International Journal of Engineering Research-Online
A Peer Reviewed International Journal
Articles available online http://www.ijoer.in

Vol.3., Issue.2, 2015

RESEARCH ARTICLE

ISSN: 2321-7758

APPRAISAL OF DIGITAL VOICE ON SIMULATORS

ROMIKA YADAV[1], NAGINA YADAV[2], MONIKA[3]

[1]Research Scholar, Indira Gandhi University, Meerpur, Rewari, India
[2]Faculty, Indira Gandhi University, Meerpur, Rewari, India
[3]Faculty, Indira Gandhi University, Meerpur, Rewari, India

Article Received: 28/02/2015 | Article Revised on:07/03/2015 | Article Accepted on:10/03/2015

ABSTRACT

Network simulation plays a vital role in the field of networking. In this paper, we proposed appraisal of digital voice on simulators. There are N numbers of network simulators *viz.*NS-2, NS-3, OMNeT++, REAL, QualNet, SWAN, Jist and GloMoSim etc. Selecting a best simulator for the research work is the crucial task. This paper focuses on Matlab and Scilab simulators. Digital voice can be implemented on Scilab and Matlab simulations. Scilab is open source software and Matlab is proprietary based software.

Keyword-simulators, NS-2, NS-3, NETSIM, Scilab, Matlab

INTRODUCTION

Wireless technology growing day by day and enhancements are increases rapidly. A wireless network requires reliable protocols due to the growth of the internet. Selecting the best simulator is the research task of the researchers in the real time environment. Simulation often used to help the researchers to understand the performance evaluation of the network. Although analytical modeling is not efficiently used due to they are time consuming and require more human resource and lot of hardware. In comparison to simulators they provide efficient results to evaluate the efficiency performance of networks in real time environment. In the current decade the network simulators plays a vital role in the research work to evaluate the performance of the network. Due to the growth of internet the voice communication is increased day by day. So it is important to increase the Quality of Service (QoS) of voice in the wireless network. Voice is real data i.e. time sensitive in nature. In wireless network the growth of voice comparatively increased, so it causes a problem with delay, noise, echo, jitter and loss of packets. Voice is the most important medium of communication, so that everyone can understand and evaluating the voice quality as per their needs. Internet applications are increased, so voice communication also gone through rapid used in the computer networks.

This paper organized in different sections as follows: section 2 describes related work of the different network simulators. Section 3 describes the problem definition of the research work that is carried out in the complete research paper. Section 4 describes details of simulators that are used in evaluation the appraisal of digital voice and advantage of these network simulators. Finally section 5 comprises of conclusion and future work on the efficiency of these networks.

II. RELATED WORK

Harsh sudani and prabir bhattaacharya gives the sensor network simulators to test the applications

and protocols. Sensor networks simulator available for the particular application. Sensor networks caused with many problems like limited hardware, power constraints, decreased reliability and conventional nodes that having few problems of network problems. Choosing the best simulator for the particular application and also providing advantage and disadvantage of network simulators [1]. Karl Michael gives comparison of the architecture of network simulators TOSSIM and NS-2. In that mobile communication increased day by day, where information is accessed i.e. more important. Mobile networks required reliable protocols due to the growth of the internet. NS-2 and TOSSIM provides different aspects of network simulators and their architecture. NS-2 simulator provides network nodes at the packet level and TOSSIM simulators provides simulate the sensor network at the bit level [2]. Elias and Klaus provide comparison of simulation networks on the basis of memory usage and run time performance. They conduct a performance comparison on the five different simulators viz. NS-2, NS-3, OMNeT++, SimPY, JiST/SWANS. They used the concept of network topology that sending node forwards its data to the neighbor's node. If neighbor's nodes delay to forward it, thus it floods the entire network [3]. Rachedi and salhi provides comparatively study of 8022.11 test bed in outdoor and indoor environment. Test beds are real world tests with the some parameters of outdoor and indoor environment. They provide relevance of three different simulators viz. NS-2, QualNet and OPNET. Physical layer consider parameters using the propagation models to showing the relevance of the simulators [4]. Khan and Othman provide performance comparison of network simulators for wireless networks are used to evaluate the efficiency of the new concepts and theories. They provide the performance comparisons of network simulators viz. NS-2, NS-3, OMNeT++ and GloMoSim because they are well known and open source network simulators. The performance measured on the basis memory usage, computational time and CPU utilization parameters. Simulation plays an important role in the field of networking [5].

III. PROBLEM DEFINITION

The main aim of this paper is to provide a speculative study of the various simulators that are currently used in the networking. Selecting a best simulator is one of the crucial tasks for the researchers. Current applications are time sensitive, implementing the time critical application on the network simulators. Evaluating the voice data packets are delivered on the appropriate destination in a less time.

IV. ISSUES FOR TIME SENSITIVE APPLICATIONS

This section provides speculative concepts of various simulator tools those are high popularity of research work to validate the network concepts. Many simulators are available in networks to validate the efficiency of a voice data, basically to improving Quality of Service (QoS) of voice. NS-2, NS-3 and NETSIM are the simulators, where we can compare the efficiency appraisal of the voice data. These simulators are widely used and most popular in the research community. On the basis of these simulators the new concepts and theories are validated by the researchers.

