7. SIMULATION RESULTS

Here the data packets between the client and server nodes have been sent to one another in between a section of interval of time known as sector or say time sector

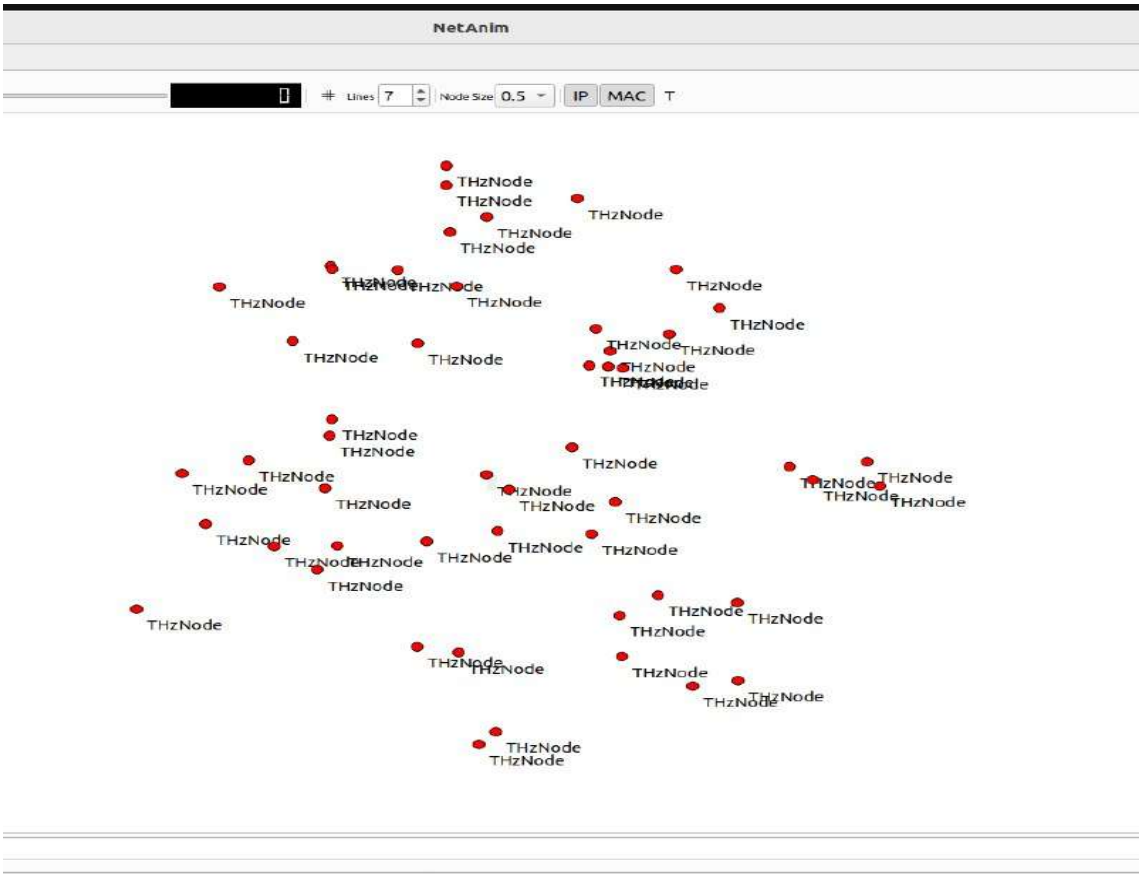

Fig 7.1: The client and server nodes inside a grid area

This illustrates the interaction between client and server nodes within a grid area. In this visual representation, you can observe the spatial arrangement of these nodes, highlighting the network communication and data exchange that occurs within this framework. The grid structure suggests a systematic organization, potentially indicating a distributed or interconnected system where clients and servers collaborate. The figure serves as a visual aid to understand the relationship and dynamics between these essential components in a networked environment.

