Networking LAB REPORT

Submission on NS 2

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Section A

CSE,BUET

Assignment

We were assigned the task of changing in the C code of ns2 and then compare previous statistics with new one.

Change in the code

I changed in the priority queue .Previously whenever the queue was full and a new packet arrived we only removed the least priority packet.But now i am removing 20% of the packets in the queue starting from 70% length to 90% length of the queue.

Proposed Advantage

Previously a low priority packet was always dropped.A new least priority packet would never get chance against old higher priority queue.But as we are now dropping 20% of the packets some old higher priority packets are dropped so some new lower priority packets are getting the chance.

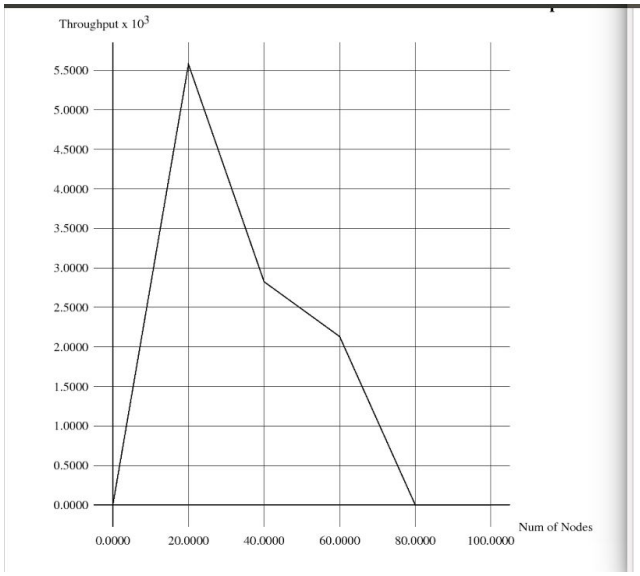
Sometimes newer packets are more important than older ones.In the priority queue some older packets may reside for a long time and ultimately lose their goal due to delay.Instead of them a newer low priority queue can have a better purpose.

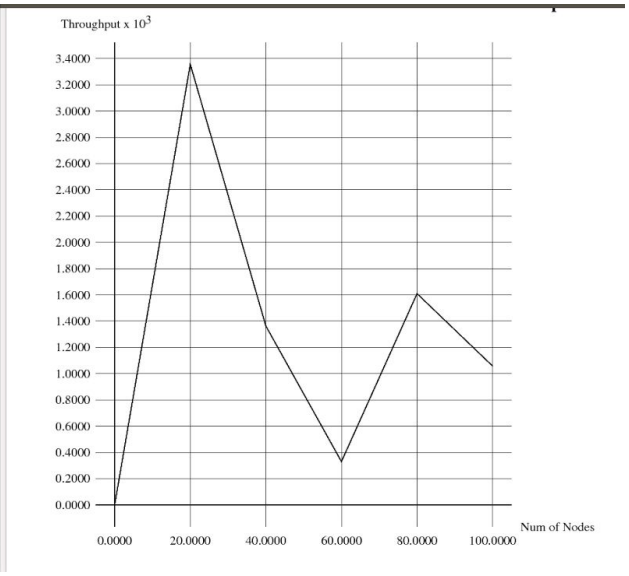
Again we are actually dropping 20% lower priority packets from the queue.These packets would be dropped even if we dropped one by one. Ultimately we are dropping them a little bit earlier to make space for other packets.So there is a flavour of early detection in it.

So it can improve delay and congestion control resulting in improvement in throughput and delivery ratio as well.

