In this paper, performance analysis of the Wireless and Wired computer networks through simulation has been attempted using OPNET as simulating tool. For wired networks, the performance parameters like delay and throughput have been investigated with varying transmission links and load balancers. The load-balancing has been analyzed through
parameters like analysis of traffic sent and traffic received. While in wireless networks the metrics like delay, retransmission attempts and throughput have been estimated with varying physical characteristic and buffer size. From the obtained results, it is gathered that performance of the wired networks is good if high speed Ethernet links like 1000 Base X and server-load balancing policy are used whereas the performance of Wireless LAN can be improved by fine tuning and properly choosing the WLAN parameters. For the tested simulation scenarios the performance is observed to be better with wireless networks using infra-red type physical characteristics and higher buffer size (1024Kb).

Reference

- Puneet Rathod, Srinath Perur and Raghuraman Rangarajan, “Bridging the gap between the reality and simulations: An Ethernet case Study,” IEEE 9th International Conference on Information Technology (ICIT’06), 2006.
- Zhi Ren, Yong Huang, Qianbin Chen and Hongbin Li, “Modelling and Simulation of fading, Pathloss and shadowing in wireless networks,” in the Proceedings of ICCTA 2009, pp. 335-343, 2009

Index Terms

Computer Science
Computer Networks
### Key words

<table>
<thead>
<tr>
<th>OPNET</th>
<th>load-balancing</th>
<th>physical characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>buffer size</td>
</tr>
</tbody>
</table>