Work-let Name: Performance Evaluation of DSCP values in various network

Worklet Details

1. Worklet ID: CP214MS
2. College Name: Ramaiah Institute of Technology

KPIs achieved till now

Analysing through the resources provided which will be helpful in the further implementation of the project

Any Challenges/ Issues faced

Impediment in learning about the packet analysis

Next Steps

Focusing on implementation of the concept

Key Achievements/ Outcome till now

First view on OSI model and structure'

Hands on experience with NS3 and Wireshark

Basic Network layer services

TCP,UDP,IP,headers parameters

Date: 24.01.2023

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Learnings :

1. **Understanding of each parameter in TCP,UDP,IP headers?**
2. **Hands-on experience with ns3.**
3. **Hands-on experience with wireshark.**

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1.Understanding of each parameter in TCP,UDP,IP headers.

TCP/IP is a stream-oriented protocol, while UDP is a packet-oriented protocol. This means that TCP/IP is considered to be a long stream of data that is transmitted from one end of the connection to the other end, and another long stream of data flowing in the opposite direction.

TCP - used for traffic that we need all the data for. i.e HTML, pictures, etc. UDP - used for traffic that doesn't suffer much if a packet is dropped, i.e. video & voice streaming, some data channels of online games, etc.

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1.Understanding of each parameter in TCP,UDP,IP headers.

TCP **provides communication between an application program and the Internet Protocol** (they are frequently written as TCP/IP.) An application does not need to required packet fragmentation on the transmission medium or other mechanisms for sending data in order to be sent via TCP.

Whereas

User datagram protocol (UDP) is used for **time-critical data transmissions such as DNS lookups, online gaming, and video streaming**. This communication protocol boosts transfer speeds by removing the need for a formal two-way connection before the data transmission begins.

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2. What is Ns3 ?

- ns-3 has been developed **to provide an open, extensible network simulation platform, for networking research and education**. In brief, ns-3 provides models of how packet data networks work and perform, and provides a simulation engine for users to conduct simulation experiments.
- We had a hand's on experience with ns-3 on linux.
- Learnt about basics of building topologies using ns-3.

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2. What is Ns3 ?

- A few key points are worth noting at the onset:

ns-3 is open-source, and the project strives to maintain an open environment for researchers to contribute and share their software.

- *ns-3* is not a backwards-compatible extension of ns-2; it is a new simulator. The two simulators are both written in C++ but *ns-3* is a new simulator that does not support the *ns-2* APIs.

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3. What is WireShark ?

Wireshark is **a network protocol analyzer, or an application that captures packets from a network connection, such as from your computer to your home office or the internet**. Packet is the name given to a discrete unit of data in a typical Ethernet network. Wireshark is the most often-used packet sniffer in the world.

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3. What is WireShark ?

We tried analyzing some packets through WireShark for better learning of the concepts of packet flow and to get an overview of the software we have to use for the further project implementation.

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