LAB ASSIGNMENT-5

CSN-361

Submitted by
Ritik Kumar 17114063

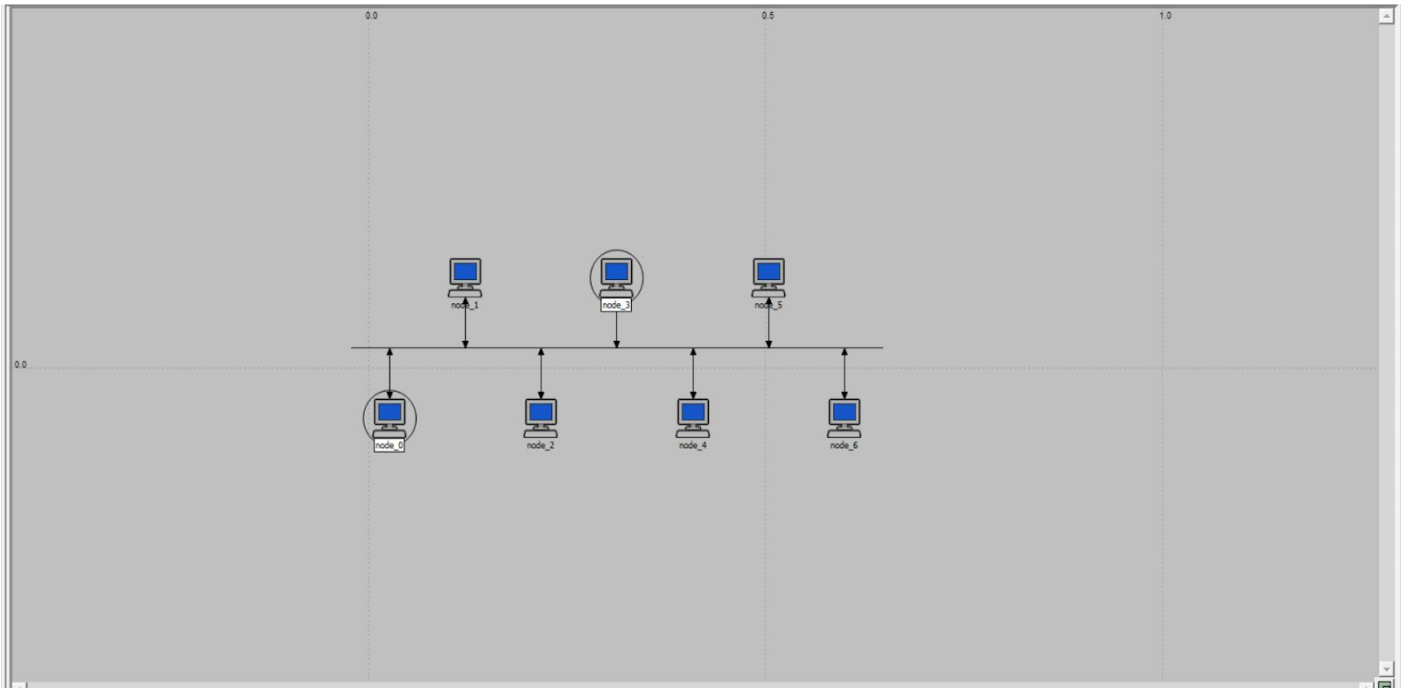
Problem Statement 1:

