

ABOUT THE SUPERTOOL!

All of your MX record, DNS, blacklist and SMTP diagnostics in one integrated tool. Input a **domain name** or **IP Address** or **Host Name.** Links in the results will guide you to other relevant tools and information. And you'll have a chronological history of your results.

If you already know exactly what you want, you can force a particular test or lookup. Try some of these examples:

(e.g. "blacklist: 127.0.0.2" will do a blacklist lookup)

Command	Explanation
blacklist:	Check IP or host for reputation
smtp:	Test mail server SMTP (port 25)
mx:	DNS MX records for domain
a:	DNS A record IP address for host name
spf:	Check SPF records on a domain
txt:	Check TXT records on a domain
ptr:	DNS PTR record for host name
cname:	DNS canonical host name to IP address
whois:	Get domain registration information
arin:	Get IP address block information
soa:	Get Start of Authority record for a domain
tcp:	Verify an IP Address allows tcp connections
http:	Verify a URL allows http connections
https:	Verify a URL allows secure http connections
ping:	Perform a standard ICMP ping
trace:	Perform a standard ICMP trace route
dns:	Check your DNS Servers for possible problems **New!**

Other tools

SuperTool Beta9

msi.com | MX Lookup

mx:msi.com | Find Problems | Solve Email Delivery Problems | mx

Microsoft Outlook.com now requires DMARC - Get SPF, DKIM and DMARC setup and maintain compliance with Delivery Center

Pref	Hostname	IP Address	TTL	
10	mail3.msi.com	220.130.147.44 Asia Pacific Network Information Centre (AS3462)	5 min	Blacklist Check SMTP Test
10	mail4.msi.com	203.66.186.33 Asia Pacific Network Information Centre (AS3462)	5 min	Blacklist Check SMTP Test
20	mail31.msi.com	203.66.186.105 Asia Pacific Network Information Centre (AS3462)	5 min	Blacklist Check SMTP Test
20	mail7.msi.com	114.30.40.51 Chunghwa Telecom Co., Ltd. (AS10126)	5 min	Blacklist Check SMTP Test

	Test	Result
✓	DNS Record Published	DNS Record found
✓	DMARC Record Published	DMARC Record found
✓	DMARC Policy Not Enabled	DMARC Quarantine/Reject policy enabled

dns lookup | dns check | dmarc lookup | spf lookup | dns propagation

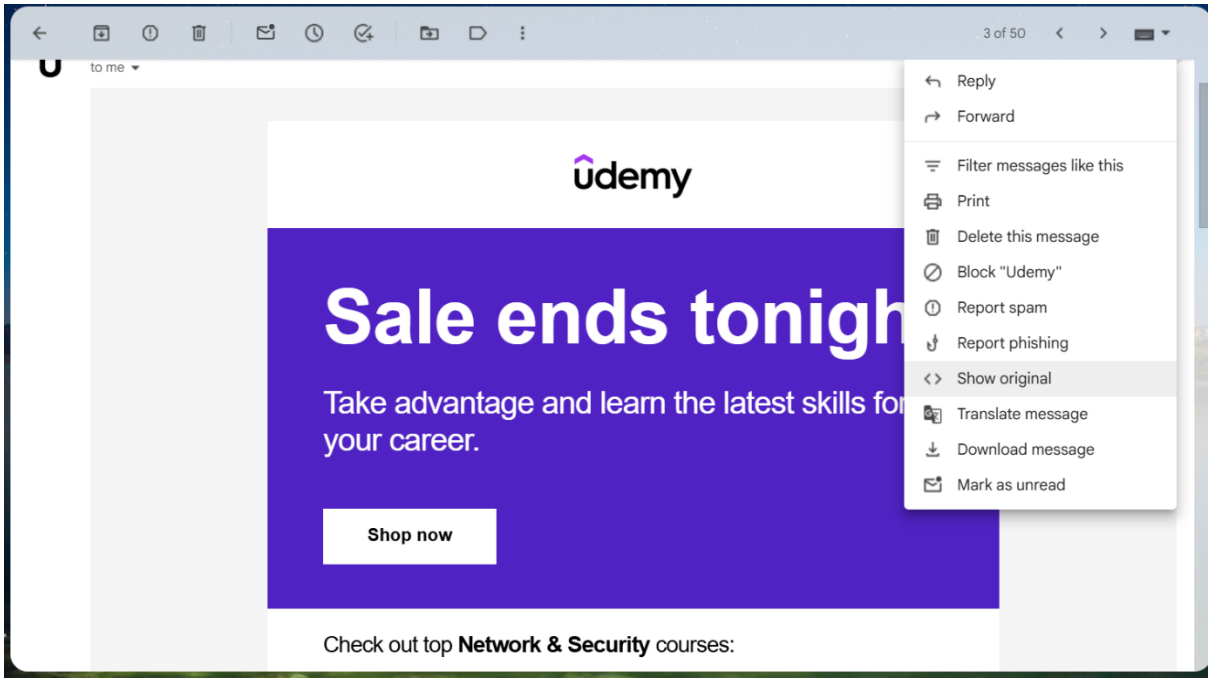
Reported by **dns3.msi.com** on 6/18/2025 at **4:01:31 AM (UTC -5)**, just for you. Transcript

