

IMPLICATIONS OF VENERABLE NETWORK OVER TIME SENSITIVE NETWORK

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ABSTRACT:

Time Sensitive Network standards define the mechanism of transmission the data over the Ethernet Network. Real time based applications are time sensitive, immediate or current, which helps to monitor the progress of network. This paper includes Implications of Venerable network protocols that are used in real time applications. Time Sensitive Network for real time media is control stream. The paper also describes the need of Time Sensitive Network, it is because of various implications present in the Venerable networks that are used in real time applications.

Keywords: *Time Sensitive Network, Ethernet, TCP/IP, UDP, IEEE 802.3 Ethernet, Bandwidth.*

1. INTRODUCTION

There is a place for cooperative work between various contributors to the set of standards commonly known as Time Sensitive Network. Time Sensitive Networking task group was renamed from the Audio/Video task group task and continue their work. There will be explanation of how these protocols work together to create a cohesive real time media network without needing any proprietary technologies. Emerging commercial research, audio video conferencing, cloud computing and remote surgeries are time sensitive [1]. In today's era Wi-Fi, Ethernet and IEEE 802 technology have been successful and emerging applications. This is not a replacement for the IEEE802.1 or Time Sensitive Task Group sites, just as informal/place for cooperative work.

Timing is very important when complex systems like power transmission plants and assembly lines are replaced by conventional system. Actions are performed with in a time interval; if even a millisecond delayed the consequences could be critical. Time Sensitive Network for real time media is control stream that are used to automotive or industrial facilities. We have many protocols that are used in real time application but these protocols have some drawbacks that's why they are not used in every field of real time application. Hence, a new network have been developed that fulfill the overcomes of elderly network such as Time Sensitive Network.

2. RELATED WORK

Performance Assessment of Data and Time Sensitive Wireless Distributed Networked Control System in Presence of Information Security classified the delay data from every NCS module (sensors, actuators and controllers) and define the performance parameter for this NCS test bed. Various system factors including network delay, system gain, affecting these performance parameter are recognized [9].

Advantages of Precision Resistance Networks for Use in Sensitive Applications discuss several of the advantages of selecting specialized dividers and networks, including performance specifications, lot uniformity, physical constraints and cost and procurement logistics [8].

Dynamic Routing of Time Sensitive Air Cargo using Real Time Information describes the route planning of time sensitive air cargo is becoming more important with the growing air-network congestions and delay. A departure delay estimation model is developed to account for real time information inaccuracy [7].

Performing Time Sensitive Network Experiments use to make a testbed, with limited resources, approximate closely a real large heterogenous network, one needs to exactly identify the traffic pattern.in this, appropriate software and hardware configuration is then required to generate traffic with the desired characteristics. This work provides guidelines for identifying traffic patterns and configuring software and hardware components to generate traffic in a test bed [6].

On the Use of IEEE 802.15.4/ZigBee for Time Sensitive Wireless Sensor Network Applications evaluated the network performance of the IEEE 802.15.4 Slotted CSMA/CA mechanism for different parameter settings, both through simulation and through an experimental test bed.it also identify a number a technological constraints, namely related to hardware/software and to the open-ZB implementation inTinyOS [5].

Providing End-to-End Qos for IP based Latency Sensitive Applications may not scale to the publicly shared Internet, this proposed to study performance of real time applications within the Diff-Serv framework. This paper choose only Voice over IP (VoIP) traffic as a workload for evaluation, and use a subjective test to determine the effects of network centric parameters on human perceived voice quality [4].

Introduction to TCP/IP Network Attacks adopt computer networks as transportation media to convey the intrusion or even attack the communication system itself. There also come many potential threats to the network community like unauthorized access to private information, malicious break-in to other organization's systems or intent to render a system to make it unreliable or unusable [3].

Introducing Support for Scheduled Traffic over IEEE Audio Video Bridging Networks addresses the introduction in IEEE AVB networks of scheduled traffic i.e high priority traffic that is transmitted according to a time schedule so as to ensure no interference from other traffic classes. This paper used a performance assessment based on OMNeT++ simulations [2].

3. PROBLEM DEFINITION

The paper 'Implications of Venerable Network over Time Sensitive Network' gives some issues of Venerable networks that are used in time critical applications. It is the aim that many Networks exist for real time applications, we provide some implications related to the Venerable networks, so that these can be solved by the time sensitive network.

4. IMPLICATIONS OF VENERABLE NETWORK

- 1) IEEE 802.3 Ethernet has time – critical communications systems of the industry that rely on the wireless control and wireless sensing. Apart from that IEEE 802.3 Ethernet does not support real time distributed control. So the system will respond to the command with minimum delay.
- 2) Time delays also known as latency, they decrease bandwidth in the process and splitting the communication into several Ethernet networks.
- 3) Today's Ethernet is time-critical communication , when it is not mixed with the traditional best- effort traffic (that sends acyclic data like firmware updates, diagnostic information and configuration) and reserved traffic (that carries video and audio stream, real time diagnostics (tracking and inspection information), counts and measurements.
- 4) Application when large data moves to a TCP connection they trigger with the packet loss, jitter and TCP congestion are cause of diminishment in throughput.
- 5) UDP implementation is adequately robust so that it is not vulnerable to the wide range of attacks in today's internet.
- 6) TCP/IP has extra overhead that makes the transmission slower. So the speed of TCP/IP is very slow.
- 7) Cost of each 802.1 in access point one, two or three times of big access point. This is however expected to come down soon.

All of these are the Implications of Venerable network. So a Time Sensitive Network is used to solve all these problems. In this, charter of Task Group is to provide the specification that will allow time synchronized low latency streaming services. We are now beginning to deploy network based application that place greater demands on the underlying network conversational applications such as Voice Over IP (VOIP) and Storage Area Network (SAN) are sensitive to the time it takes for packets to transit the network, how much that times varies (Jitter) and how often packets are lost, corrupted or replicated. These networks are used in time critical applications and gets effect the data over the network.

5. CONCLUSION AND FUTURE WORK

We conclude that this paper gives list of Implications in Venerable Network over Time Sensitive Network that is used in time critical applications. Networks are existing for time critical applications, but some issues are over there, these issues overcome by the time sensitive network. Future work will be explaining real time applications where time sensitive network can be used.

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