Introduction to Information Security
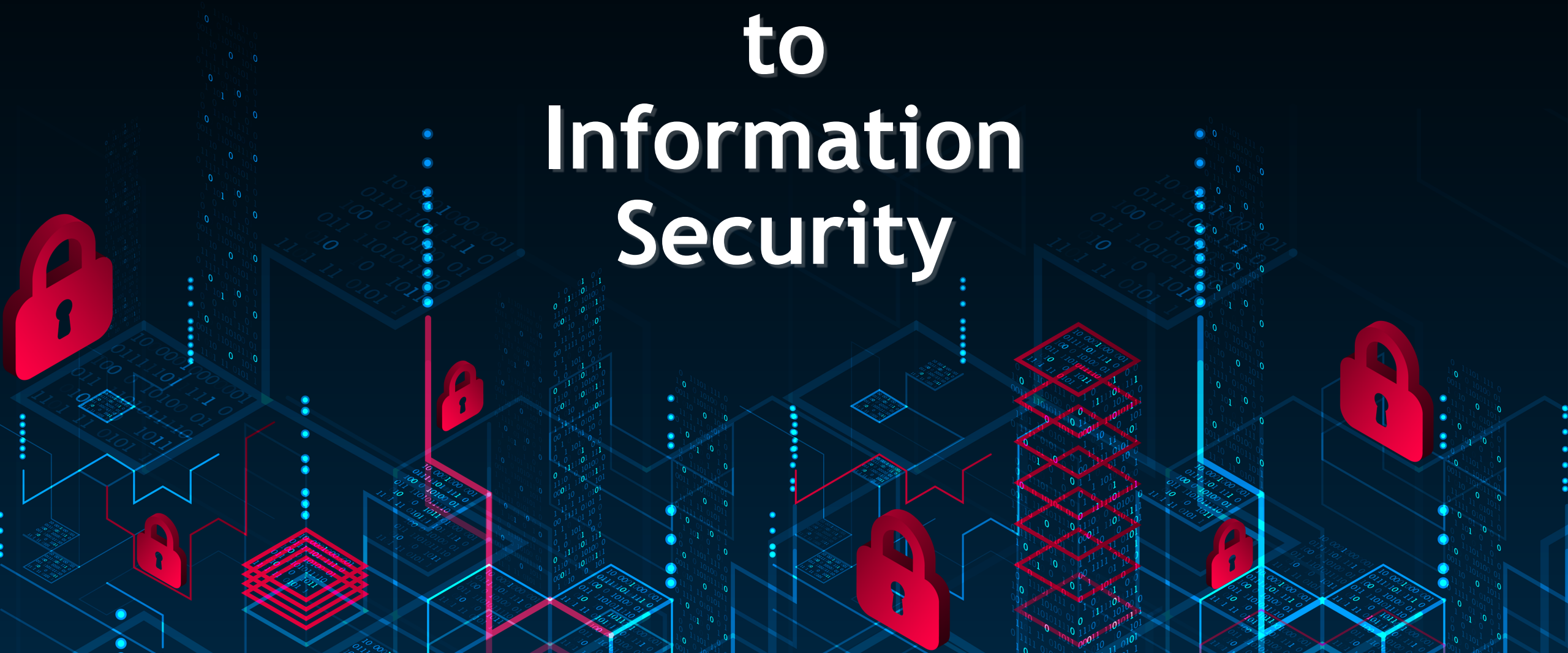
Types of Attacks