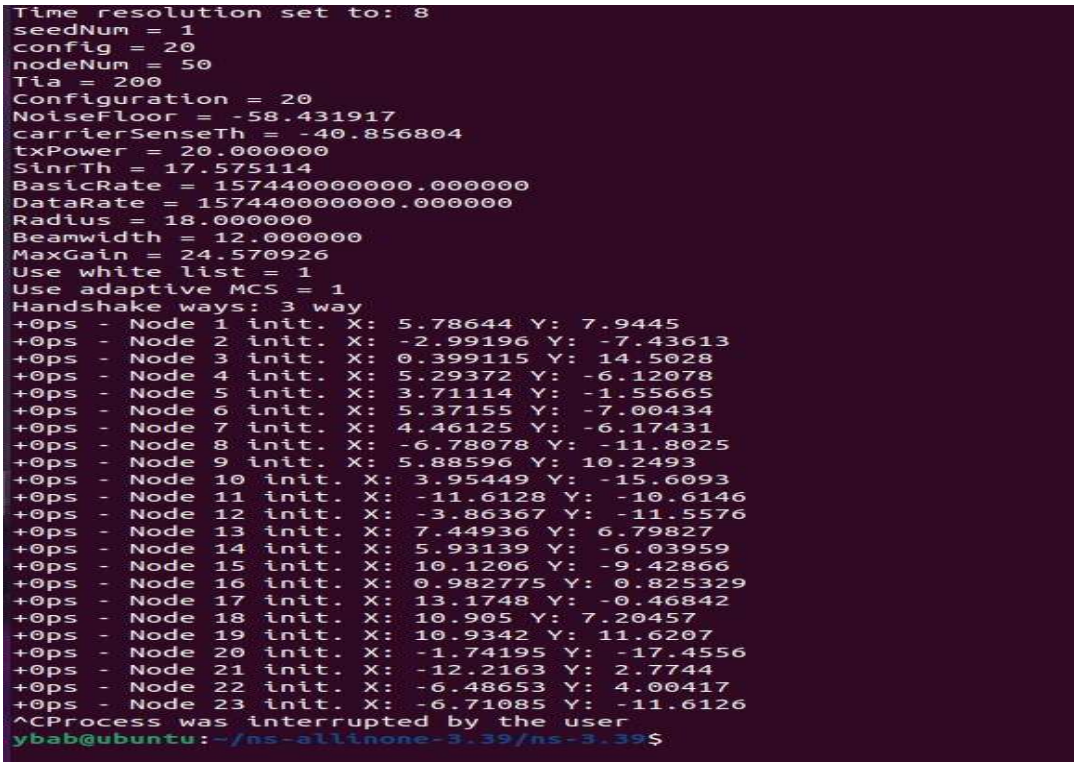

Fig 7.2: The Nodes created at the grid with their coordinated.

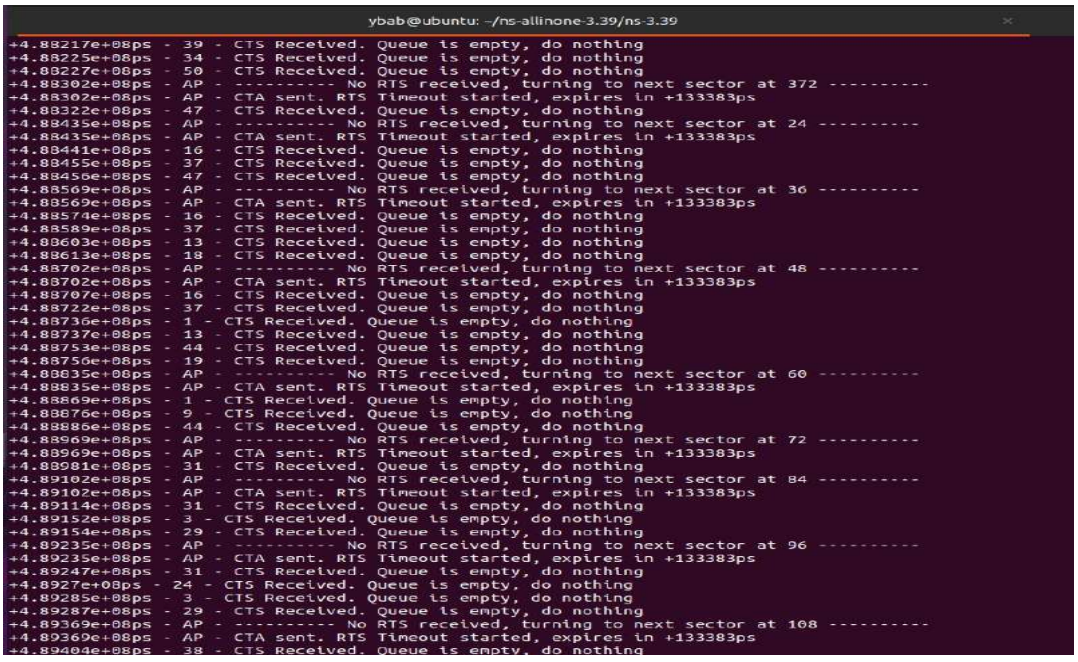

Fig 7.3: The transmission of data between the nodes.

