

THE MECHANISM OF CONGESTION BETWEEN THE SERVER AND CLIENTS IN A LOCAL AREA NETWORK SOLUTIONS

Luaay Abdulwahed Shihab

Branch of Basic Medical Science Nursing College, Basrah University, 00964 Iraq

ABSTRACT: *Cause congestion in the server and so we designed a program that uses dequeues program which avoids congestion , I have been using the premise of first come first served and the philosophy of this method depends on who arrives first of and network layer and the transport layer have we got to where good results have been easing broad measure of congestion the operations is to enter first into one router and be in the data transfer integer associated with each process and if the number is high, the priority is low and vice versa We have also used in We searched the we are in the College of Nursing at especially computer lab use over 45 computer and cause stumbled Internet line.*

KEYWORD: LAN,T(n),t(n+1),t(n+1),w, FCFS

INTRODUCTION

There are a lot of Internet users and even in homes whenever abounded use of the Internet and communications quickly abounded problems and there are many facts and multimedia at this time such as direct broadcast television to watch live football, In contrast, a preemptive scheduling algorithm picks a process and lets it run for a maximum of some fixed time.

A network has a certain carrying capacity, denoted by the maximum number of packets that it can hold at any point in time , when the limit is approached , considerable delays are experienced in packet delivery , and the network is said to be congested congestion can occur in all types of network . un controlled congestion can lead to outright network failure[1].

If it is still running at the end of the time interval, it is suspended and the scheduler picks another process to run (if one is available). Doing preemptive scheduling requires having a clock interrupt occur at the end of the time interval to give control of the CPU back to the scheduler. If no clock is available, non-preemptive scheduling is the only option[3].

Categories of Scheduling Algorithms movies and live interviews between the people and the games the Internet and talking to each other for long periods , causing congestion in the network any network traffic and can send the package to their destination on time or after the time and this is not good in any form by any one and therefore we propose to build a model to reduce the time to send packages to avoid network congestion on the Internet during the period of transfer data [4] We must clarify some questions.

One reason for congestion is to update the computer system automatically for more than a computer, causing weakness in the line of the Web as we know updated Windows system high package needed for the purpose of modernization up to 9 gigabyte while if I worked 10 computers at the same time update may need to be 90 gigabyte causing confusion and congestion in Internet line

The other reasons, including the presence of viruses exist in may be Computing Systems stumbled line Internet kinds of problems are caused by excessive broadcast traffic on a network segment, Consumes network bandwidth, Requires complex address schemes, Interrupts other host functions [10].

How fast – what data rate can be achieved

How far – how far can wireless LAN units be placed a parts and still get the maximum data rate

How many – how many users can exist without slowing the data rate.

RELATED WORK

Deque is known as a linear list of the added process and deletions are in each of the end so it is called by the line ends with a duo and we can imagine the queue duo is deque identical to that reduces congestion process by a very high I have used UDP protocol and it is characterized by very high speed compared to the TCP protocol and because it ensure that the data of the addressee and does not need to report on the status of the message and protocols that support kills me DNS, DHCP, UDP can form the datagram and pass it to the network layer to be addressed and sent on the network.

Remember, after a client has chosen the source and destination ports, the same pair of ports is used in the header of all datagrams used in the transaction. For the data returning to the client from the server, the source and destination port numbers in the datagram header are reversed. OSI Transport Layer [10], .. The IP header contains the address information and some other bits that identify the PDU as a network layer PDU. This process of adding information is called encapsulation OSI Network Layer 137) [10]. When an OSI Layer 4 PDU has been encapsulated at the network layer, it is referred to as a packet. the network layer of the originating host until it arrives at the network layer of the destination host.

The process of encapsulating data by layer enables the services at the different layers to develop and scale without affecting other layers. This means that transport layer segments can be readily packaged by existing network layer protocols

Traffic Optimization

Bandwidth is measured as the amount of bits transmitted over a time interval this means that over time, bandwidth available on any link approaches infinity unfortunately, for any given period of time [5], the bandwidth provided by any given network connection is not infinite you can always download or upload as much traffic as you like you need only wait long enough, bandwidth must be managed and prioritized much like any other limited resource [7].

