5.1 Conclusion:

In this research, simulation results werepresented and performance analysis of Quality of Service (QoS) based on three major queuing disciplines i.e. FIFO Queuing, Priority Queuing (PQ) and Weighted Fair Queuing (WFQ). The analysis was done in terms of delay and its variants for three different services; Voice over IP, Video Conferencing, and FTP based on packet identification.

The simulation results show that WFQ is a better discipline than PQ as lesser queuing delay and jitter were observed in WFQ for low priority services (FTP). These metrics were found having same values in both PQ and WFQ for high priority services (Voice and Video). Therefore, low priority services also get their weighted share of bandwidth in the network when QoS is applied with WFQ discipline in the presence of high priorityservices like interactive voice and live streaming video.

5.2 Recommendations:

This the main issues handled in this dissertation are totally depend on the today network characteristics, hereby the most recommended issues are need to handled based on advanced simulation tools or real network traffic so as to get meaningful results.

References:-

1. Babiarz, K. Chan, and F. Baker, "Configuration Guidelines for DiffServ Service Classes," RFC 4594, August2006.
2. Ajith Kumar V., and Sheela Ganesh Thorenoor, "Analysis of IP Network for different Quality of Service," in International Symposium On Computing, Communication, and Control (ISCCC), 2009.
3. Recommendations on queue management and congestion avoidance in the Internet. RFC2309, IETF, April, 1998.
4. MitkoGospodinov, "The effects of different queuingdisciplines over FTP, Video and VoIP Performance", inInternational Conference On Computer Systems andTechnologies - CompSysTech, 2004.
5. Heinanen, F. Baker, W. Weiss, and J. Wroclawski. Assured forwarding PHB group.RFC 2597, Jun 1999.
6. Davie, A. Charny, J. Bennett, K. Benson, J. L. Boudec, W. Courtney, S. Davari,V. Firoiu, and D. Stiliadis, 1999 .An expedited forwarding PHB (Per-Hop Behavior). RFC 3246, Mar 2002.
7. Terry Jack, ccie .CCNP Building Cisco multilayer switched network study guide. 2004, sybexInc Publishing house of electronics industry.
8. Babiarz, K. Chan, and F. Baker, "Configuration Guidelines for DiffServ Service Classes," RFC 4594, August 2006.
9. O.J.S. Parra, A.P. Rios, and G. Lopez Rubio, "Quality of Service over IPV6 and IPV4," in 7th International Conference On Wireless Communications, Networking and Mobile Computing (WiCOM), IEEE, September 2011.
10. Yadav, A.L. Vyavahare, P.D. ; Bansod, P.P ; Shri G.S. Inst. of Technol. & Sci., Indore, India ; "Performance evaluation of various WiMAX schedulers under triple play services". in IEEE Internet (AH-ICI), 2012 Third Asian Himalayas International Conference on.
11. Rahhal, A.M.Zuair, M. ; Iftikhar, M. ; Coll. of Comput. & Inf. Sci., King Saud Univ., Riyadh, Saudi Arabia ; "Performance evaluation of novel scheduling algorithms for G/M/1 queueing system with multiple classes of self-similar traffic input". In IEEE Electrical and Computer Engineering (CCECE), 2011 24th Canadian Conference on.

12. Zander, S.Armitage, G ; Centre for Adv. Internet Archit. (CAIA), Swinburne UniversityOf Technol., Melbourne, VIC, Australia ; ."Practical machine learning based multimedia traffic classification for distributed QoS management", in IEEE Local Computer Networks (LCN), 2011 IEEE 36th Conference on.
13. Sarraf, C.M., Ousta, F. Yusoff, M.Z. Kamel, N. Dept. of Comput. Eng., Holly Spirit Univ. of Kaslik (USEK), Kaslik, Lebanon ,"Mapping quality of service classes between UMTS, WiMAX and DiffServ/MPLS networks ", in IEEE Computer and Information Technology (WCCIT), 2013 World Congress on.
14. Rahul Malhotra, Vikas Gupta, and Dr. R.K. Bansal, "Simulation & Performance Analysis of Wired and Wireless Computer Networks", Global Journal of Computer Science and Technology, vol. XI, March 2011.
15. KeerthiPramukhJannu , RadhakrishnaDeekonda , "OPNET Simulation of Voice over MPLS with Considering Traffic Engineering " Thesis Department of Electrical Engineering , Blekinge Institute of Technology , Sweden ,June 2010.
16. James f .kurose .computer networking Atop –Down Apprach featuring the Internet. 2003 .by Pearson education, Inc.
17. ShammiAkhtar, Emdad Ahmed, AlokekumarSaha, and KaziShamsulArefin, University of Asia Pacific (UAP), Dhaka, Bangladesh, "Performance Analysis of Integrated Service over Differentiated Service for Next Generation Internet",Copyright 2010 JCIT.
18. Jiri Hosek, Karol Molnar, Lukas Rucka, University of Technology Purkynova 118, 612 00 Brno CZECH REPUBLIC, "DiffServ Extension Allowing User Applications to Effect QoS Control" , Proceedings of the 13th WSEAS International Conference on COMMUNICATIONS 2011.
19. Dr.Hussein Mohammed, Dr.Adnan Hussein Ali, HawraaJassimMohammed, Electrical & Electronics Techniques College – Baghdad, "The Affects of Different Queuing Algorithms within the Router on QoS VoIP application Using OPNET",

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