Now we will analyse email header using this Mx toolbox:

What is an email header?

An email header is the **technical metadata** of an email. It contains information such as:

- Sender and recipient addresses
- Timestamps
- Server IPs and hostnames (received lines)
- Authentication results (SPF, DKIM, DMARC)
- Message routing path (hop-by-hop)



This is how we navigate in our mail to view the original message.

Original Message

Message ID	<6JnaFTHcSbKB92R032ID4A@geopod-ismtpd-31>
Created at:	Wed, Jun 18, 2025 at 8:05 AM (Delivered after 1 second)
From:	Udemy <hello@students.udemy.com>
To:	[redacted]
Subject:	Shop this sale — it ends today
SPF:	PASS with IP 149.72.186.135 Learn more
DKIM:	'PASS' with domain students.udemy.com Learn more
DMARC:	'PASS' Learn more


```
Delivered-To: [redacted]
Received: by 2002:a05:6a21:330b:b0:218:2ee9:2c5c with SMTP id yx11csp2880712pzb;
        Tue, 17 Jun 2025 19:35:05 -0700 (PDT)
X-Google-Smtp-Source: AGHT+IFWuMTJ9qY25d6dYRt5zZsyod7BZi5rZS+0RaM5gCqj5fiXyaneoQCQsQH/ZfD6lQ5OWmNA
X-Received: by 2002:a17:90b:528f:b0:312:2bb:aa89 with SMTP id 98e67ed59e1d1-313f1d50e08mr21934255a91.20.1750214104955;
        Tue, 17 Jun 2025 19:35:04 -0700 (PDT)
ARC-Seal: i=1; a=rsa-sha256; t=1750214104; cv=none;
        d=google.com; s=arc-20240605;
        b=cfyPB8BigWyrQosWJno7q1ldXqK/zU/do36wvbZ6WMOCH27kuBxa1EvSDqdlr0JHMo
         8Px8aNREKXIKOD2SkljHNo8hgcHNSZhxsQaMU1z2ec+KBNumuD7aLPeNHqaKBYr/of3f
         P7Glbcz+diS13bWcCjWke1fOkRQQV1hK6oNTFLfj3x7UiDK3XeVdBsY+1uc+4sPzW42G
         vXbIu+pT21h9x9ze/SpQJ04JefyQ71Ukk3ZLPpUv9vRTpUSb4nj6++3S6e9lvnsvdPvO
         HIeTntFYcRDTpCcuG8kDKW51dh4fcbM8KnKFRnA16n5NHaoDIYNJNSXCpjBT6FY5Cq5Y
         Lklg==
ARC-Message-Signature: i=1; a=rsa-sha256; c=relaxed/relaxed; d=google.com; s=arc-20240605;
        h=to:list-unsubscribe-post:list-unsubscribe:reply-to:subject
         :message-id:mime-version:from:date:dkim-signature:dkim-signature;
        bh=1FPrnIVoohdZ3/Kyv0NtiihSWbcWJNNALnDIzDsKx34=;
        fh=naxqHEeiZY4rycTrLO86ASmSZ8lONbZhPzGdGZhgyXE=;
        b=K3fg9jHYgll2rOh40WVF5AK49Y/wZMZk+HBhZY83cCL6Ydd4ciFyoTH43zHoqf09xR
         W8Z60binhaqj6igMkFr1S0SFmOwD3FKwYpNCSDU2zNGlql9zoQO0Pd+u6oJtk53CAkGy
         VXUMYKO9Tf3+y+XbIOKDI9vom/5Hv06dAHKIErdmzH4PjhDzFcCdqIu69lwBZ3VAxQIt
         4CAQelqHShAN/UfqDuN3yln+l12hIYwZKzfCn/DKWgrw2kp6g8Gq2Fwts/Z32FCRgb0Y
         /gtLqYyw6x/Ve1kr5cpO1okQc9o9Xkvxy22wfeLWVMqIM3h01H36i2FrBwNp7lWU50Hh
         b/Sw==;
        dara=google.com
ARC-Authentication-Results: i=1; mx.google.com;
       dkim=pass header.i=@students.udemy.com header.s=s1 header.b=m6Jf1Hwe;
       dkim=pass header.i=@sendgrid.info header.s=smtpapi header.b=RHiNiHW7;
       spf=pass (google.com: domain of bounces+21743674-4694-[redacted]@abmail.students.udemy.com designates
149.72.186.135 as permitted sender) smtp.mailfrom="bounces+21743674-4694-[redacted]com@abmail.students.udemy.com";
       dmarc=pass (p=REJECT sp=REJECT dis=NONE) header.from=students.udemy.com
Return-Path: <bounces+21743674-4694-[redacted]@abmail.students.udemy.com>
Received: from o3615.abmail.students.udemy.com (o3615.abmail.students.udemy.com. [redacted])
        by mx.google.com with ESMTPS id 98e67ed59e1d1-3141d4b011bsi6215847a91.105.2025.06.17.19.35.04
        for [redacted]
```

