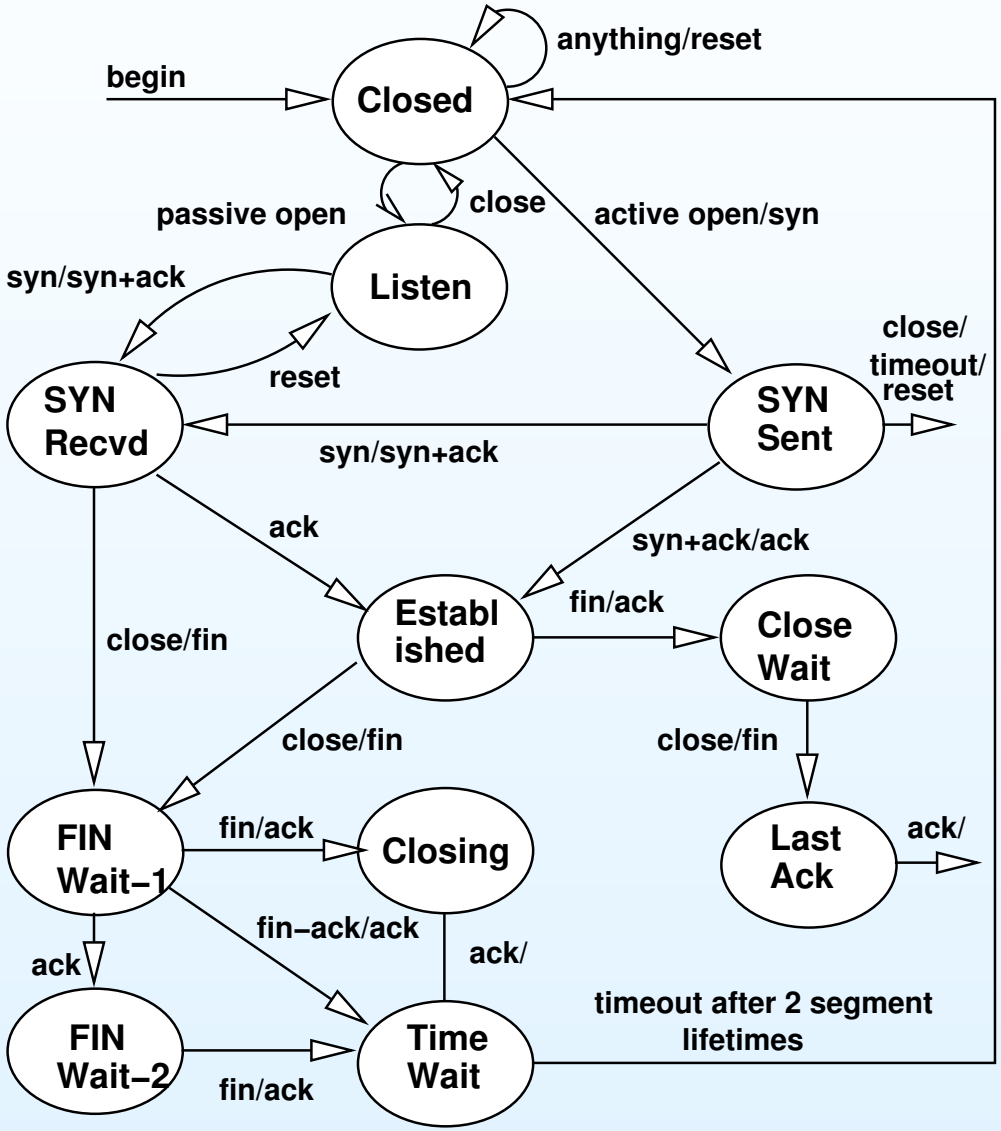