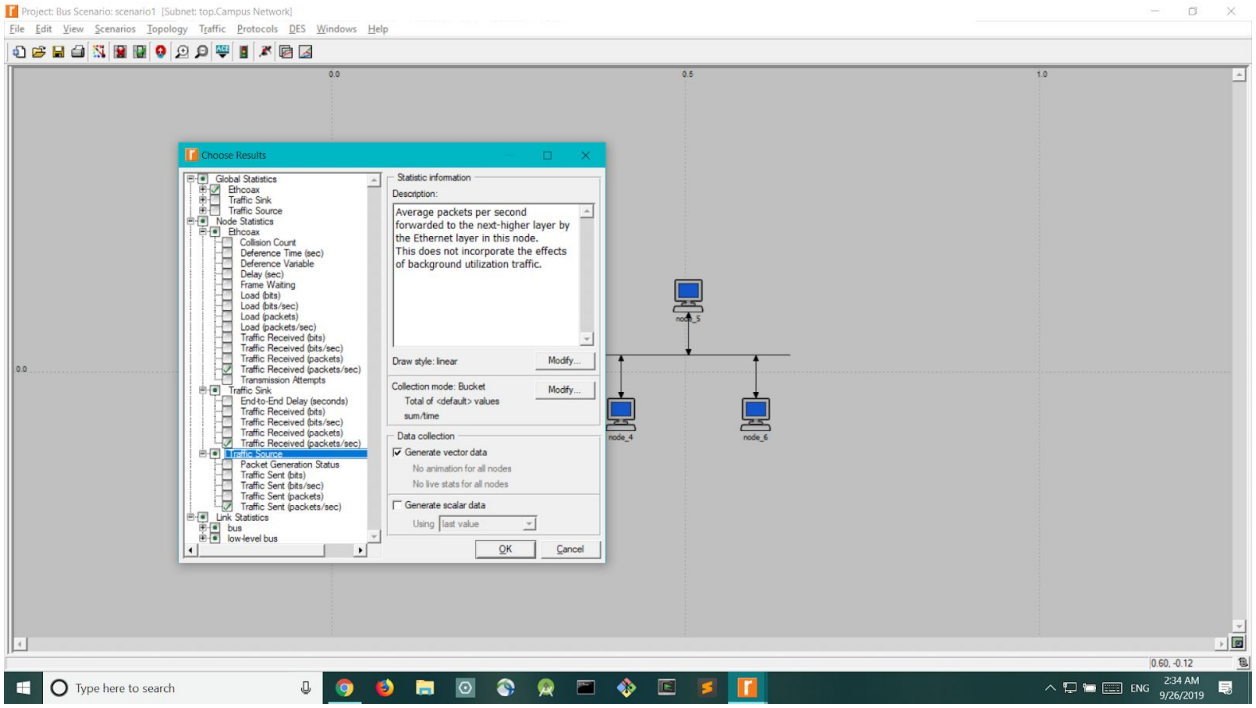
Using OPNET create Bus topology among a set of N computer nodes out of which two nodes are the source and the rest are sink nodes.

Model the traffic of source and sink nodes individually and demonstrate the packet transfer between them using Ethcoax (Ethernet