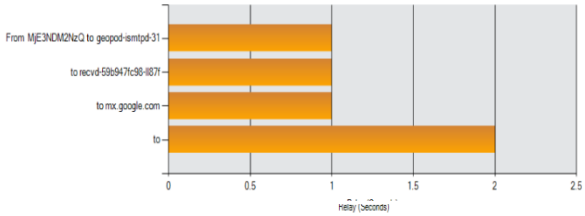
This is the original message, now we need to paste this message in email analyser in Mx toolbox to view the output.

Delivery Information

- DMARC Compliant
  - SPF Alignment
  - SPF Authenticated
  - DKIM Alignment
  - DKIM Authenticated

Relay Information

Received Delay:	1 seconds



Hop	Delay	From	By	With	Time (UTC)	Blacklist
1	*	MjE3NDM2NzQ	geopod-ismtpd-31	HTTP	[]	
2	*		recvd-59b947fc98-ll87f	SMTP	[]	
3	*	o3615.abmail.students.udemy.com 149.72.186.135	mx.google.com	ESMTPS	6/18/2025 2:35:04 AM	✓
4	1 Second		2002:a05:6a21:330b:b0:218:2ee9:2c5c	SMTP	6/18/2025 2:35:05 AM	

Gmail & Yahoo are now requiring DMARC - Get yours setup with Delivery Center

SPF and DKIM Information

dmarc:students.udemy.com Show Solve Email Delivery Problems

v=DMARC1; p=reject; rua=mailto:dmarc-udemy@udemy.com; ruf=mailto:dmarc-udemy@udemy.com; rf=afrf; fo=1; pct=100

spf:abmail.students.udemy.com:149.72.186.135 Show Solve Email Delivery Problems

v=spf1 include:sendgrid.net ~all

dkim:students.udemy.com:s1 Show

Dkim Public Record:

k=rsa; t=s; p=MIIBIjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEAyGHVTn3HEuQCY/736jrMG8HGAbRFgBSCrQCs8HVUhqjvgl+RaDuqPia+tncfBwjkqRXa5F6PeI+HvegdXR771X5JUlqXdpFaaYXHbVTn8kiLCKvxc1Kr2gaPA972A5NubhvbV2Vu5Ox9WeR6IIEeI93cjgx4lOuwkdh7hOSZxr1i/8gmIsRFX68aPqQPvFTXBFLSQ+OOdftPWcoS9qyX6c/XzzeVoEPX3dUNh1Vu84FFDmhz

Dkim Signature:

v=1; a=rsa-sha256; c=relaxed/relaxed; d=students.udemy.com; h=content-type:from:mime-version:subject:reply-to:list-unsubscribe: list-unsubscribe-post:to:cc:content-type:feedback-id:from:subject:to; s=s1; bh=1FPrnIVoohdI3/KyvWHtiihSWbcWJNWALnOIiDsKx34=; b=M63fIWwe49CU74BqjI9cR5oExcdFZnm+ZgnWPEIgyic

dkim:sendgrid.info:smtpapi Show

Dkim Public Record:

k=rsa; t=s; p=MIGfMA0GCSqGSIb3DQEBAQUAA4GNADCBiQKBgQDPfu6iwpXVP1H5Fzj7Nr1BU5zUV5zqqzjE0D1r04xDN6qwzlDmmgcFNWnfWeWXNX2DlO+ZI9N14hRprzbyFwfQh76jo7H54HUu3uSbQ3P0A7KdoBGufRF8zbFuA8m0I+2y0cIEjHlLXY4WU4LwPA7mHqBObmvSjhd63D9d8z1XKUBwIDAQAB

Dkim Signature:

v=1; a=rsa-sha256; c=relaxed/relaxed; d=sendgrid.info; h=content-type:from:mime-version:subject:reply-to:list-unsubscribe: list-unsubscribe-post:to:cc:content-type:feedback-id:from:subject:to; s=smtpapi; bh=1FPrnIVoohdI3/KyvWHtiihSWbcWJNWALnOIiDsKx34=; b=RHlNIWh7SUCSh66DrNuIIxfrsgf7Nt4FunU8FKzfOM