RESULTS

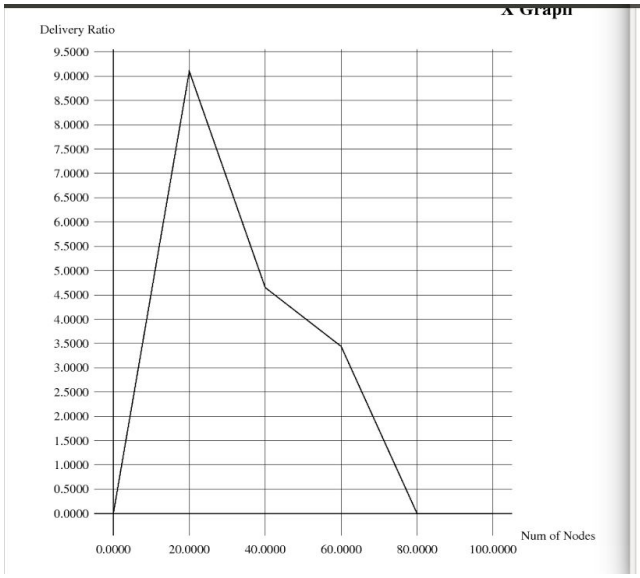
1. For 802_15_4 node vs throughput was about the same
2. For 802_15_4 node vs delay increased
3. For 802_15_4 node vs delivery ratio increased
4. For 802_15_4 node vs total energy increased
5. For 802_11 node vs throughput increased
6. For 802_11 node vs delay decreased
7. For 802_11 node vs delivery ratio increased
8. For 802_11 node vs total energy increased