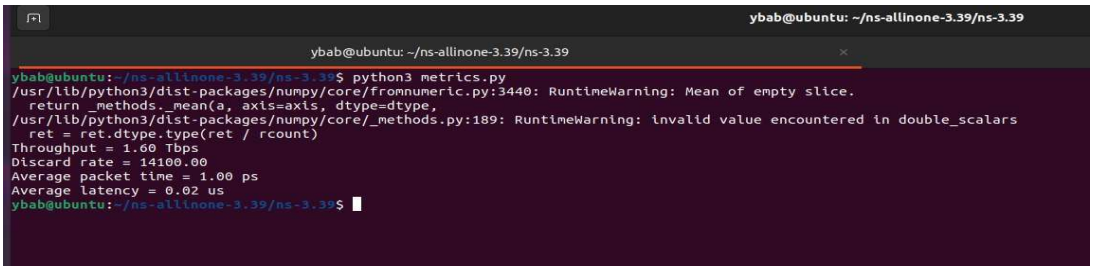

Fig 7.4: Output Parameters

This figure provides a comprehensive overview of key performance metrics, showcasing the efficiency and responsiveness of the system under consideration.

- **Average latency,** depicted as 0.02 microseconds, signifies the minimal time delay experienced in data transmission, emphasizing the swift responsiveness of the network.
- **Throughput**, illustrated at an impressive 1.60 terabits per second (Tbps), highlights the system's robust data handling capacity. This metric reflects the volume of data successfully processed within a unit of time, emphasizing the network's ability to efficiently manage data traffic.
- **Discard rate**, marked at 14100, represents the proportion of discarded or rejected data packets during transmission. A lower discard rate indicates a more reliable and effective data transfer process, underlining the system's resilience in maintaining data integrity.
- **Average packet time**, denoted as 1 picosecond (ps), emphasizes the swift pace at which individual packets traverse the network. This metric is crucial for assessing the timely delivery of data, showcasing the system's ability to swiftly and accurately transmit information.

In summary, Figure- encapsulates a snapshot of the system's performance, revealing its low latency, high throughput, minimal discard rate, and efficient packet transmission characteristics. These metrics collectively underscore the network's capability to deliver data with speed, reliability, and precision.

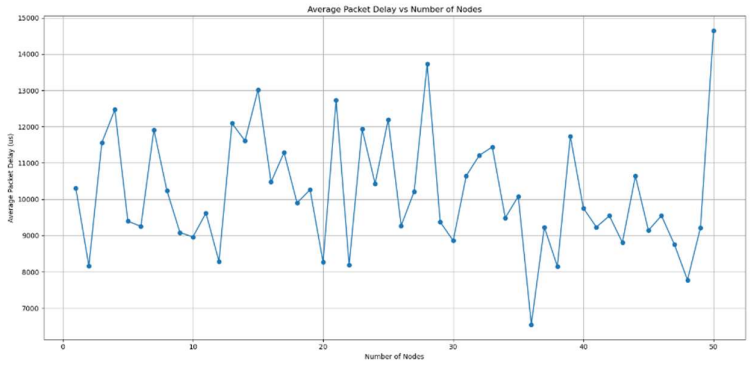

Fig 7.5: Delay vs. Nodes

- **Delay vs. Nodes:** This graph illustrates how the delay in data transmission changes as the number of nodes in the network increases. It helps in understanding how the network's performance is affected by its size.

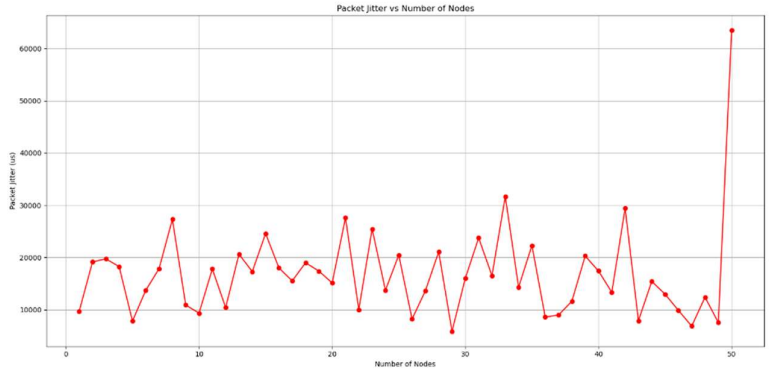

Fig 7.6: Jitter vs. Nodes

- **Jitter vs. Nodes:** Jitter refers to the variability in delay between data packets. This graph will show how jitter evolves concerning the number of nodes, giving insights into the stability of the network under different loads.

