dependent on the terms like IP address, MAC address, Network Identifier of the network and IP routing protocols . In the packet forwarding strategy, each packet is identifying with its label and when the label is

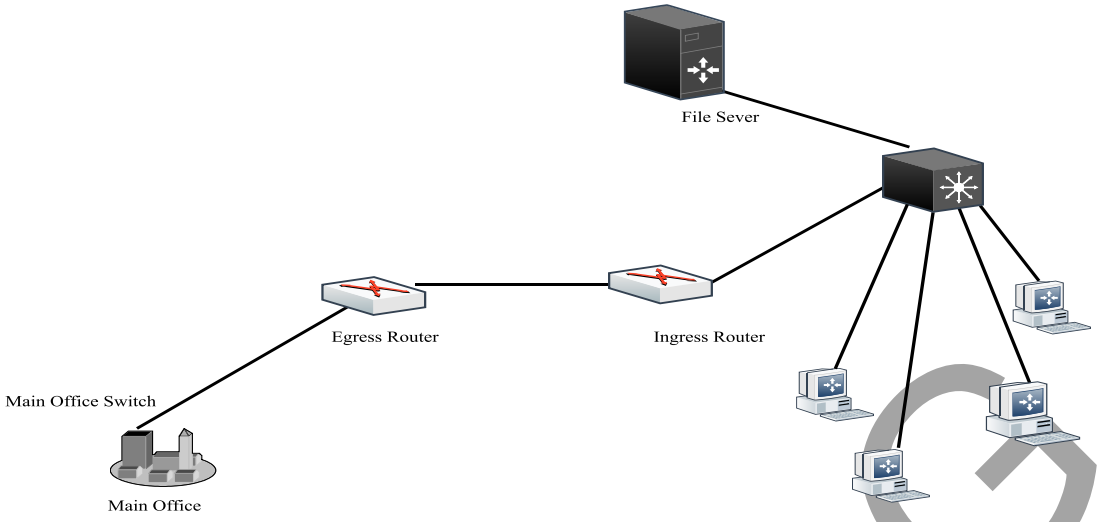

Fig.2. MPLS Network

forward to its adjacent node then old label has removed and new label is inserted by the adjacent node. The MPLS is being working on two phases, the current one consisting of labeling of packets with allocated by the ingress routers. Other phase is to identifying the route to forward the packets and need not be label to the packet.

C. Quality of Service

In a recent survey, the number of technologies which are failing to meet the quality of service norms in network, especially on the parameter of WLAN packet drops. The highest call drop rate was that of 17 percent and we aimed to set the benchmark of the network related parameters. With the help of MPLS we identify the network related issues like packet drop rate, insufficient bandwidth, poor RX quality and low packet success rate.

II. LITERATURE SURVEY

In [1], Andrew Sagitta Jauhari, Achmad Imam Kistijantoro, problem in traffic engineering simulation in a traffic engineering simulator has supported all traffic engineering related protocols and has complete capability of to simulate available complete protocols. Proposed scenario has compare different taxonomies, compare different algorithms (that CSPF & TSLB actually algorithm with same way of work by examining final result of simulation). Solution to handle a parallel route problem in CSPF is by modify a stop condition for next-hop finding ,selected next-hop must meet the bandwidth constraint Stop condition should stop when a next hop to a destination is a next – hop and meet a bandwidth constraint, not because next hop is a peer.

IJTC.ORG

In[2],SubramanianVijayarangam,Subramanian Ganesan, MPLS hierarchical architecture for label-switched networks can be used for supporting wireless users. This architecture involves requirements at the mobile terminal for initiating label switched paths at the air interface, and allowing end to end interconnection to the backbone network. The basic network architecture comprises of mobile hosts (terminals) capable of initiating traffic flows towards the base stations. The base stations aggregate traffic flows towards the Mobile Label Switching Nodes (MLSN) and terminate label switched paths. The packet core would simultaneously support multiple services, including 3G wireless applications/traditional data services/traditional voice services.

In [3], M. Abdel-Azim, M.M.Awad, H.A.Sakr, explained extensive network simulations using MPLS compared with network using VoIP .The authors had analyzed several important parameters such as end-to-end delay, packet delay variation, MOS, traffic send and traffic received. The experimental results had providing a great improvement in overall performance for voice traffic transmission and receive with lower voice packet delay, higher MOS value, and higher signal quality.

In [6], Ali A. Khan, et al. point out a set of paths of packet advancing and reducing the hand off. The research work is also about the uniting of multi-layer communications requirement. This research is very important regarding the calculation of strength of mobility over existing technology. The most efficient protocol in the network routing is MPLS and this protocol is the protocol of the core. This is the preliminary sketch towards the mobility. Although the mobility is the future of the communication but the wired communication standards are bases for mobility.

In [7], Anurag Goyal, et al. presented the new approach of Relay Race transmission using LSRs for amplifying, forwarding and switching the signals in MPLS technology to address severe problems which may occur due to signal amplification with repeaters and amplifiers. The proposed approach of Relay Race transmission is best suited for MPLS technology because of its low overhead in switching and forwarding the packets among label switched routers. The research enhances the amplification procedure of signals in MPLS and hence providing quality of service among different autonomous systems with low processing overhead, forwarding overhead and routing overhead.

