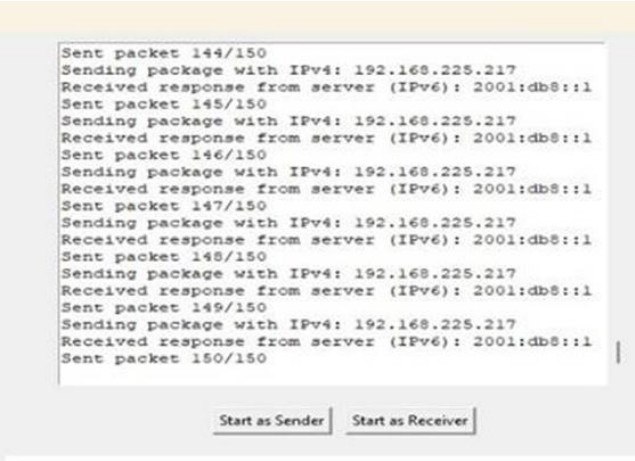
RESULT ANALYSIS



Efficiency logs of transition for IPv6 to IPv4 on the sender side.

1. SENDER-SIDE LOGS AND GRAPHS (Client-Side Execution)

Logs:

- The logs indicate that the client (IPv4: 192.168.225.217) is sending packets to a server with an IPv6 address (2001:db8::1).
- Each log entry confirms the successful translation of IPv4 to IPv6 and the return of the translated IPv6 packet to the client.
- Packet numbers are listed sequentially (e.g., packets 146 to 150), verifying that the data transmission was uninterrupted and responses were received for each packet sent.

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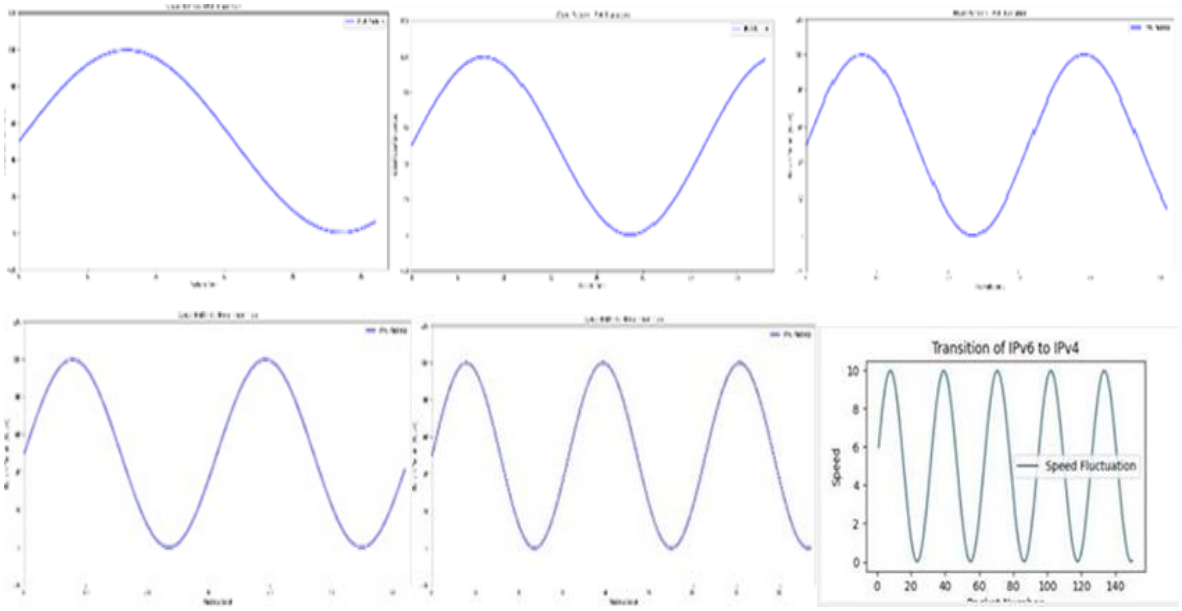
Analysis of Graph:



Efficiency graph of Transition of ipv6 to ipv4 on the Sender side.