Passive attacks

Active attacks
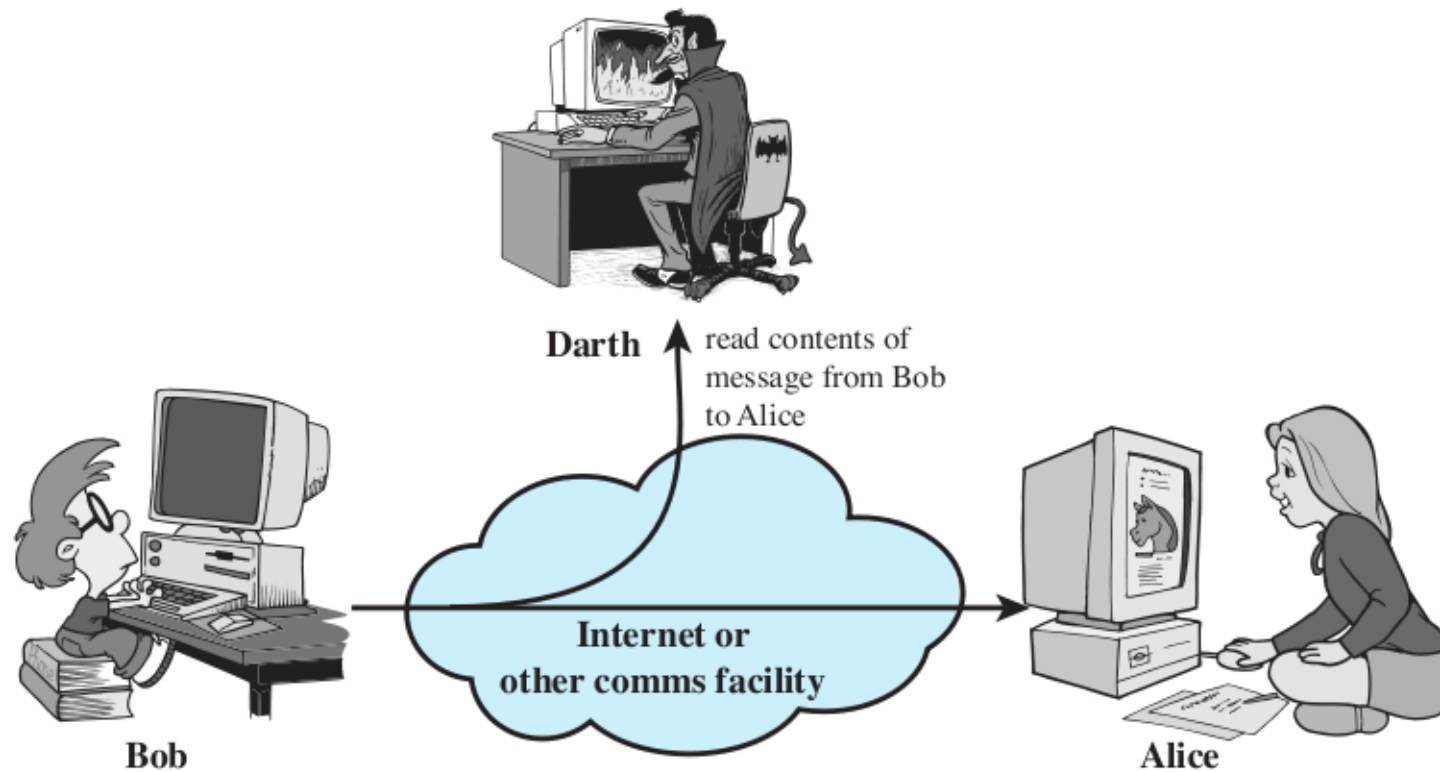
Passive and Active Attacks

Passive Attack

- Attempts to learn or make use of information from the system but does not affect system resources

- Eavesdropping on, or monitoring of, transmissions

- Goal of attacker is to obtain information that is being transmitted

- Two types:

