

Notes on E-Mail Receipt

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When deciding whether we should presume that someone has received an electronic message, it might be useful to look at some of the ways in which the message can be lost. The first two pages of this note look at the route from sender to receiver. The last page looks at the ways the message can be lost or corrupted along the route. Under which of these circumstances should a lost or corrupted message be presumed to have been received?

I. Sender writes the message

II. Transmit the message to the sender's ISP

III. Intermediate servers and switches

IV. Receiver's ISP

A. receiver's ISP is actually just a mail forwarder (e.g. johndoe@acm.org) so should we treat it as an intermediate server?

B. The receiver's ISP forwards to a sub-server, e.g. jones.edu to law.jones.edu (in order to reach prof@law.jones.edu, which is on prof's business card).

C. The receiver's ISP has several internal servers, not visible to the public, so to get to jones@best.com, mail goes to shellx.best.com and is then forwarded to jones@shell5.best.com.

D. The receiver's ISP hosts the receiver's domain. For example, jones.com is hosted by best.com and mail to jones@jones.com is identical to jones@vip.best.com.

1. jones.com has a permanent IP number
2. jones.com uses host's IP number and then host temporarily assigns an IP number for a given session

V. Transfer from ISP to Recipient's local machine

A. Hardwired connection between ISP and local machine

1. Recipient is directly connected to ISP by a hardwired terminal. Mail reading is done by a process (like PINE) that runs on the host computer.
2. Recipient directly connected, leaves mail on the host computer, but uses a mail reading and formatting program that runs on the recipient's local computer.
3. Recipient's local computer is directly connected to the ISP. Recipient downloads mail onto local machine and processes it at that local machine.

B. Recipient dials into ISP

1. Recipient dials into an ISP, uses a dumb terminal or network computer, using a process that runs on the host computer and leaves the mail on the host.
2. Recipient directly connected to or dials into an ISP, leaves mail on the host computer, but uses a mail reading and formatting program that runs on the recipient's local computer.
3. Recipient's local computer dials into an ISP. Recipient downloads mail onto local machine and processes it at the local machine.

C. Recipient's LAN gets mail from ISP (LAN is invisible to outsider)

1. Recipient has direct connection to LAN
 - a) Recipient has dumb terminal direct connect to LAN
 - b) Recipient has smart terminal or computer, direct connect to LAN, but reads mail using host program
 - c) Recipient has smart terminal or computer, direct connect to LAN, formats mail locally but stores mail on server
 - d) Recipient has a computer, direct connect to LAN, downloads mail from server.

D. Recipient has dial-in connection to LAN.

- a) Recipient has dumb terminal
 - b) Recipient has smart terminal or computer, but reads mail using host program and stores mail on server
 - c) Recipient has smart terminal or computer, formats mail locally but stores mail on server.
 - d) Recipient has computer, downloads mail and reads mail locally.
2. Recipient has sub-LAN connection to LAN (and a sub-sub-LAN, etc.)

E. The local machine is actually directly and permanently connected to the Net, has its own dedicated IP numbers, and messages might come to it from many different external machines that it is in some way(s) connected to.

POINTS OF FAILURE

I. Mail reaches the machine, but is lost or corrupted before user has any reasonable opportunity to become aware of it

A. Example-there is a firewall at the machine and it is programmed to filter incoming spam. A message, "Hot Body of Law Means \$\$\$" might be editorial but would be filtered by many spam-filters.

II. Mail reaches the machine, but is lost or corrupted after some time has passed, but before the mail is moved to the next place (e.g. hits the server but dies before it gets from .edu to law.edu)

III. Mail reaches the machine, and the next processing step is one under control of the recipient (e.g. recipient will get mail when he logs on, or issues a download command, or next runs PINE.)

A. The mail is lost or corrupted before the recipient becomes aware of the existence of this message

B. The mail is lost or corrupted after recipient (or its mail program) becomes aware of the existence of this message, during the attempt to download it

C. The mail is lost or corrupted after recipient (or its mail program) becomes aware of the existence of this message, during the attempt to read the message (e.g. using pine)

IV. The mail has been downloaded onto the machine local to the recipient. The mail is lost or corrupted

A. Before the recipient even discovers that the mail is there.

B. Before the recipient attempts to read it.

C. During the recipient's attempt to read it.

D. After the recipient has opened and closed the message but before the recipient has actually read the message.

E. After the recipient has read the message but before the recipient has used the information in the intended manner.