

7. DNS → IP:  $\sum_{i=1}^n RTT_i$   
 然后一次发送，一次接收  
 总时间:  $RTT_0 + \sum_{i=1}^n RTT_i$

22. 客户 - 服务器:  $T = \max\{NF/us, F/di\}$

T/N U	10	100	1000
300 Kbps	10240	68266.7	682666.7
700 Kbps	10240	68266.7	682666.7
2 Mbps	10240	68266.7	682666.7

8.

- $\sum_{i=1}^n RTT_i + 2RTT_0 + 2 \times 8RTT_0$   
 $= 18RTT_0 + \sum_{i=1}^n RTT_i$
- $\sum_{i=1}^n RTT_i + 2RTT_0 + 2 \times 2RTT_0$   
 $= 6RTT_0 + \sum_{i=1}^n RTT_i$
- 串行:  $\sum_{i=1}^n RTT_i + 2RTT_0 + 8RTT_0$   
 $\downarrow$   
 $= \sum_{i=1}^n RTT_i + 10RTT_0$   
 并行:  $\sum_{i=1}^n RTT_i + 2RTT_0 + RTT_0$   
 $= \sum_{i=1}^n RTT_i + 3RTT_0$

P2P:  $T = \max\{F/us, F/di, NF/(us + \sum_{i=1}^n vi)\}$

T/N U	10	100	1000
300 Kbps	10240	34538.7	63412
700 Kbps	10240	20821.3	28700
2 Mbps	10240	10240	10240

25.  $n$  个节点, 有  $\frac{n(n-1)}{2}$  条边

27. a. 混合 所以要  $n$  个      b. 要  $2n$  个