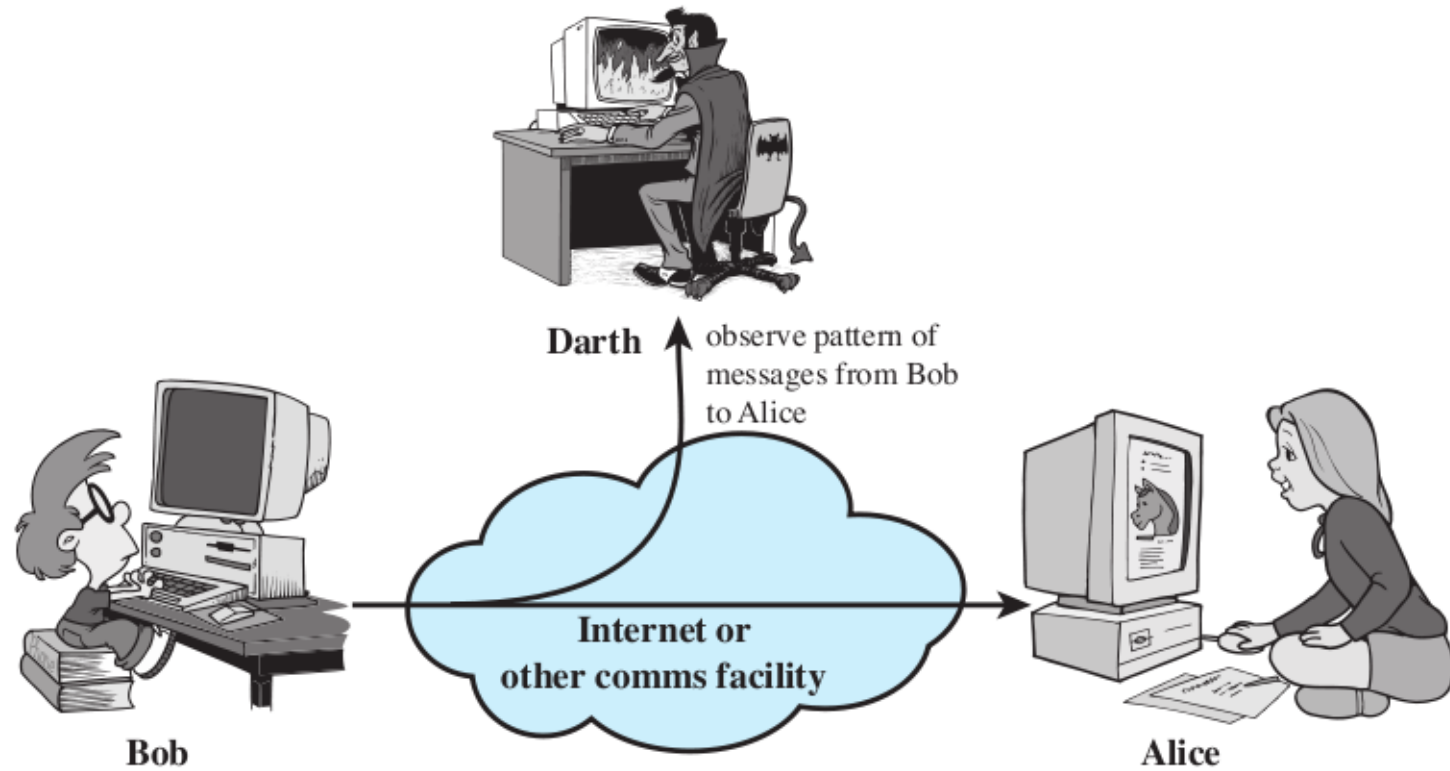 - Release of message contents

  - Traffic analysis

Active Attack

- Attempts to alter system resources or affect their operation

- Involve some modification of the data stream or the creation of a false stream

- Four categories:

