**How Does an Email Message Flow from  
Sending to Delivery?**

## Understanding Email Message Flow, from Sending to Delivery

For most users, how an email message flows from the sender to a recipient’s inbox is something that happens behind the scenes. When an individual or an organization sends an email, the message travels from its point of origination, such as an email client where it was composed, across the Internet to its destination. Along the way, it passes through multiple servers that help ensure it arrives at the right place. That email message flow uses a systematic process based on a number of long-established technical standards.

### How does an email message flow?

Email has been around since the 1960s, when the creators of nascent computer networks began devising ways to send messages to each other. In those early days, users were limited to communicating only with others on the same shared mainframe system. However, the adoption of standard protocols and the interconnection of systems into the shared network we now know as the Internet allowed different mail systems to “talk” to each other.

It’s these standards that allow us to send email messages to virtually anyone. When someone sends an email message, it flows through a series of steps to reach its destination.

* When an individual writes a message, it’s usually done in an email client like Outlook or Apple Mail—or in a web-based service like Gmail.
* However, when the message is a [transactional email](https://www.sparkpost.com/resources/email-explained/transactional-email/) like a shipping notice or a password reset, the message is created automatically by those systems, usually using an [email API](https://www.sparkpost.com/resources/email-explained/email-api/). (Marketing messages are generated by automated systems as well, although usually in large batches, rather than one at a time like transactional messages.)
* In both cases, whether the message is created by an email client or by an automated system, it is specially formatted to be transmitted over the Internet using a standard called “Simple Mail Transfer Protocol” (SMTP).
* The sender’s mail server (technically called a “Mail Transfer Agent,” or MTA) looks up the “@domain.com” portion of the recipient’s email address in a Domain Name System (DNS) server to determine which destination mail server (referred to as a “Mail Exchanger,” or MX) it should contact to deliver the message.
* The sending and receiving servers communicate using the SMTP protocol. The receiving server accepts the message so that it can be delivered to the recipient.
* The recipient’s email client retrieves the message using standards like the Post Office Protocol (POP) or Internet Message Access Protocol (IMAP) to download the message so it can be read.

### How do email clients download a message?

Web-based email services like Gmail or Hotmail/Outlook.com use their own internal protocols to manage email. But when recipients use a stand-alone email client on a phone or desktop computer, that software uses standard protocols to download messages from mail servers.

When the recipient uses POP, the server delivers all new emails to them and only keeps copies of them if an option in the email client is checked, if applicable. If the server doesn’t have copies of the emails and the recipient suffers a hardware loss or failure, those messages are gone forever, unless the senders have copies of them.

When the recipient uses IMAP, the server syncs the contents of the mailbox, including its Sent Items and other folders, to each device that connects with it. The messages remain on the server, and when the status of one changes (for example, it’s read or deleted), that change propagates across all devices when they connect again.

The ability to retain and sync messages on multiple devices is why most email services today use IMAP instead of POP.