Headers Found

Header Name	Header Value
Delivered-To	[redacted]
X-Google-Smtp-Source	AGHT+IFWuMTJ9qY25d6dYRt5zZsyod7BZi5rZS+0RaM5gCqj5fiXyaneoQCQsQH/ZfD6lQ5OWmNA
X-Received	by 2002:a17:90b:528f:b0:312:2bb:aa89 with SMTP id 98e67ed59e1d1-313f1d50e08mr21934255a91.20.1750214104955; Tue, 17 Jun 2025 19:35:04 -0700 (PDT)
ARC-Seal	i=1; a=rsa-sha256; t=1750214104; cv=none; d=google.com; s=arc-20240605; b=cfyPB8BigWyrQosWJno7q1ldXqK/zU/do36wvbZ6WMOCH27kuBxa1EvSDqdIr0JHMo 8Px8aNREKXIKOD2SkljHNo8hgcHNSZhxsQaMU1z2ec +KBNumuD7aLPeNHqaKBYr/of3f P7Glbcz+diS13bWcCjWke1fOkRQQV1hK6oNTFLfj3x7UiDK3XeVdBsY+1uc+4sPzW42G vXbIu+pT21h9x9ze/SpQJ04JefyQ71Ukk3ZLPpUv9vRTpUSb4nj6++3S6e9lvnsvdPvO HIeTntFYcR DTpCcuG8kDKW51dh4fcbM8KnKFRnA16n5NHaoDIYNJNSXCpjBT6FY5Cq5Y Lklg==
ARC-Message-Signature	i=1; a=rsa-sha256; c=relaxed/relaxed; d=google.com; s=arc-20240605; h=to:list-unsubscribe-post:list-unsubscribe:reply-to:subject :message-id:mime-version:from:date:dkim-signature:dkim-signature; bh=1FPrnIVoohdZ3/Kyv 0NtiihSWbcWJNNALnDIzDsKx34=; fh=naxqHEeiZY4rycTrLO86ASmSZ8lONbZhPzGdGZhgyXE=; b=K3fg9jHYgll2rOh40WVF5AK49Y/wZMZk+HBhZY83cCL6Ydd4ciFyoTH43zHoqf09xR W8Z60binhaqj6igMkFr1S0SFmOwD 3FKwYpNCSDU2zNGlql9zoQO0Pd+u6oJtk53CAkGy VXUMYKO9Tf3+y+XbIOKDI9vom/5Hv06dAHKIErdmzH4PjhDzFcCdqIu69lwBZ3VAxQIt 4CAQeIqHShAN/UfqDuN3yln+l12hIYwZKzfCn/DKWgrw2kp6g8Gq2Fwts/Z32FCR gb0Y /gtLqYyw6x/Ve1kr5cpO1okQc9o9Xkvxy22wfeLWVMqIM3h01H36i2FrBwNp7lWU50Hh b/Sw==; dara=google.com
ARC-Authentication-Results	i=1; mx.google.com; dkim=pass header.i=@students.udemy.com header.s=s1 header.b=m6Jf1Hwe; dkim=pass header.i=@sendgrid.info header.s=smtpapi header.b=RHiNiHW7; spf=pass (google.com: domain of bounces+21743674-4694[redacted]@abmail.students.udemy.com designates 149.72.186.135 as permitted sender) smtp.mailfrom="bounces+21743674-4694[redacted]@abmail.students.udemy.com"; dmarc=pass (p=REJECT sp=REJECT dis=NONE) header.from=students.udemy.com