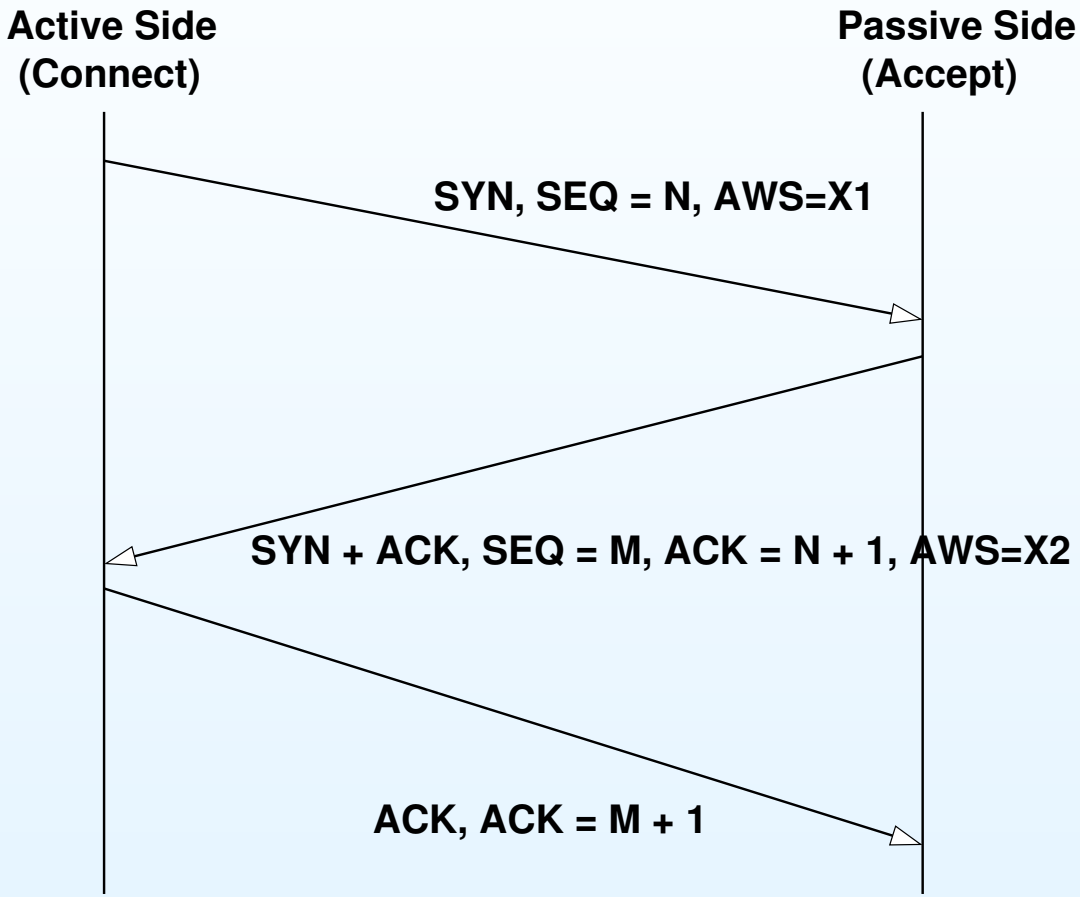
TCP Finite State Machine



