

ABSTRACT

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Nowadays, distributions of large volumes of data over enterprise TCP/IP networks bring problems such as high network and server utilizations, long periods for completion, and greater sensitivity to flaws in network infrastructure. These problems can be reduced with the use of Peer-to-Peer networks (P2P). The aim of this work is to analyze the performance of the standard BitTorrent protocol in corporate networks and also perform the analysis after a change in the default behavior of the BitTorrent protocol. In this modification, the tracker identifies the peer IP address requesting the list of IP addresses of the swarm and sends only those belonging to the same LAN and to the original seeder, with the aim of reducing traffic on WAN links. In typical enterprise scenarios, the simulations showed that the change is able to reduce the average bandwidth consumption and the average time of downloads compared with standard BitTorrent, and give greater robustness to the distribution in case of failure of WAN links. The simulations also showed that in more complex network environments, with many clients, and where the bandwidth restriction on long distance links causes congestion and packet drops, the performance of standard BitTorrent protocol can be similar than a distribution in client-server architecture. In the latter case, the proposed change showed consistent results in improving distribution performance.

Keywords: BitTorrent; Enterprise Networks; Performance; P2P; Content distribution.