Return-Path	<bounces+21743674-4694-vamshikothmire007=gmail.com@abmail.students.udemy.com>
Received-SPF	pass (google.com: domain of bounces+21743674-4694-[redacted]@abmail.students.udemy.com designates [redacted] as permitted sender) client-ip=[redacted]
Authentication-Results	mx.google.com; dkim=pass header.i=@students.udemy.com header.s=s1 header.b=m6Jf1Hwe; dkim=pass header.i=@sendgrid.info header.s=smtpapi header.b=RHiNiHW7; spf=pass (google.com: domain of bounces+21743674-4694-[redacted]@abmail.students.udemy.com designates 149.72.186.135 as permitted sender) smtp.mailfrom="bounces+21743674-4694[redacted]@abmail.students.udemy.com"; dmarc=pass (p=REJECT sp=REJECT dis=NONE) header.from=students.udemy.com
DKIM-Signature	v=1; a=rsa-sha256; c=relaxed/relaxed; d=students.udemy.com; h=content-type:from:mime-version:subject:reply-to:list-unsubscribe: list-unsubscribe-post:to:cc:content-type:feedback-id:from:subject:to; s=s1; bh=1FPrnIVoohd Z3/Kyv0NtiihSWbcWJNNALnDIzDsKx34=; b=m6Jf1Hwe49CUJ4Bqj29cRSoExcdFZn+cZgrmPElgyicM+40etR4kJZIM23iGVatWpX/z jcXPcAfbgYB0TWM6NzzhPHu7Ullyh7NeMUQ2FRLl8NXD814jeZtyKTkD1GSYz/U7cDsh7d TnAR+DuuTgY1DZ/5vACjLLmYsZiHZbWakR1q68T6A6xmBXTJ7bZN60Xw9fwpZmoLikck97 4kK9SQCr5NiHR+ilzSJbPaAWbVljPbNsmsbR+2yjPvvrQJTXl2993YuIl+hAepiqwGrm6k jeARbN5nu0QGlPH15H17s5UECAH/NUiB DVvFS/6EMQK5F0+YmBTb+OmkXa79lYzw==
Content-Type	multipart/alternative; boundary=76b354ce242c27de7e1bbfcf162b962e014c95e4696b8ad64bcc75fad7c9

