哈爾濱工業大學
HARBIN INSTITUTE OF TECHNOLOGY
立足航天，服务国防，面向国民经济主战场

计算机网络之探赜索隐

主讲人：聂兰顺

本讲主题

TCP连接管理

TCP连接管理

- TCP sender和receiver在传输数据前需要建立连接
- 初始化TCP变量
  - Seq. #
  - Buffer和流量控制信息
- Client：连接发起者

```
Socket clientSocket = new
Socket("hostname","port number");
```

- Server: 等待客户连接请求

```
Socket connectionSocket =
welcomeSocket.accept();
```

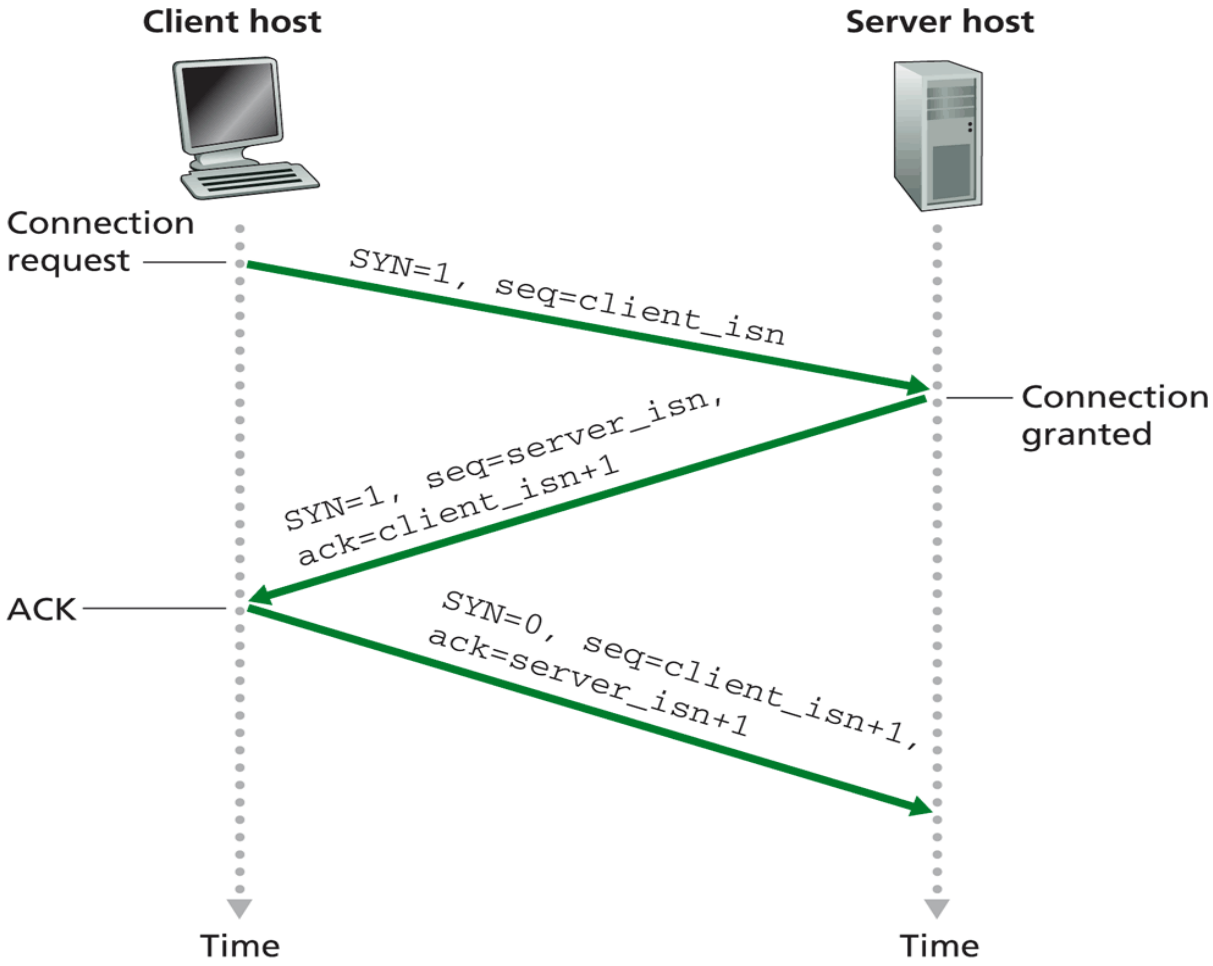
Three way handshake:

Step 1: client host sends TCP SYN segment to server
- specifies initial seq #
- no data

Step 2: server host receives SYN, replies with SYNACK segment
- server allocates buffers
- specifies server initial seq. #

Step 3: client receives SYNACK, replies with ACK segment, which may contain data

TCP连接管理：建立


Client host
Server host
Connection request
SYN=1, seq=client_isn
Connection granted
SYN=1, seq=server_isn, ack=client_isn+1
ACK
SYN=0, seq=client_isn+1, ack=server_isn+1
Time
Time

