TOR: ANONYMOUS COMMUNICATION ENHANCES THE SECURITY IN THE NETWORKS

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ABSTRACT

Computer security has become one of the most important topics in everyday internet use. There are many domestic, industrial, and military applications where it may be necessary to hide information while working on the internet. The aim of the research in this thesis is to establish a connection between the client and the server machines in such a way that the identity of the client shall not be revealed to the server. This is accomplished by making use of the TOR software at the client side. The real aim in this thesis is to investigate and compare the time which is needed to arrive the data from a source to a destination by using TOR software package. The investigation is carried out both with and without using the TOR software. The TOR software establishes a connection which ensures that the communication channel is established to the server through a network of relays, so that the actual client IP address will be hidden and the connection will be anonymous. The results indicated that sending data by TOR requires more time than sending the data without using TOR. Although TOR gives high security and hides the details of the sender it slows down the data transmission.

Keywords: TOR, network, anonymous, privacy, browser, Wireshark.

ÖZET

Bilgisayar güvenliği günlük internet kullanımızda en önemli konulardan biri haline gelmiştir. Evimizde, endüstride ve askeri uygulamalarda internetde çalışırken bilgi saklama ihtiyacını duyduğumuz birçok konular bulunmaktadır. Bu tezin amacı client ve server bilgisayarları arasında veri alış verişi olurken verinin nerden geldiğini saklamaktır. Bu amaçla TOR yazılım programı kullanılmıştır. Tezde TOR kullanarak ve TOR kullanmayarak iki bilgisayar arasında veri alış verişi yapılmış ve IP adresinin gizlendiği gözlemlenmiştir. Ayrıca bilgi alış verişinde zamanlama üzerine istatiksel veriler toplanmıştır. Tezde varılan neticeye göre TOR veriyi saklamaktadır fakat buna karşılık veri alış veriş hızını düiürmektedir.

Anahtar kelimeler: TOR, ağ, gizlilik, internet sörf, Wireshark