Congestion Management At a high level, a congestion management solution has two functional components:

- A mechanism to alleviate the impact of congestion; the actual ‘management’
 - A mechanism to switch on the alleviation mechanism; the detection ‘trigger’
- A complete congestion management solution requires both these components, but this simple characterization betrays enormous complexity; available solutions vary enormously in effectiveness and complexity [9]

* The network layer protocol concerned the interface between a host and the network, and the interface between two hosts across the network, and routing of packet across the network including the allocation of a route and handling of congestion. And transport layer protocol concerned establishment and termination of host-to-host connection, efficient and cost-effective delivery of data across the network from one host to another, flow control between hosts [8].

Theoretical Consideration

Congestion Detection It seems almost too obvious to state that congestion management should only be applied when there is actual congestion on the network (suggesting a requirement for real-time detection), particularly as it relates to the best practice of being narrowly tailored. However, it bears detailed examination because there are many solutions available that actually apply traffic management for the supposed purpose of congestion management when there is no congestion [9]

When the number of people throwing contact together with other people, then are confused between the network is called the critical situation of congestion and to avoid this situation we propose a model, the data will be transferred in the network in the form of packages when the client will send the request to the server in the form of packages from start to finish by the two devices are arranged in a router dequeu to dequeu work on (FIFO) first input first output and the (FCFS) scheduler simply executes processes to completion in the order they are submitted. we will implement (FCFS) using a dequeu data structure.[2] These packets will be analyzed by EPA (Early Packet Analysis) Module. EPA has four parameters

- (a)- $t(n+1)$ next time operation
- (b)- $t(n)$ time current operation
- (c)- $T(n)$ average time of previous operation
- (d) – w waiting time

Scheduling Algorithm (FCFS) Scheduling

Process	Arrival Time	Burst time
P1	0	0
P2	1	3
P3	2	7
P4	3	10

Waiting time for $P1=0$, $P2=1$, $P3=2$, $P4=3$

Average waiting time $= (0+3+7+10)/4=5$

P1	P2	P3	P4	
0	3	7	10	20

Implement algorithm of the sending packets:

Function send _packets ()

While (system time () > t next) ^ (length(q)> 0)

P==(dequeue(q)

Transmit – packet (p)

T ==system – time()

T== t + s /

End while

If length (q) > 0 than

Callback(t next _ send – packcts()

End if

End function

Method *dequeue* () in Java

public Object dequeue () throws Queue Empty Exception {

Object obj;

if (size == 0)

throw new Queue Empty Exception("Queue is empty.");

obj = head.get Element();

head = head.get Next();