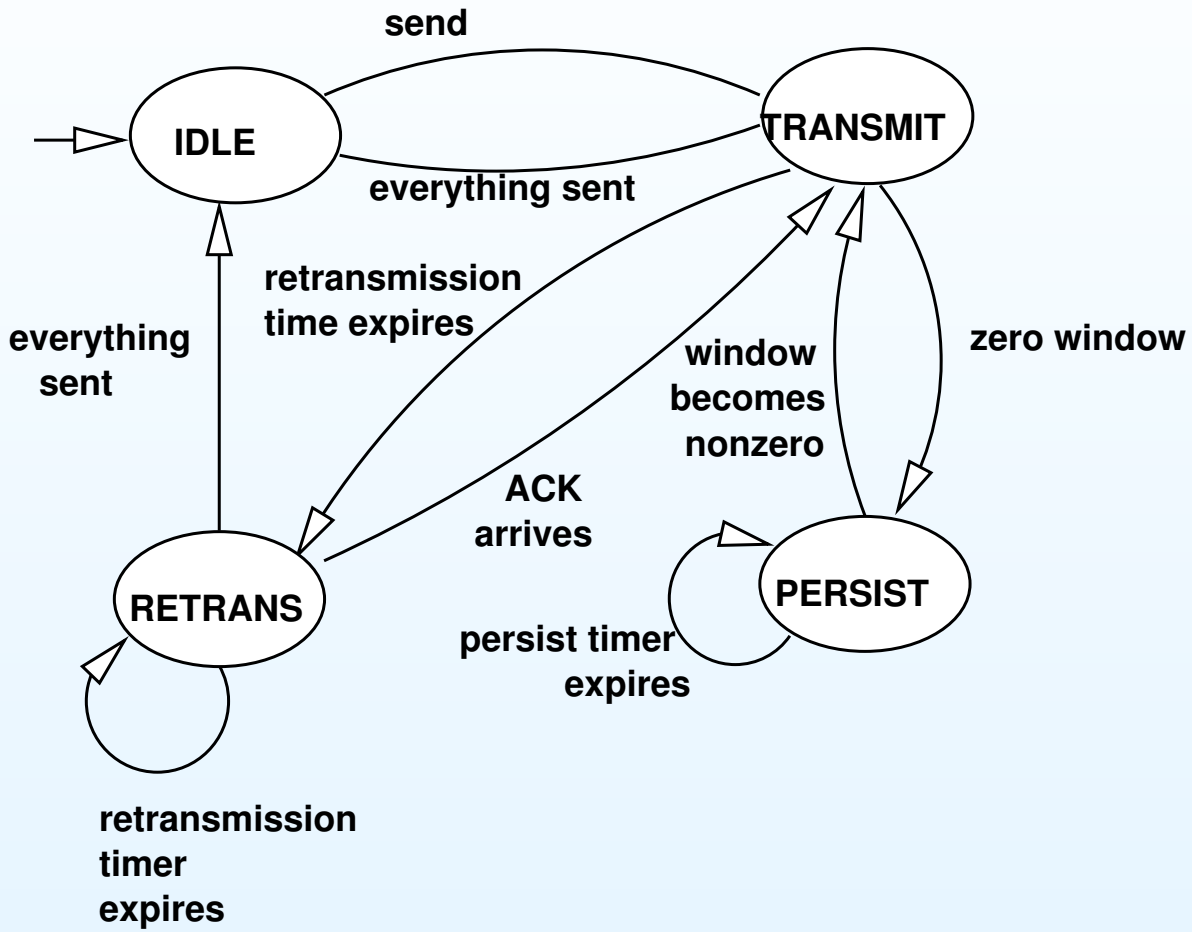
Key: receive/send

Three-way Handshake



TCP Three–way Handshake Connect

Sender Finite State Machine



TCP Sender Algorithm

```
switch (event)
  case Send executed:
    if (WS + L > AWS) Block ();
    else
      buffer message
      Next Byte = Next Byte + L
      if (unsent bytes > MSS) || (Push specified)
        SendSegment ()
        LBS += Segment Size
        WS += Segment Size
  case Inactivity Timer expires:
    SendSegment ()
    LBS += Segment Size
    WS += Segment Size
  case ACK received:
    if (ACK outside Window) drop
    LAR = ACK - 1; Stop timers, release block
```

TCP Receiver Algorithm

```
switch (event)
  case Received executed:
    Send N bytes up
    NB += N
  case Packet received:
    if (SEQ + L > AWS)
      Drop
    else
       buffer message at SEQ
       if (no holes in buffer)
         NBE = SEQ + L + 1
       Send NBE as ACK.
  case Inactivity Timer Expires:
    Send NBE as ACK.
```