using coaxial) cables. Use network scale as the “campus” of area 1km x 1km.

Solution

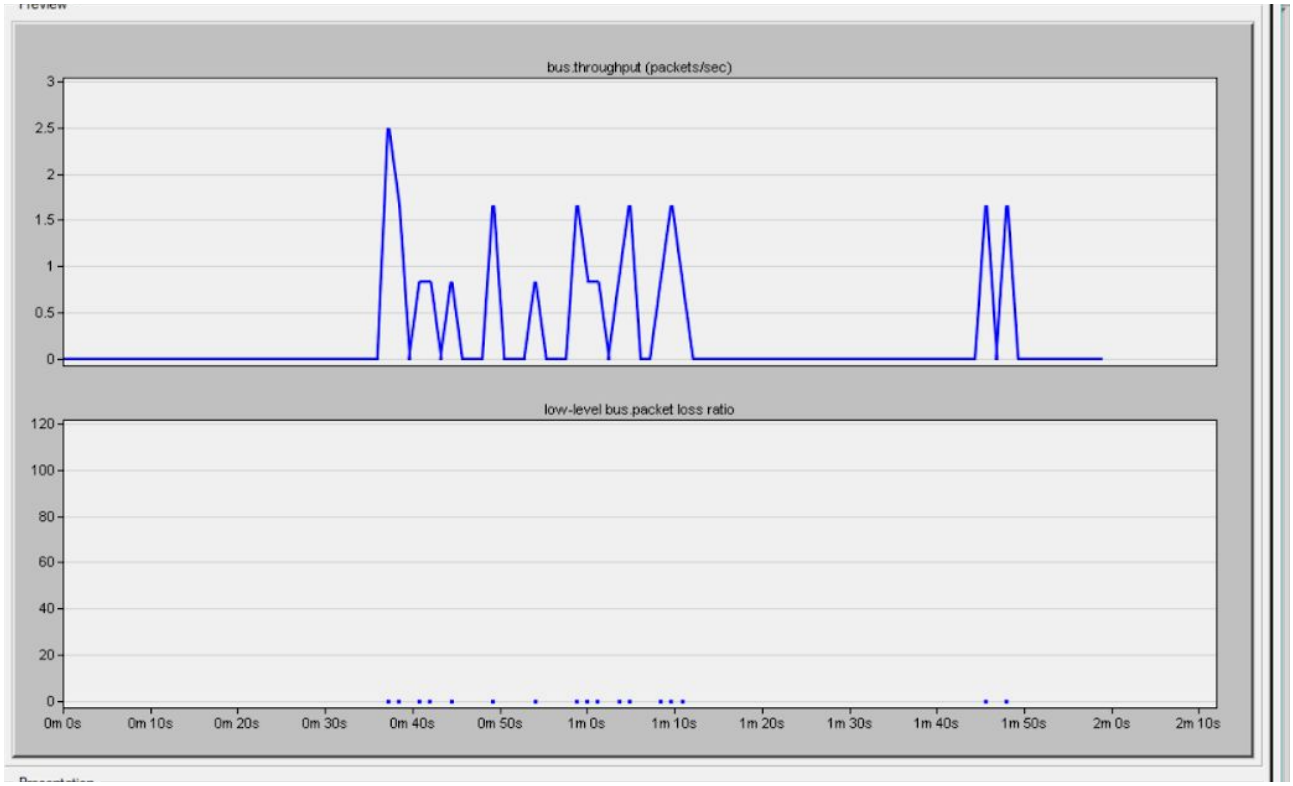
As instructed, it is a 7 node bus topology in the RiverBed network emulation. The nodes 3 & 0 serve as the required 2 sources while the rest of the act as a receiver