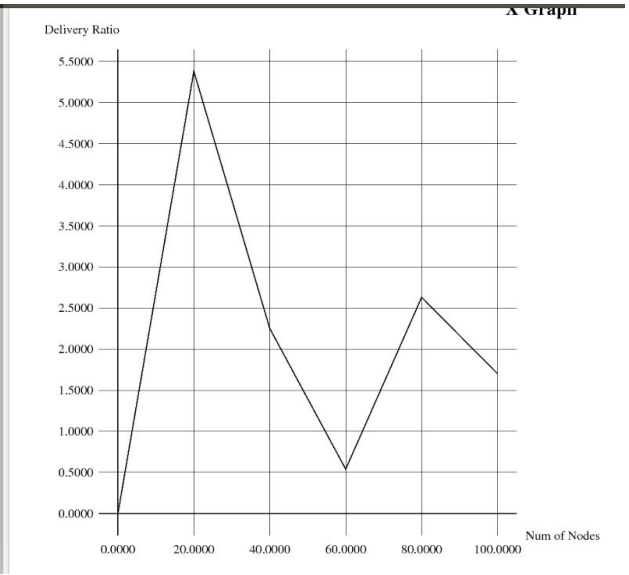




NEW OLD

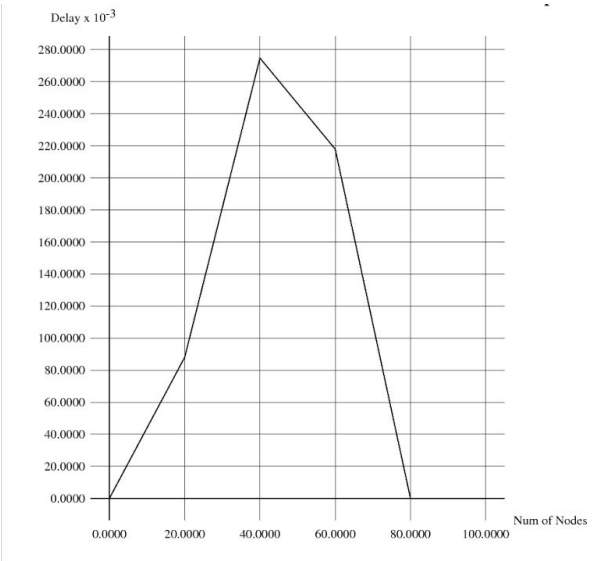
Node vs Throughput for 802_11

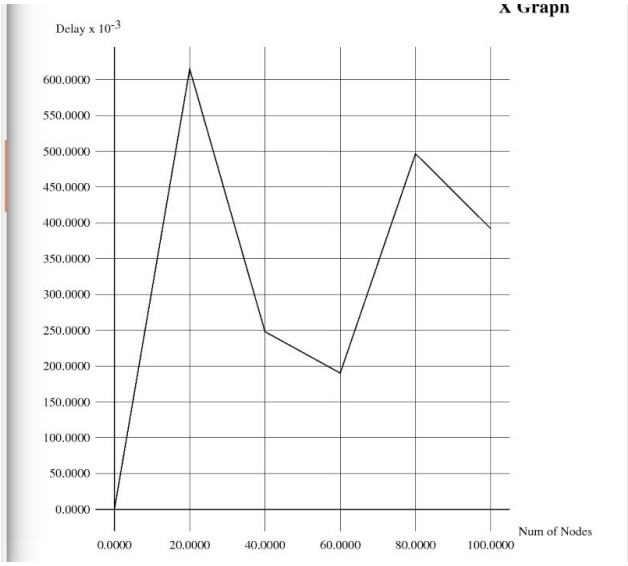




NEW OLD

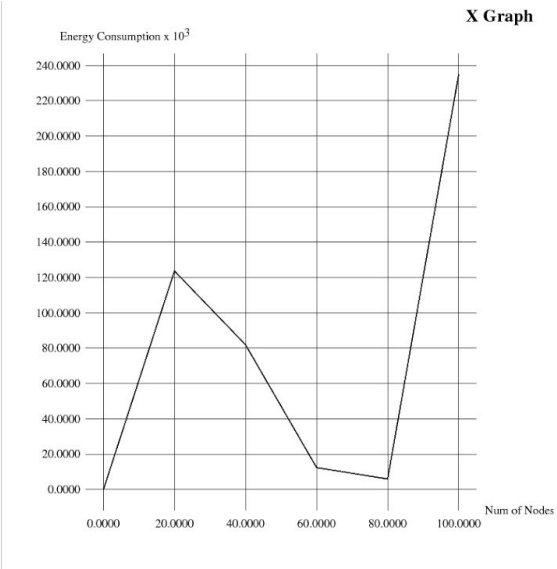
Node vs Delivery Ratio for 802_11

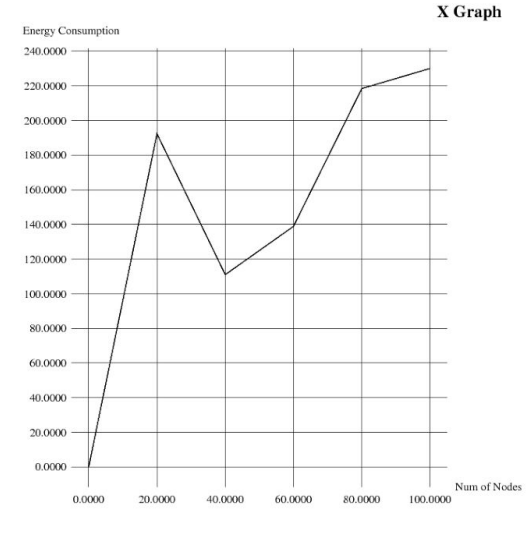




NEW OLD

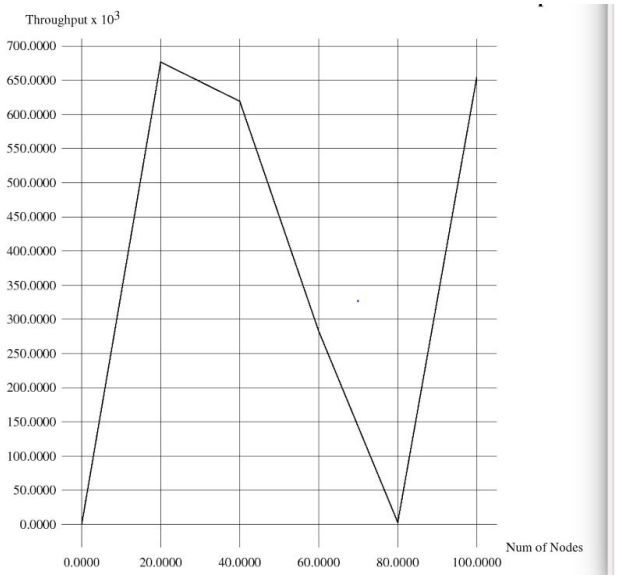
