Design and Implementation a Server Receiving Data in Both Forms TCP and UDP Through the Same Port and its Impact on the Network Performance

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ABSTRACT

Internet is the largest network that transfers a huge amount of information through the web and that requires data transfer between many network bottlenecks, devices and different hardware technologies. This data movement requires data transfer between many application, software's and operating systems. Many theses and researches were published in the topic of solving the issue of extreme data transfer rate; this issue causes time consuming problems. There are many technologies of transferring data across the internet; two of the major data transfer technologies are the User Datagram Protocol (UDP) and Transmission Control Protocol (TCP). Those different data transfer technologies through the internet cause most of the servers much of their time translating the data from one technology to another because most of the servers deal with one data transfer technology and therefore it has to translate all other technologies to the technology that it deals with. This research establishes a Server named TCP-UDP Server (TUS), to receive data from both UDP and TCP nodes through the same path without the need of changing the network entities or protocols connected to the server and to avoid the need for transferring the data from the (UDP) form to the (TCP) form and vise versa. All the operations performed by the server are accomplished without any hardware intrusion to avoid time consuming. The TUS server as many servers support the multithreading technology to serve a large amount of nodes at the same time. Each node has its own thread to deal with. This thread has its own life time determined by many facts, and that in turn decides to terminate the thread or not.

Keywords*:* Multithreading technology, TLT (Thread Life Time), NC (Node Connectivity), LAN (Local Area Network), TUS (TCP-UDP Server), UDP, TCP.