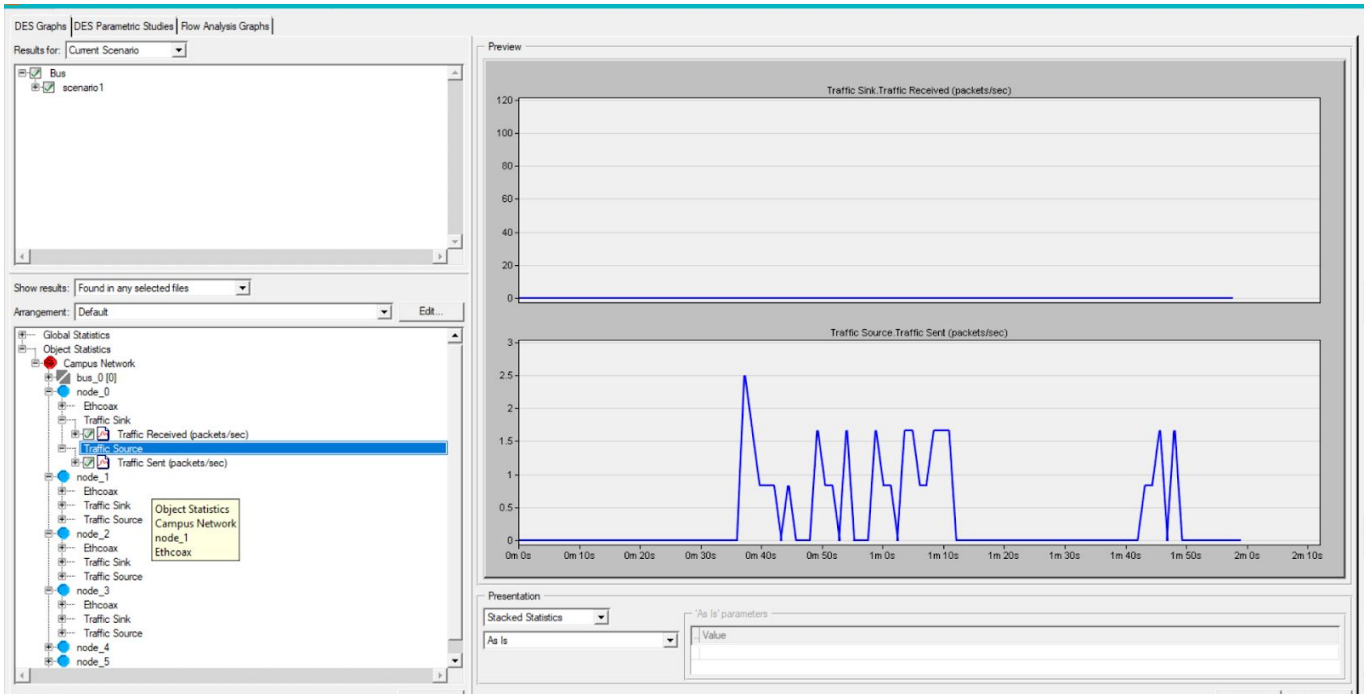


Results

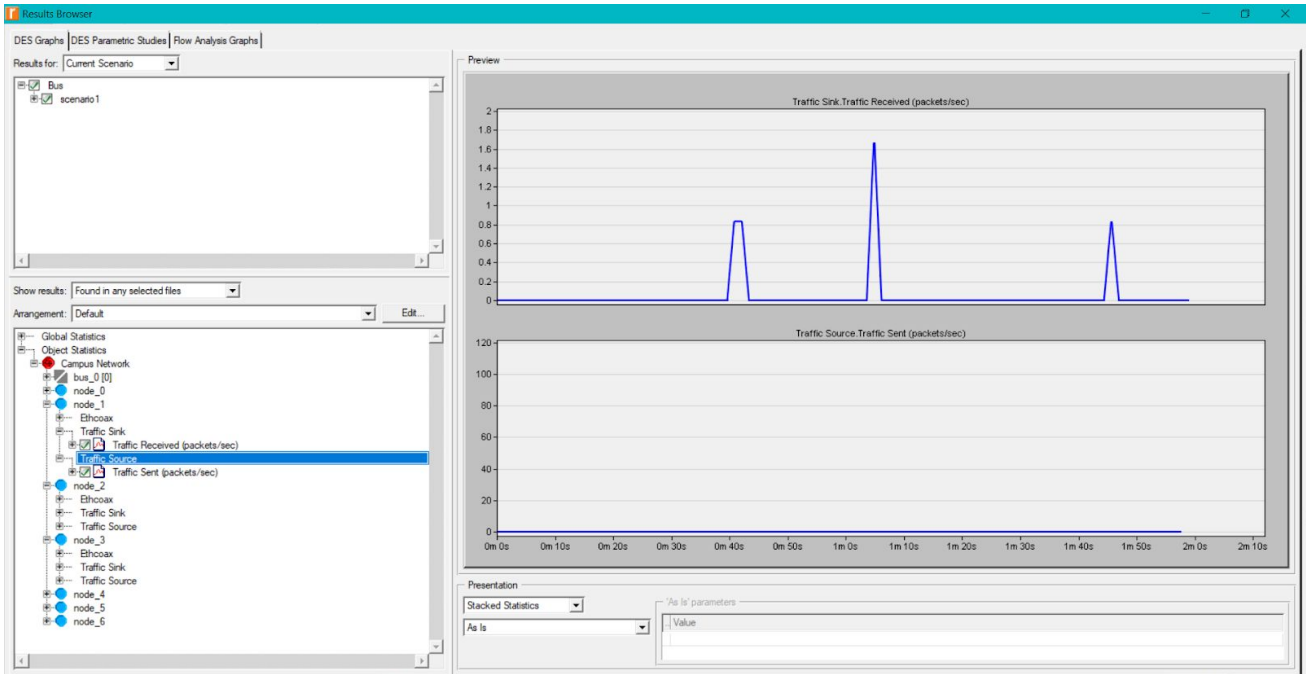
The global throughput and packet loss. Clearly packet loss occurred at times of peak throughput



