Ethernet

- Unslotted 1-persistent CSMA/CD
- Procedure
  - Frame_to_transmit and idle
    - wait *interframe_gap*
    - transmit
  - Listen to channel and if collision
    - stop sending
    - send *jam* signal
    - schedule retransmission

Ethernet

- Schedule retansmission

(the binary exponential backoff algorithm)

  – N= N+1 where N = number of retransmission attempts

  – If N > *attempt limit* then trash the PDU

else

  – calculate the backoff time
    - k = Min[N, *backoff_limit*]
    - R ~ Uniform [0, 2^k]
    - retransmit at time tnow + R**slot_time*

Ethernet

- Parameters
  - Slot time = 512 bit times
  - Interframe gap = 9.6us
  - Attempt limit = 16
  - Backoff limit = 10
  - Jam time = 32 bits/rate
  - Maximum frame size = 8*(1518) bits
  - Minimum frame size = 8*(64) bits

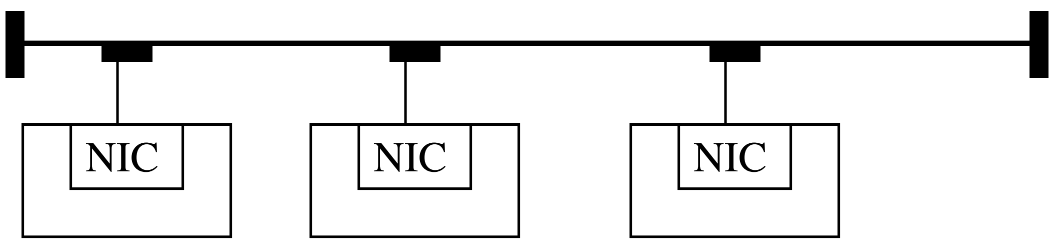
Ethernet

Packet structure

Preamble	7
Start Frame Del.	1
Destination Address	2 or 6
Source Address	2 or 6
Length	2
Data	
Pad	
Frame Check	4

Ethernet

Typical Configurations



Bus