Received Header

```
[redacted]
X-Google-Smtp-Source: AGHT+IFWuMTJ9qY25d6dYRt5zZsyod7BZi5rZS+0RaM5gCqj5fiXyaneoQCQsQH/ZfD6lQ5OWmNA
X-Received: by 2002:a17:90b:528f:b0:312:2bb:aa89 with SMTP id 98e67ed59e1d1-313f1d50e08mr21934255a91.20.1750214104955;
        Tue, 17 Jun 2025 19:35:04 -0700 (PDT)
ARC-Seal: i=1; a=rsa-sha256; t=1750214104; cv=none;
        d=google.com; s=arc-20240605;
        b=cfyPB8BigWyrQosWJno7q1ldXqK/zU/do36wvbZ6WMOCH27kuBxa1EvSDqdIr0JHMo
         8Px8aNREKXIKOD2SkljHNo8hgcHNSZhxsQaMU1z2ec+KBNumuD7aLPeNHqaKBYr/of3f
         P7Glbcz+diS13bWcCjWke1fOkRQQV1hK6oNTFLfj3x7UiDK3XeVdBsY+1uc+4sPzW42G
         vXbIu+pT21h9x9ze/SpQJ04JefyQ71Ukk3ZLPpUv9vRTpUSb4nj6++3S6e9lvnsvdPvO
         HIeTntFYcRDTpCcuG8kDKW51dh4fcbM8KnKFRnA16n5NHaoDIYNJNSXCpjBT6FY5Cq5Y
         Lklg==
ARC-Message-Signature: i=1; a=rsa-sha256; c=relaxed/relaxed; d=google.com; s=arc-20240605;
        h=to:list-unsubscribe-post:list-unsubscribe:reply-to:subject
         :message-id:mime-version:from:date:dkim-signature:dkim-signature;
        bh=1FPrnIVoohdZ3/Kyv0NtiihSWbcWJNNALnDIzDsKx34=;
        fh=naxqHEeiZY4rycTrLO86ASmSZ8lONbZhPzGdGZhgyXE=;
        b=K3fg9jHYgll2rOh40WVF5AK49Y/wZMZk+HBhZY83cCL6Ydd4ciFyoTH43zHoqf09xR
         W8Z60binhaqj6igMkFr1S0SFmOwD3FKwYpNCSDU2zNGlql9zoQO0Pd+u6oJtk53CAkGy
         VXUMYKO9Tf3+y+XbIOKDI9vom/5Hv06dAHKIErdmzH4PjhDzFcCdqIu69lwBZ3VAxQIt
         4CAQeIqHShAN/UfqDuN3yln+l12hIYwZKzfCn/DKWgrw2kp6g8Gq2Fwts/Z32FCRgb0Y
         /gtLqYyw6x/Ve1kr5cpO1okQc9o9Xkvxy22wfeLWVMqIM3h01H36i2FrBwNp7lWU50Hh
         b/Sw==;
        dara=google.com
ARC-Authentication-Results: i=1; mx.google.com;
       dkim=pass header.i=@students.udemy.com header.s=s1 header.b=m6Jf1Hwe;
       dkim=pass header.i=@sendgrid.info header.s=smtpapi header.b=RHiNiHW7;
       spf=pass (google.com: domain of bounces+21743674-4694[redacted]@abmail.students.udemy.com designates 149.72.186.135 as permitted sender) smtp.mailfrom="bounces+21743674-4694-var
       dmarc=pass (p=REJECT sp=REJECT dis=NONE) header.from=students.udemy.com
Return-Path: <bounces+21743674-4694-[redacted]@abmail.students.udemy.com>
Received: from o3615.abmail.students.udemy.com (o3615.abmail.students.udemy.com. [149.72.186.135])
        by mx.google.com with ESMTPS id 98e67ed59e1d1-3141d4b011bsi6215847a91.105.2025.06.17.19.35.04
        for [redacted]
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