Node vs Delay for 802_11

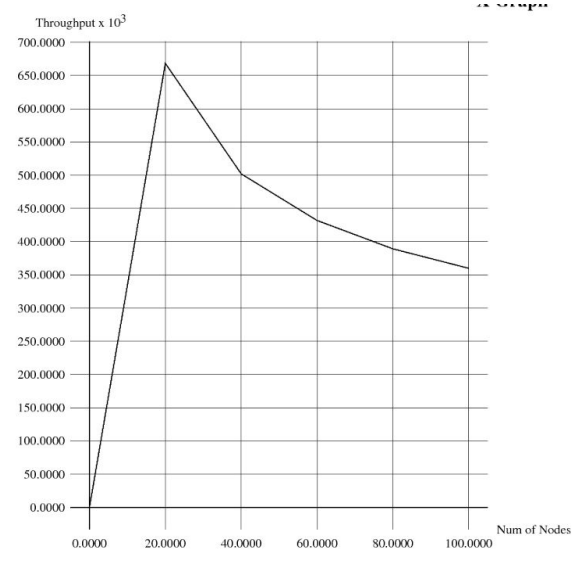




NEW OLD

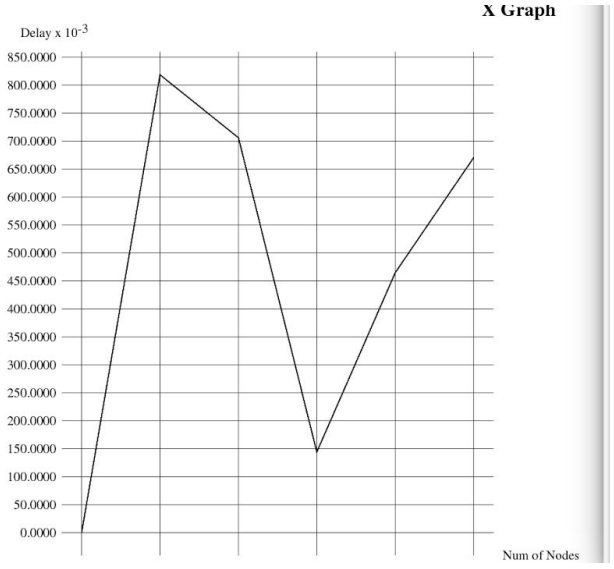
Node vs Energy Consumption for 802_11

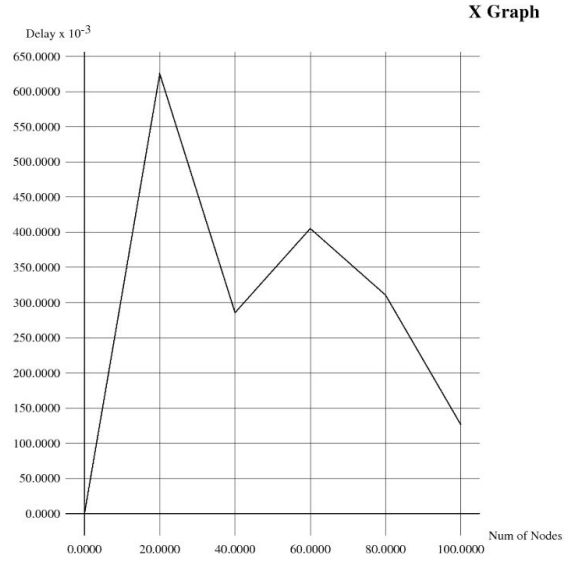




NEW OLD

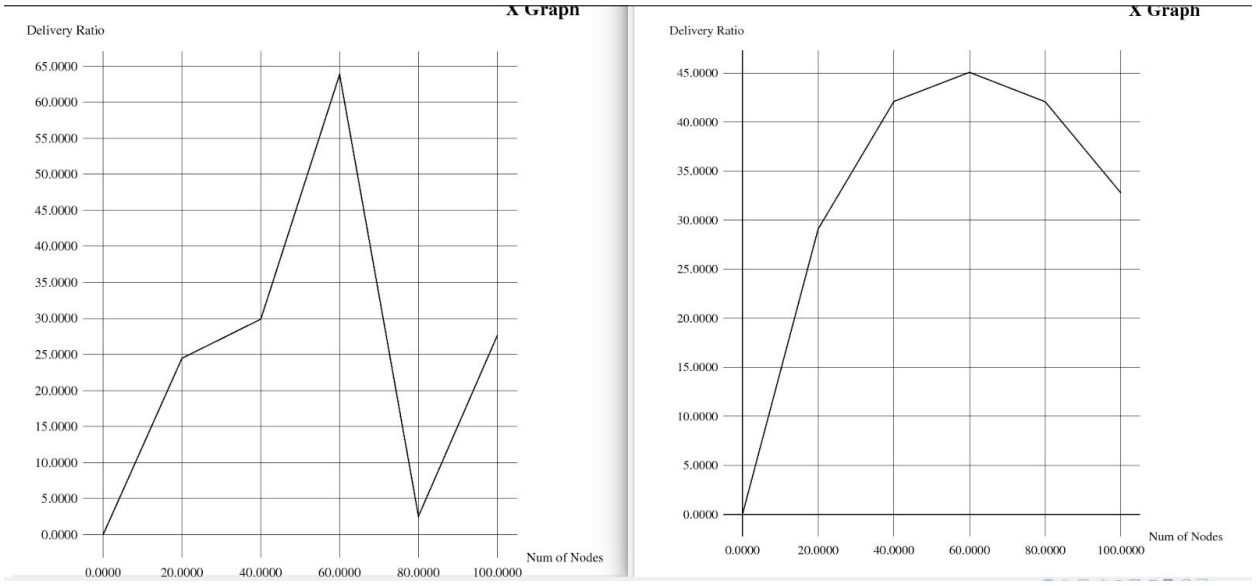
Node vs Throughput for 802_15_4