The figure above illustrates the transition behaviour during communication from an IPv6 to an IPv4 network. This process typically involves encapsulating IPv6 packets within IPv4 packets to ensure seamless transmission across networks supporting different protocols. The graph showcases the speed and performance fluctuations during this transition process.

The sinusoidal pattern suggests periodic network congestion or delays, likely due to protocol overhead when translating between IPv4 and IPv6. This could also reflect variations in processing time or network latency.

2.RECEIVER-SIDE LOGS AND GRAPHS (Server-Side Execution)

Efficiency logs of Transition of ipv4 to ipv6 on the Receiver side.

Logs:

- The logs describe packet exchange between the same IPv4 client (192.168.225.217) and IPv6 server (2001:db8::1).
- This time, the server logs focus on sending and receiving packets, showing bidirectional communication.
- The logs confirm that IPv4 packets are being successfully received and processed at the IPv6 server, and the responses are sent back to the client side without packet loss (all 150 packets sent and received).

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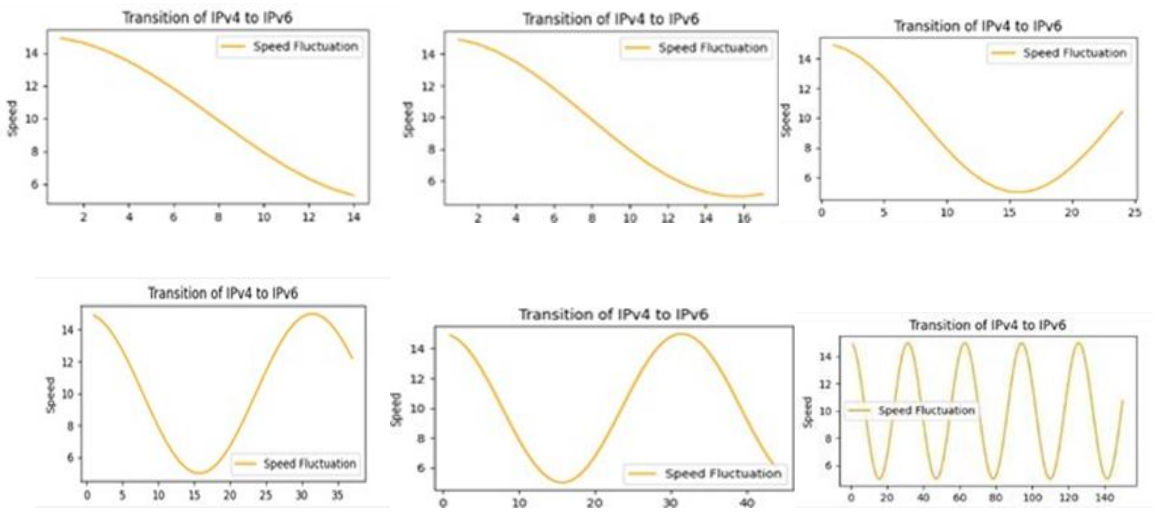
Analysis of graph:



Efficiency graphs of Transition of ipv4 to ipv6 on the Receiver side.

The graphs exhibit sinusoidal patterns representing variations in network speed over time. Each subplot provides insights into performance parameters during the tunnelling process. Fluctuations in speed are common in such transitions due to routing overhead, encapsulation, and protocol conversion delays.

Performance Metrics:

Speed Variation: As IPv4 packets are encapsulated within IPv6 headers, the process introduces overhead, resulting in speed fluctuations, as seen in each subplot.

Latency and Overhead Impact:

The gradual decline and recovery in speed observed across multiple graphs indicate the impact of network latency and the tunnelling mechanism.

Cyclic Behaviour:

The fluctuations suggest periodic network conditions, possibly influenced by packet loss, queueing delays, or traffic congestion in the network.