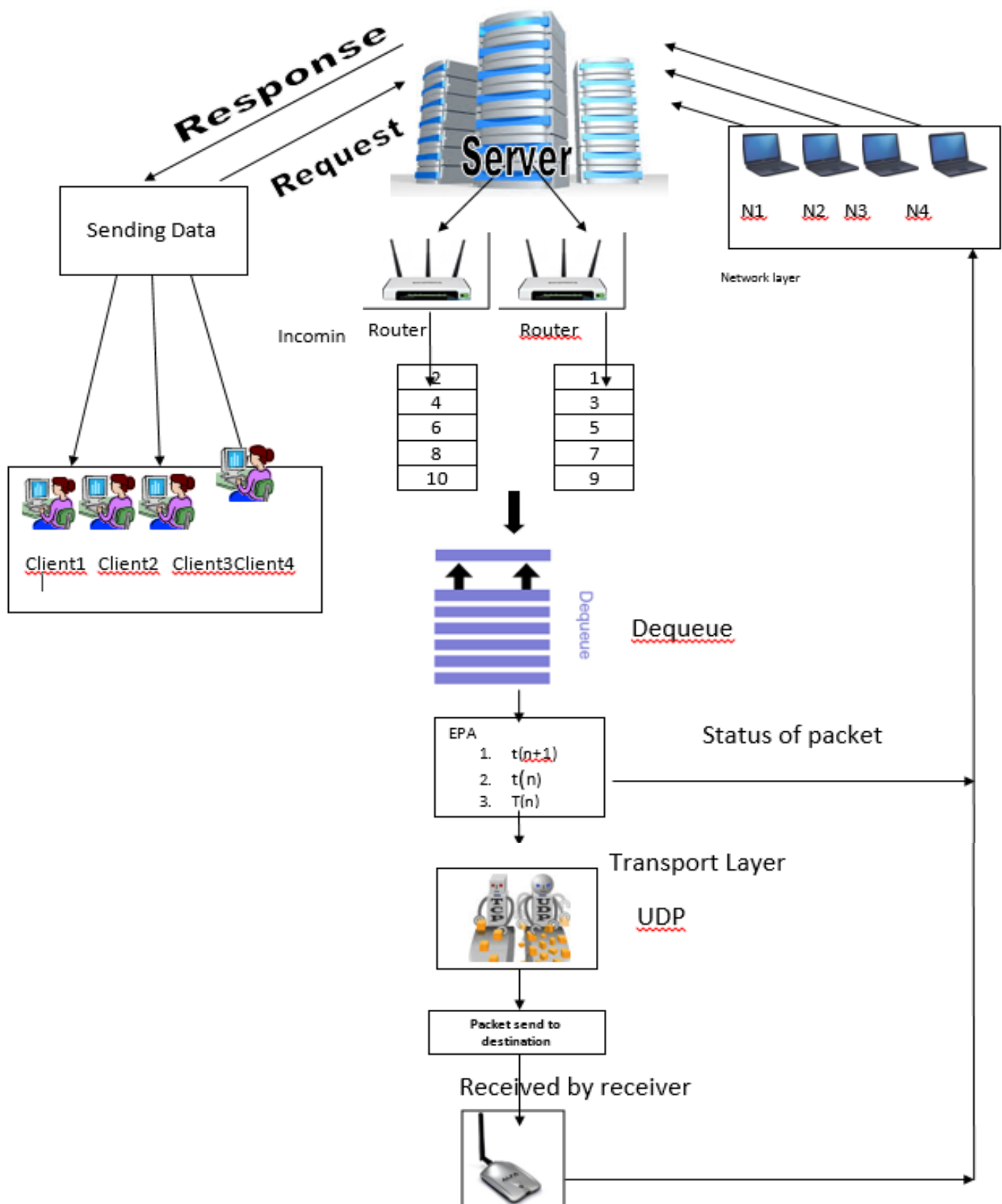
size—;

if (size == 0)

tail = null; // the queue is now empty

return obj;

}



Pratically induction

when the broadcast signal from the satellite (internet system) to the server via cable UTP and user requests data from the server to send the data pass through the router and use the dequeue to frighten congestion and the layer that provides data routing paths for network communication. Data is transferred in the form of packets via logical network paths in an ordered format controlled by the network layer [8].

Logical connection setup, data forwarding, routing and delivery error reporting are the network layer's primary responsibilities.

Techopedia explains Network Layer And then up to the data if the package is hydrolyzed to Internet users and pass to the transport layer protocol by

Transport layer ensures the reliable arrival of messages and provides error checking mechanisms and data flow controls. The Transport layer provides services for both "connection-mode" transmissions and for "connectionless-mode" transmissions. For connection-mode transmissions, a transmission may be sent or arrive in the form of packets that need to be reconstructed into a complete message at the other end

CONCLUSION AND FUTURE WORK

In this paper the problem raised in today time in network congestion when accessing in the internet, so that user can easily accessing high speed of the internet

So we suggest that the update for Windows computers manually as well as other programs means one after the other, so does not cause any disruption or congestion in the network and also clean the computer systems of viruses will continually landed the Internet makes it extremely fast

REFERENCE

- [1]. *Communication network (sharam hekmat 2005)* .
- [2]. Arrays, Lists, Stacks, Queues, Chionh Eng Wee, Computer Science Department,(May 22, 2004).
- [3]. MODERN OPERATING SYSTEMS THIRD EDITION (2009 Pearson Educatio)
- [4]. Concept of network second edition (2006) (IHT)
- [5]. Wireless networking in the developing world (first edition January 2006 hacker friendly)
- [6]. Wireless networking in the developing world (second edition January 2007 hacker friendly)
- [7]. Operating system concept seven edition ABRAHAM SILBERSCHATZ, PETER BAER GALVIN, GREG GAGNE (2005 John Wiley)
- [8]. Computing and Communication Journal, Vol. 2, No. 2, pp. 27-36, 2007 .
- [9]. Network congestion management consideration and techniques (sandvan .A. 2005)
- [10]. Network Fundamentals, CCNA Exploration Companion Guide Mark A. Dye Rick McDonald Antoon W. Ruffi(Copyright© 2008 Cisco Systems)