Titile: throughput 解决问题

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1. instantaneous throughput : the rate at which Host B is receiving the file.

R(rev) = the rate at which Host B is receiving the file

单位时间内，数据从link流入Host B的速度(bit/sec)

2. (原文)If the file consists of F bits and the transfer takes T seconds for Host B to receive all F bits, then the average throughput of the file transfer is F/T bits/sec

计算 the average throughput 的意义？

3. (1) simple two link network

条件：

rsc: server,client,two links, a router

data: a file

R: R(s->ro) = Rs, R(ro->c) = Rc (两者保持不变，即没有突发传输)

other: the only bits being sent in the entire network are those from the server to the client

结果

throunghput = min{Rc, Rs}

(2) N links network

条件：

rsc: server,client,N links,

data: a file

R: R1,R2...RN

other: the only bits being sent in the entire network are those from the server to the client

结果

throunghput = min{R1, R2, R3...RN}

throughput小结：

1、throughput分为 instantaneous throughput 和 average throughput。我们关心的是instantaneous throughput。

2、 （1）没有其他传输介入（a server to a client）时，instantaneous throughput 由传输路径上速度最小的link决定

（2）如果有其他传输介入(n server to n client)时，instantaneous throughput 不仅受传输路径上速度最小的link影响，还受介入传输的影响。

具体：

设R(core)为每个link（server or client）从核心网络中均分的速度, Rs服务端link speed，Rc客户端link speed

R(core) > (Rs, Rc), instantaneous throughput由Rs,Rc中的较小者决定

R(core) < (Rs, Rc), instantaneous throughput被R(core)限制

ps:实际生活中的情况是核心网络的速度远远大于access network的接入速度，so, 现实中的瓶颈在于access network