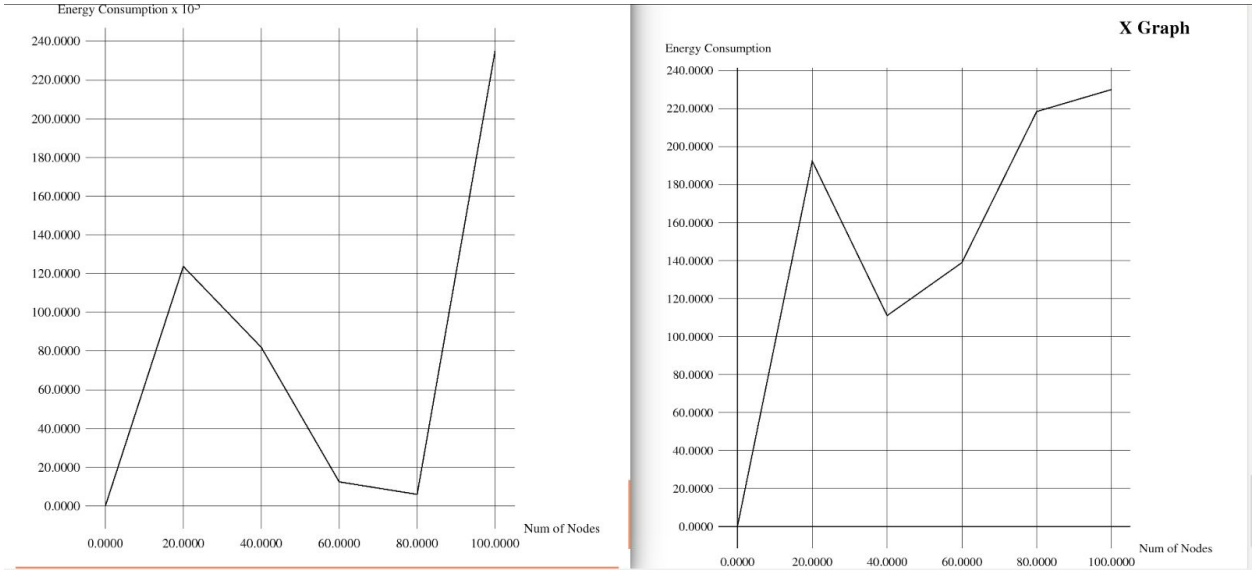
NEW OLD

Node vs Delay for 802_15_4



NEW OLD

Node vs Delivery Ratio for 802_15_4



NEW OLD

Node vs Energy Consumption for 802_15_4

CONCLUSION

So overall performance improved but energy consumption was high.

Energy consumption is the main problem in this modification for the network topology i created.