

# SMTP Server (MAIL Server)

What's a mail?

Let's say if a user is sending an email

From : akash@gmail.com

To : support@outlook.com

Now how the sender's mailserver would know that where to send the mail?

So first it checks for the domain associated with the mail, "outlook.com" and queries DNS

for the MX Record.  $\Rightarrow$  mailserver.com

↓

Mail Exchange Record: it handles the mail seq on the domain by exchanging the server's domain ~~IP~~ that's responsible for handling the mail

$\Rightarrow$  Next it queries DNS to get the IP associated with the domain (mailserver.com) A Record

↑

DNS:

1) outlook.com MX  $\Rightarrow$  mailserver.com

2) mailserver.com A  $\Rightarrow$  1.2.3.4

Similarly we have few more Records:

2. DKIM: stores the public key that's used to validate ~~the~~ and decrypt the email on the recipient mail server.

3. DMARC: tells the receiving mail servers how to handle emails that don't authenticate

4. SPF: It allows the recipient mx to identify which servers are allowed to send emails from a domain

→ used to verify that email from a domain are legitimate

⇒ and help prevent spam

⇒ that's why in case of no-dmARC the mails are getting marked as spams!!

SPF Version      Allow Servers mentioned in A Record

eg. `v=spf1 a include:_spf.google.com -all`

authorize emails that the sender can send on

tells the receiver's server to only authorize listed in here!

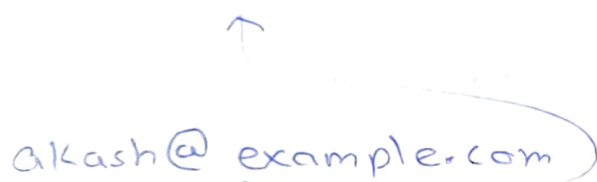
Mail Server:

We have the SMTP that handles the sending & receiving of the mail

SMTP operates on PORT 25

and SMTPS (secured) on 465

DNS settings:

	Record	
mail.example.com	A	1.2.3.4
example.com	MX	mail.example.com
		
akash@example.com		

for HTTP server

So as we have a HTTP methods like GET, POST etc. only on SMTP we have commands:

Flow:

1) handshake: establish a TCP connection

2) email transfer

3) termination: closing a TCP connection

1) HELO/EHLO: initiate the SMTP session conversation  
↳ That's where we can perform necessary DNS query checks like SPF & DKIM

eg. HELO gmail.com

↓  
this domain is trying to establish a connection

2) MAIL FROM : initiates a mail transfer

e.g. MAIL FROM "akash@gmail.com" } sender mailbox

3) RCPT TO : specifies the recipient

↳ includes a destination mailbox

e.g. RCPT TO "me@devakash.in"  
↓

here we can add checks for the username and accept or reject accordingly

4) DATA : the client asks server for permission to transfer the mail data

5) QUIT : send the req to terminate the SMTP session

e.g. Client M.S.: SMTP Server