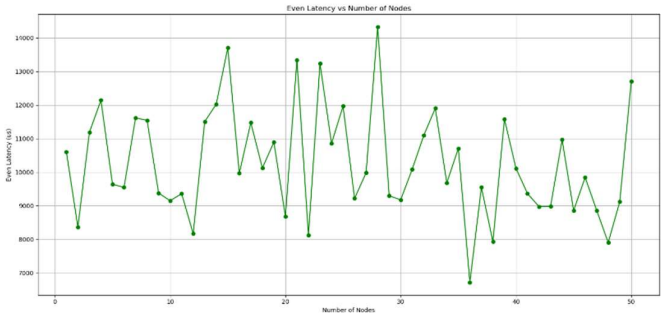

Fig 7.7: Latency vs. Nodes

- **Latency vs. Nodes:** Latency is the time it takes for data to travel from the source to the destination. This graph depicts how latency is influenced by the number of nodes, providing crucial information about the network's responsiveness.

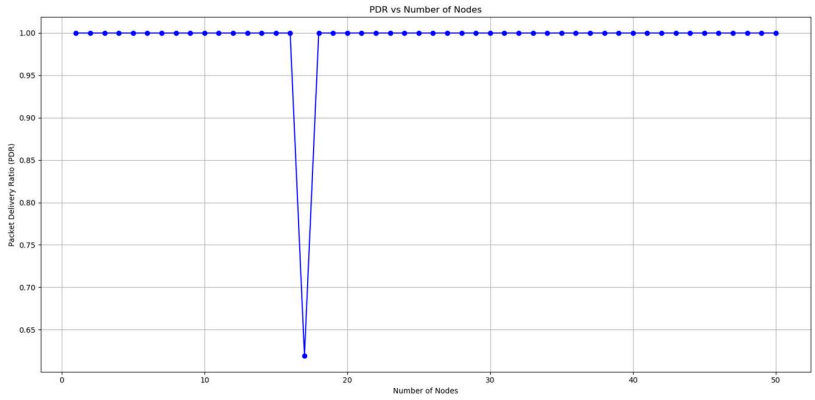

Fig 7.8: PDR vs. Nodes

- **PDR vs. Nodes:** Packet Delivery Ratio (PDR) measures the percentage of successfully delivered packets. This graph demonstrates how PDR changes with the increase in the number of nodes, indicating the reliability of the network.

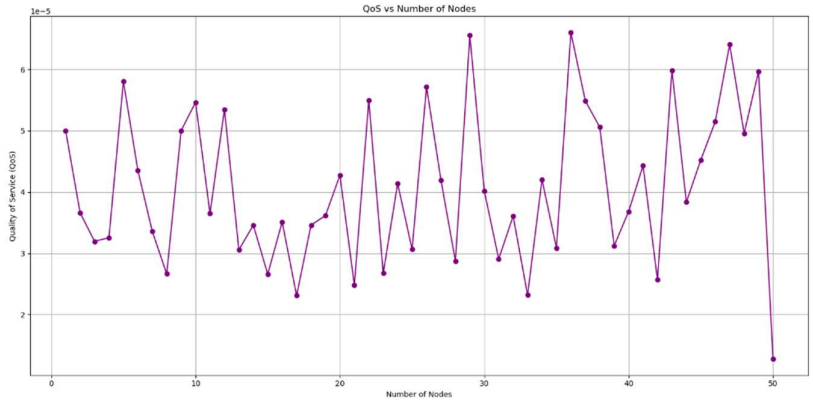

Fig 7.9: QOS vs. Nodes

- **QOS vs. Nodes:** Quality of Service (QOS) is a measure of the network's ability to meet specific performance requirements. This graph showcases how QOS parameters vary concerning the number of nodes, giving an overall view of the network's service quality under different conditions.