  - Replay

  - Masquerade

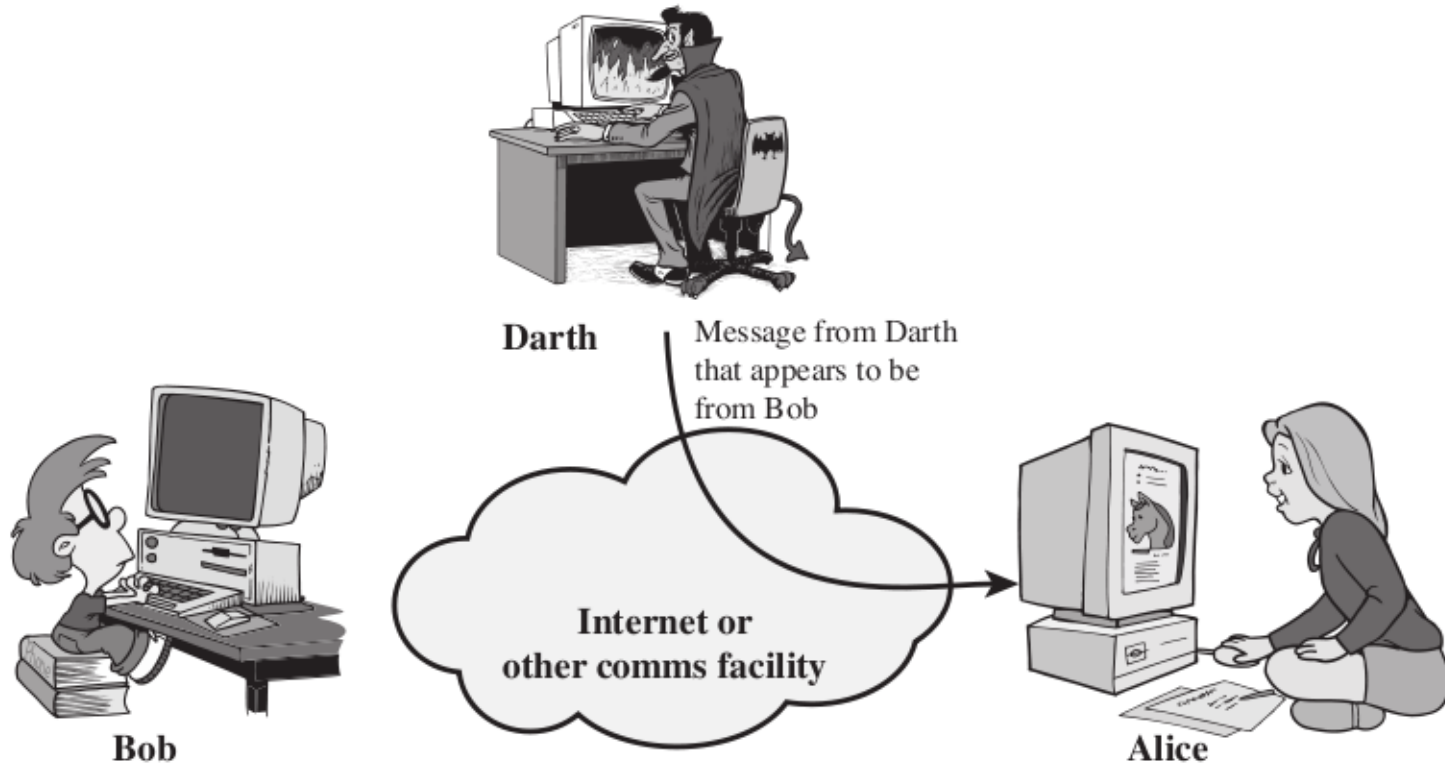 - Modification of messages

  - Denial of service
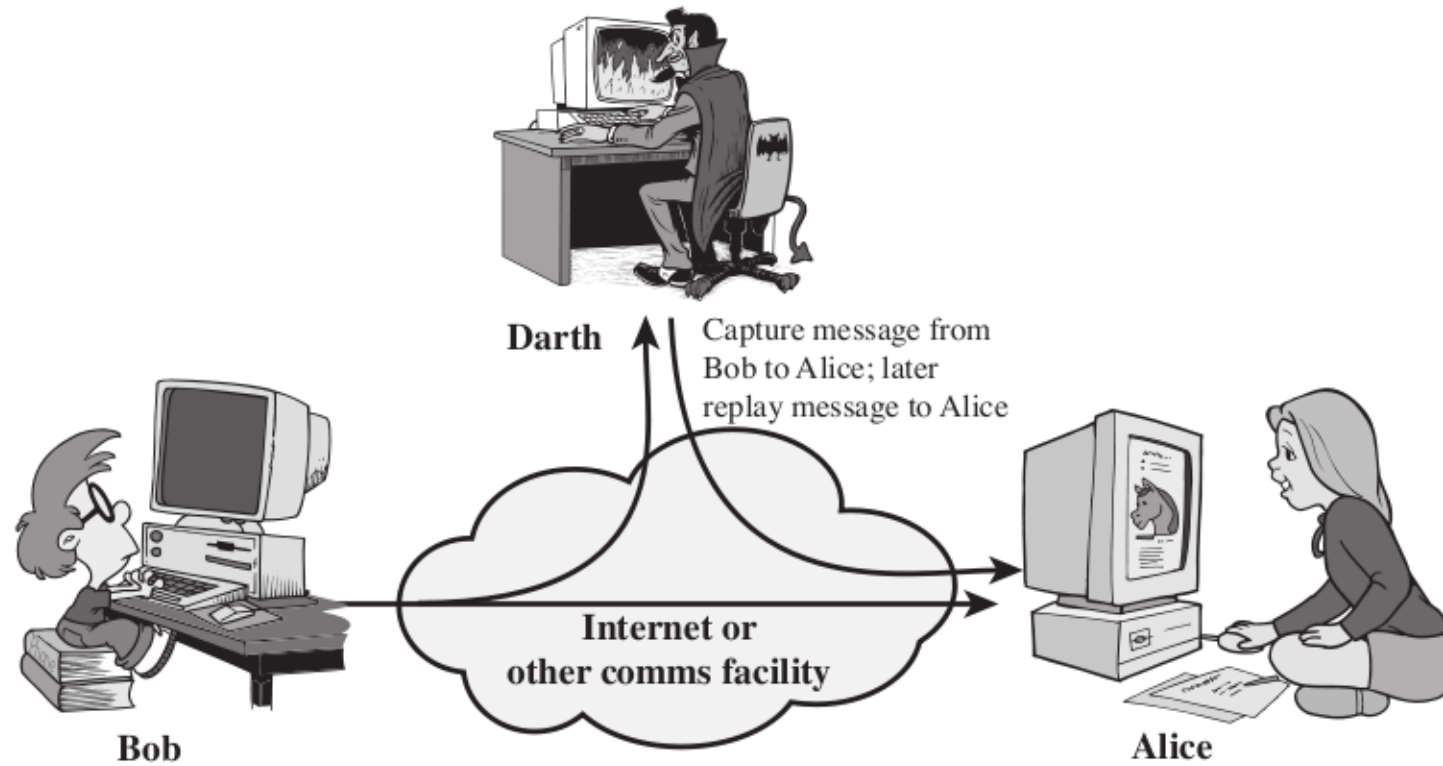
Release Message Contents