In [11], Imad J. Mohamad et al. stated that Flow Label values previously used with a specific pair of source and destination addresses must not be assigned to new flows with the same address pair within the flow state lifetime of 120 seconds. Using the advantages of MPLS with IPv6 is still one of the migration challenges at the backbone.

III. MOTIVATION

IJTC.ORG

Each of the major cellular providers has 3G networks that provide coverage across most of the country. There are two competing 3G technologies currently being used: Global System for Mobiles (GSM) and Code Division Multiple Access (CDMA). The 4G technology is the successor to the 3G technology. Cellular providers are still building out their 4G networks. 4G is based on the WiMAX or LTE (Long Term Evolution) systems, and has a theoretical maximum speed of 100Mbps. Not everyone has 4G or 3G. Many only have 2G where the connection speed is less. Asynchronous Transfer mode is a technology that can support a wide variety of applications in several different network environments. The effect of congestion in the packet switched networks is performance degradation in ATM. So we have MPLS-modified approach which is a service that consumes way less bandwidth, so that if you have a slower net connection, you can still get access. But if we want to connect everyone, we have to look for the Routers and we have to able to serve those with the weakest connections — living in rural villages, lacking traditional infrastructure (which is not economical for them). With regard to spreading access and load balancing; a new option for data networking is being heralded, as transport of data moves from circuit-switching to packet-switching technique. To meet requirement of efficiency and quality of service (QoS) each algorithm is tailored to the switch architecture, buffering and scheduling principles for a particular service.

IV. LOAD BALANCING

The basic idea is to unbundle the information, transmission and distribution under network into separate entities with the aim to identifying problems in the load distribution. An MPLS significant limitation is its inability to dynamically load balance. To ensure that the load is equally balanced between the set of nodes, configure half of the nodes to access one router (ingress) primarily and the other half to access the other router primarily. Then, configure the opposite router (egress) as a secondary or alternate for each node to get the benefits of fault tolerance. In addition, be sure that the nodes act as replication partners. In order to handle the load properly, you should add additional routers for every 100 nodes served. If you want to increase the performance of a single node or server, you can turn off logging. If the ingress router crashes, you will lose recent changes to the database, but the secondary router performs better with logging off. If you would increase the network performance then add other router in the Network portion.

V. CONCLUSION

The development and standardization process are currently underway for defining suitable efficient integrated architectures and are a challenging task that needs a lot of research efforts. The growing worldwide deployment of MPLS on a WLANs has a growing impact on what public wireless networks will look like and how public mobile services will be provided in the near future. This research continues with choosing MPLS as the best

IJTC.ORG

choice for high switching rate and QoS maintenance because 4G networks does not cover the area everywhere. MPLS will be capable for providing a higher transmission data rate up on wireless network. It provides a user's to download a maximum download of data. This is packet oriented approach and we should do to debug the network. The MPLS technique makes improvement towards the existing network by means of probe count, delay and throughput.

REFERENCES

[1] Andrew Sagitta Jauhari, Achmad Imam Kistijantoro, Achmad Imam Kistijantoro, "INET framework modifications in OMNET++ simulator for MPLS traffic Engineering", ICAICTA, 2014, pp.87-92

[2] Subramanian Vijayarangam,Subramanian Ganesan, "QoS Implementation For MPLS Based Wireless Networks", ASEE Conference,2002,pp.1-9.

[3] M. Abdel-Azim, M.M.Awad,H.A.Sakr, "VoIP versus VoMPLS Performance Evaluation" ,IJCSI,2014,pp.194-198.

[4] Ahmed Sameh, Sherrif Wageih, Qussay Salaema, "Dealing with quality of service in Hybrid Wired-Wireless Networks", IJET-IJENS, 2010, pp.7-11.

[5] Jaco Schutte,Albert Helberg, "A study of the effect of MPLS on Quality of Service in wireless LANs",Technical Paper,2006, pp.1-6.

[6] Ali A. Khan,Nadeem. Asif, Yahya. Saeed, "MPLS Based Mobility Model for Mobile IPv6", European Scientific Journal, 2014, pp.196-207.

[7] Anurag Goyal, Ashu Gupta, Reetu Gupta , "Extending MPLS technology in providing quality of service among different autonomous systems using Relay Race transmission approach", WSEAS TRANSACTIONS on COMPUTERS, 2014,pp.43-53.

[8] Aqsa Malik, Junaid Qadir, Basharat Ahmad, Kok-Lim Alvin Yau, Ubaid Ullah, "QoS in IEEE 802.11-based Wireless Networks: A Contemporary Survey", arxiv, 2014, pp.1-25.

[9] Tim Szigeti,Robert Barton,Kenneth Briley, "End-to-End QoS Network Design", Chapter 15, CISCO Press, 2014, pp.275-301.

[10] Ahmed Hassan M. Hassan, Elrasheed Ismail M. zayid, Mohammed Altayeb Awad, Ahmed Salah Mohammed, Samreen Tarig Hassan, "Performance Evaluation of QoS in WiMax Network",CAIJ,2015,pp.15-23.

IJTC.ORG

[11] Imad J. Mohamad,Tat-Chee Wan, Faisal Y. ALzyoud, Putra Sumari, "Optimizing the MPLS Support for Real Time IPv6-Flows using MPLS-PHS Approach",IEEE,2009,pp.1-6.

[12] Prague, "MikroTik Router OS Introduction to MPLS", MikroTik, 2009, pp.1-29.

IJTC.ORG