NS-2:- NS-2 is an open source and discrete event network simulator. NS-2 simulator support both wired and wireless networks. NS-2 simulator provides a concept of graphical view of the networking. NS-2 provides a working environment of sensitive data (i.e. voice) to improve its quality. Advantage of NS-2 is that it can be used for the parallel and distributive application.

NS-3:-NS-3 is an open source discrete event network simulator. NS-3 simulator is under license GNU GPLv2 and frees to use. NS-3 simulator provides a realistic environment to use the source code of the simulating environment. NS-3 simulator also provides a parallel environment and some advanced feature. Advantage of NS-3 is that it provides traffic generator models and analyzes the results using the protocols such as TCP/IP.

NETSIM:-NETSIM simulator is discrete event network simulator. NETSIM is one of the most widely used simulators in the field of data communication and analysis of voice. The performance efficiency of voice can be analyzed by NETSIM simulator to improve its quality of service (QoS). NETSIM provides modeling and simulation in the object – oriented concept. Advantage of NETSIM simulator is that it is widely used in means of communication. NETSIM simulator provides fast and functional based simulator. Table 1 shows language used by the simulators.

Table 1

Network Simulators	Language Used
NS-2	C++, OTcl
NS-3	C++, Python
NETSIM	C
Matlab	Matlab
Scilab	Scilab

MATLAB: Matlab is widely used for the commercial, audio, video and for image processing. We are providing a digital voice appraisal using Matlab. Figure 1 shows digital voice appraisal on the Matlab simulator.

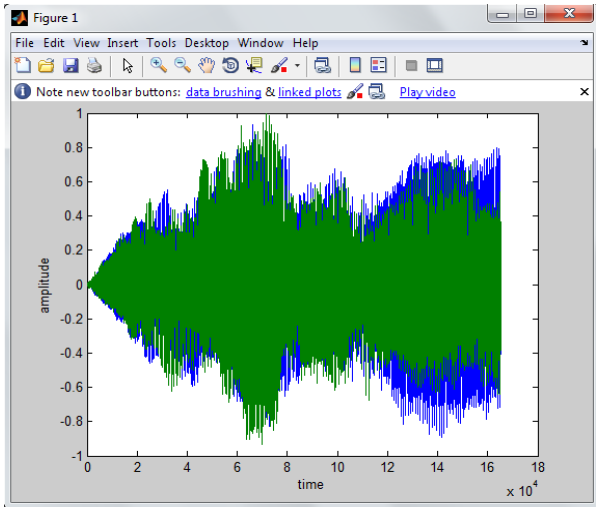

Figure 1 Matlab output on Digital Voice

SCILAB:-Scilab tool is open source software and it is an alternate for Matlab software. Scilab provides a digital voice processing using simple functions in the networking. Figure 2 shows a Scilab output on digital voice.

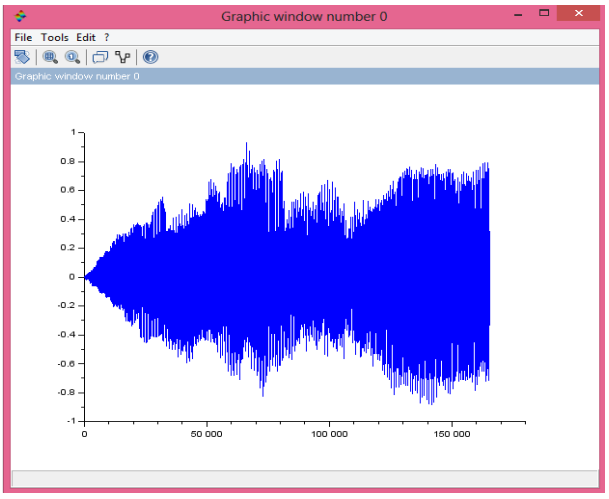

Figure 2 Scilab output on Digital Voice

V. CONCLUSION AND FUTURE WORK

In this paper we are providing a speculative aspect of the network simulators, which are best suited for voice data. When running an application on these simulators will provide an implementation of digital voice using Scilab and Matlab simulators. Voice communication is time sensitive in the every aspects of communication. The voice packets should be delivering on time, without packet loss and drop of packets of voice communication on these simulators. The future work will be an evaluation performance of these simulators networks of voice communication.

REFERENCES

[1]. H. Sundani et al. Wireless Sensor Network Simulators A Survey and Comparisons. International Journal of Computer Networks, vol. 2, issue 5, pp. 249-265.

[2]. M. Karl et al. A Comparison of the architecture of network simulators NS-2 and TOSSIM. Jan. 2005.

[3]. E. Weingartner et al. A Performance Comparison of recent network simulators. IEEE International Conference on Communications, pp. 1-5, June. 2009.

[4]. M. Karl et al. Wireless sensor simulator relevance compared to real testbed in outdoor and indoor environment. 6th International Wireless Communications and Mobile Computing Conference (IWCMC'10), 2010.

[5]. A. ur R. Khan et al. A performance comparison of network simulators for wireless networks. pp. 1-6.