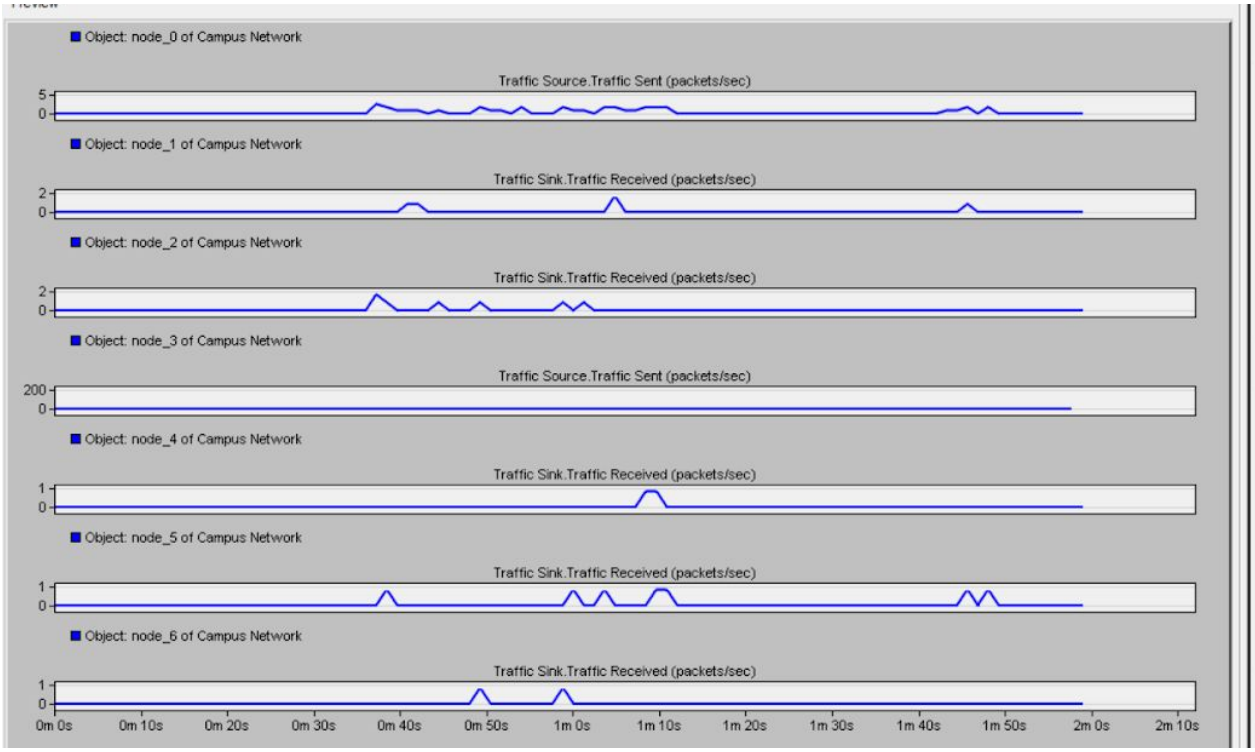
The packets received and sent by node 0 (a source). Clearly, the graph justifies the behaviour



The opposite can be seen in a sink (node 1)



Henceforth, the overall graph looks like:



Problem Statement 2:

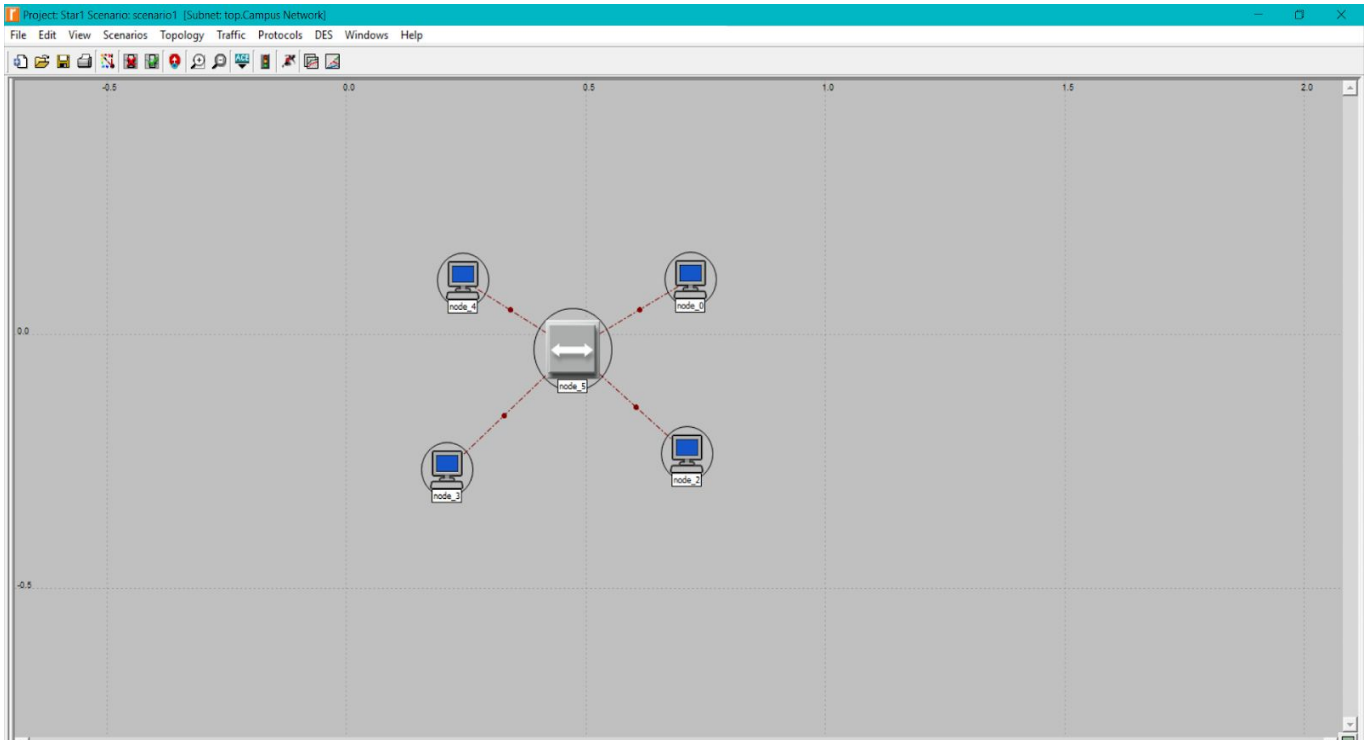
Using OPNET create Star topology among a set of N computer nodes out of which one node is the source and the rest are sink nodes.