Traffic Analysis
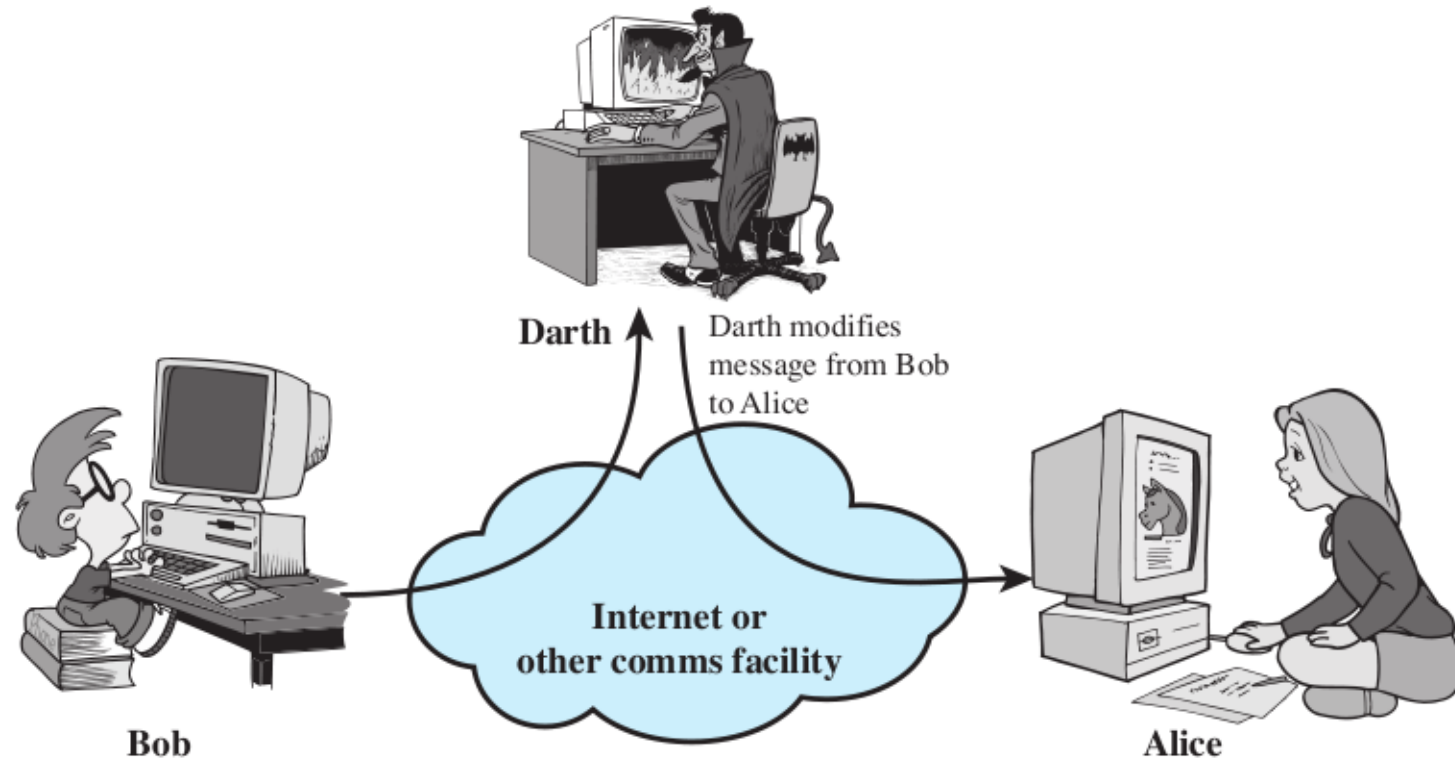

Darth — observe pattern of messages from Bob to Alice

Bob

Internet or other comms facility

Alice

Masquerade Attack

Darth

Message from Darth that appears to be from Bob

Internet or other comms facility

Bob

Alice

Replay Attack

Modification Attack

Darth

Darth modifies message from Bob to Alice

Internet or other comms facility

Bob

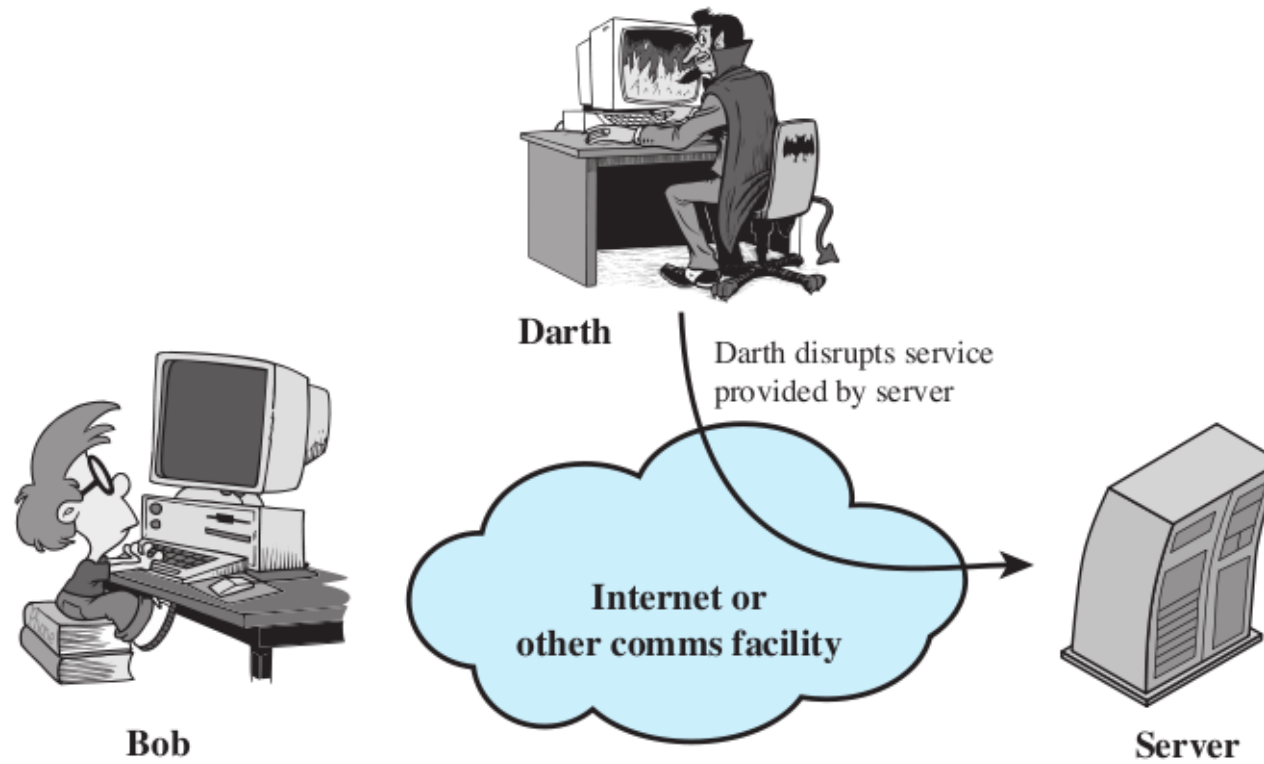Alice

Denial of Service Attack

Types of Attacks

Passive attacks: are in the nature of eavesdropping on, or monitoring of, transmissions. The goal of the attacker is to obtain information that is being transmitted.
Two types of passive attacks are:
  a) release of message contents
  b) traffic analysis.

Active attacks: involve some modification of the data stream or the creation of a false stream.
Fours types of active attacks are:
a) Replay attack
b) Masquerade attack
c) Modification of messages attack
d) Denial of service.