TCP连接管理：关闭

Closing a connection:

client closes socket: `clientSocket.close();`

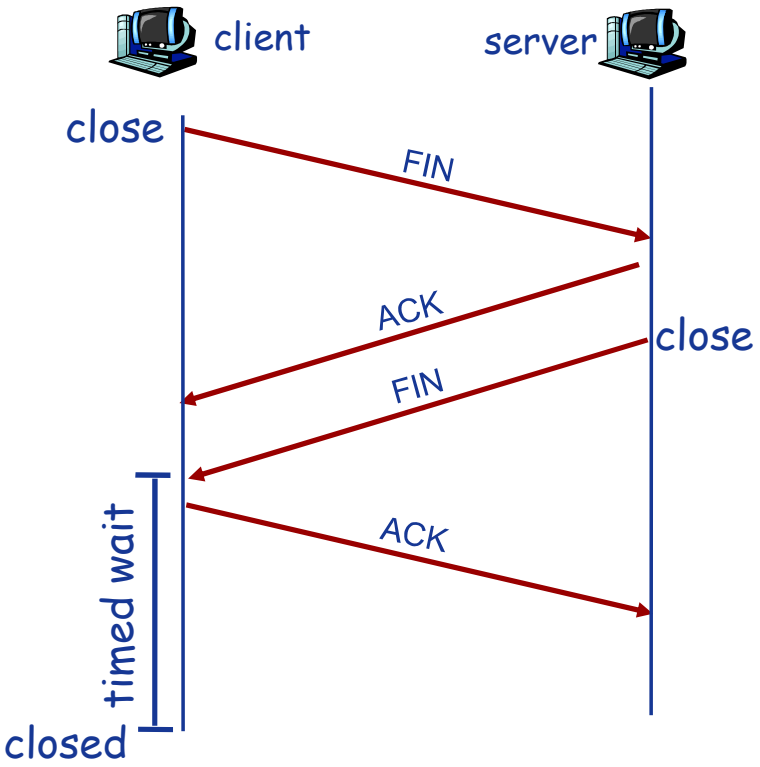
Step 1: client向server发送TCP FIN 控制segment

Step 2: server 收到FIN, 回复ACK. 关闭连接, 发送FIN.

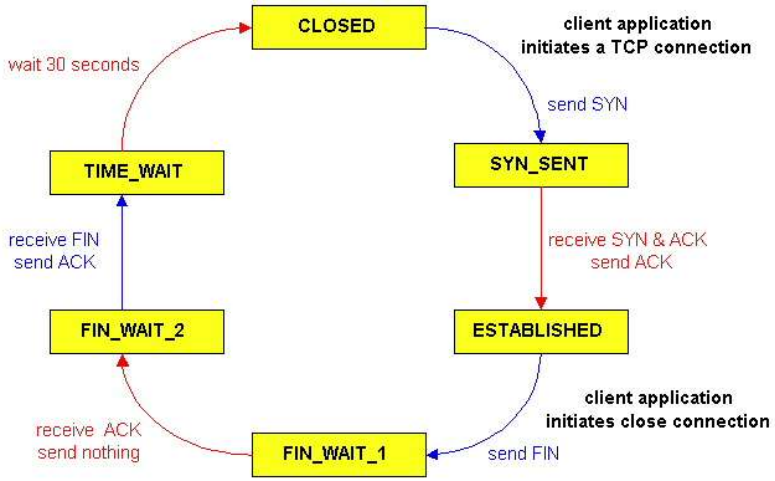
Step 3: client 收到FIN, 回复ACK.

- 进入“等待” –如果收到FIN，会重新发送ACK

Step 4: server收到ACK. 连接关闭.

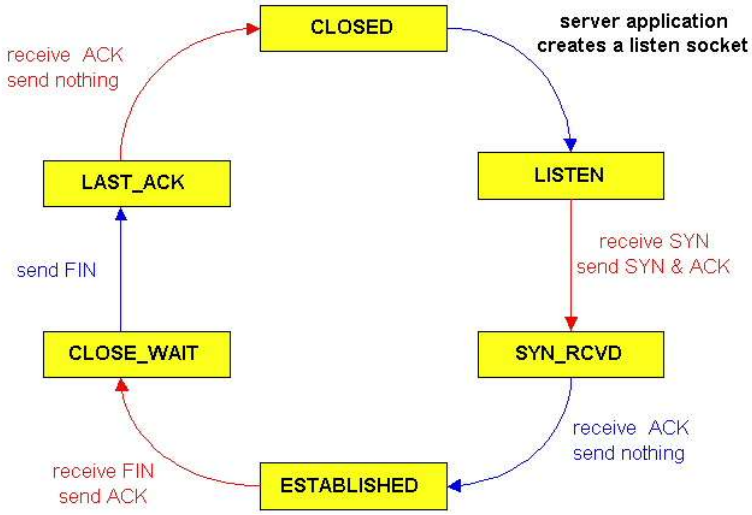


TCP连接管理



TCP client lifecycle

TCP server lifecycle



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谢 谢！