Model the traffic of source and sink nodes individually and demonstrate the packet transfer

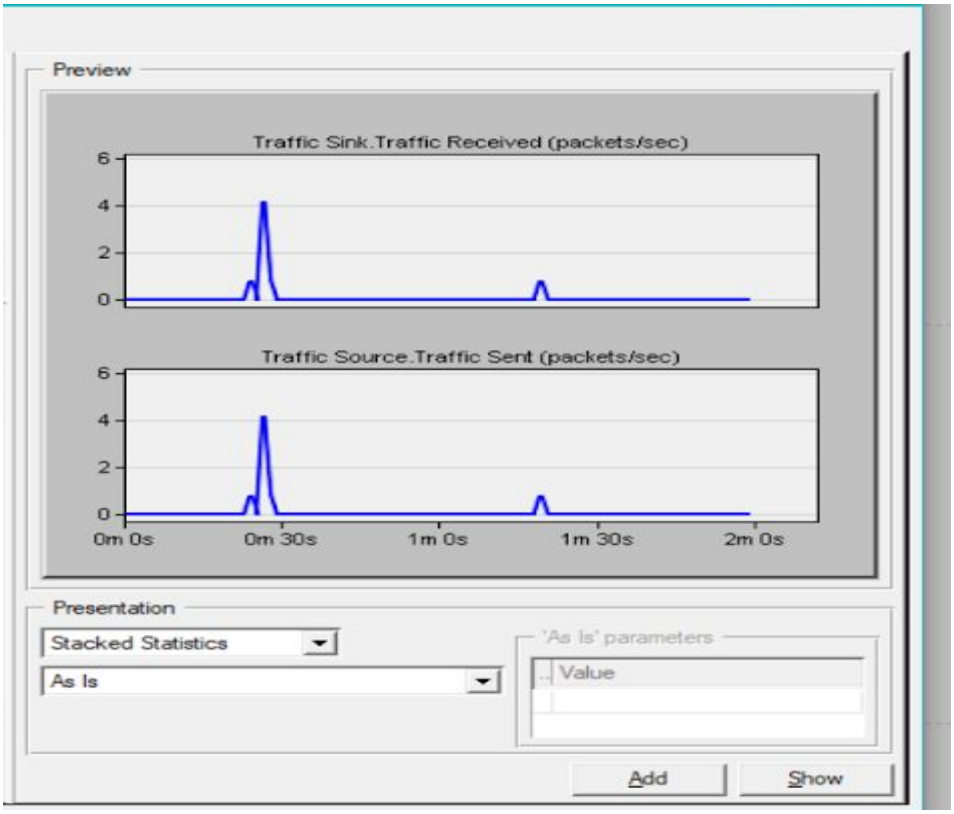
between them using Ethcoax (Ethernet using coaxial) cables. Use network scale as the “campus” of area 1km x 1km.

Solution

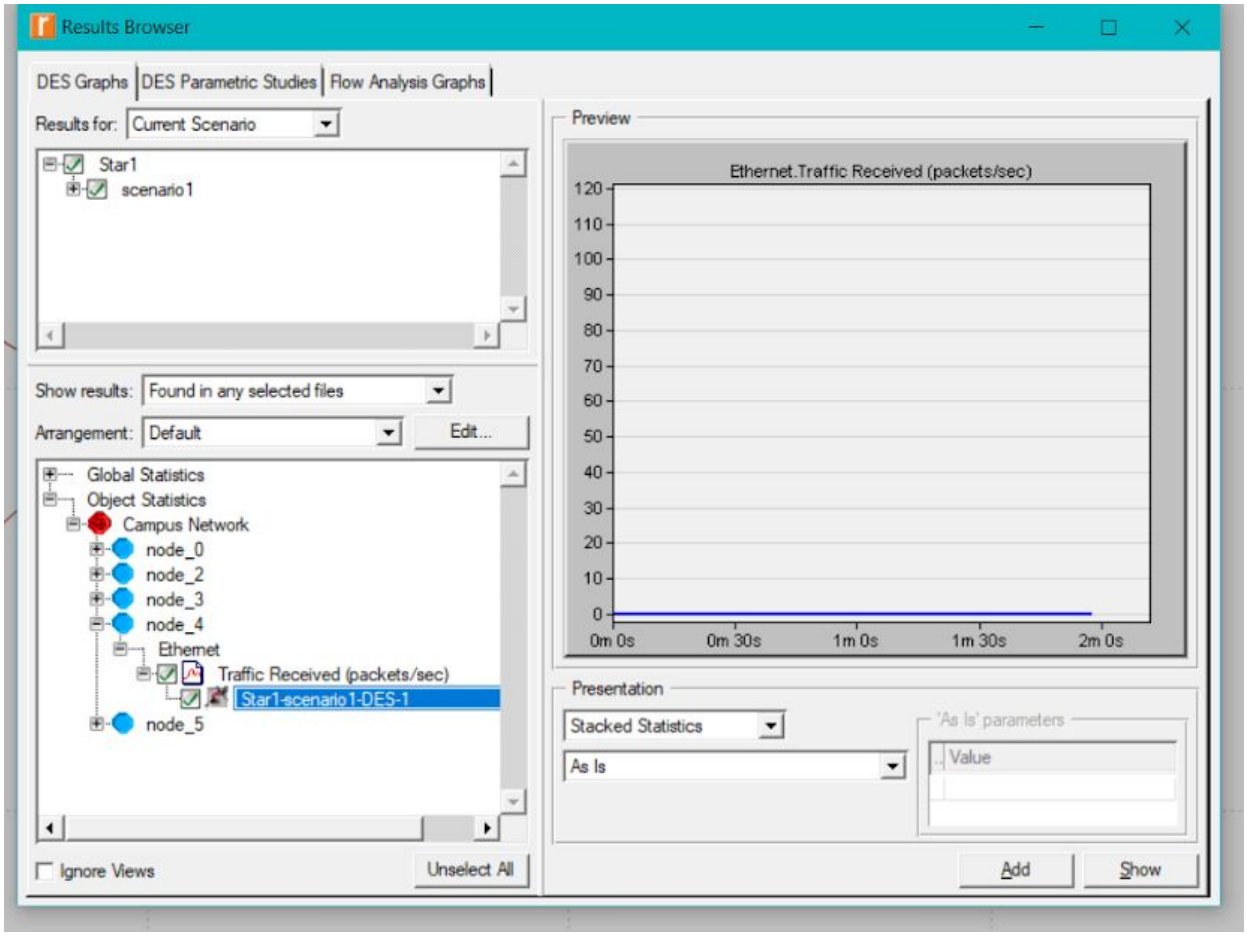
As instructed, it is a 5 node bus topology in the RiverBed network emulation. The nodes 5 serve as the central node of the star wheras node 4 act as a source and the rest of them as a sink



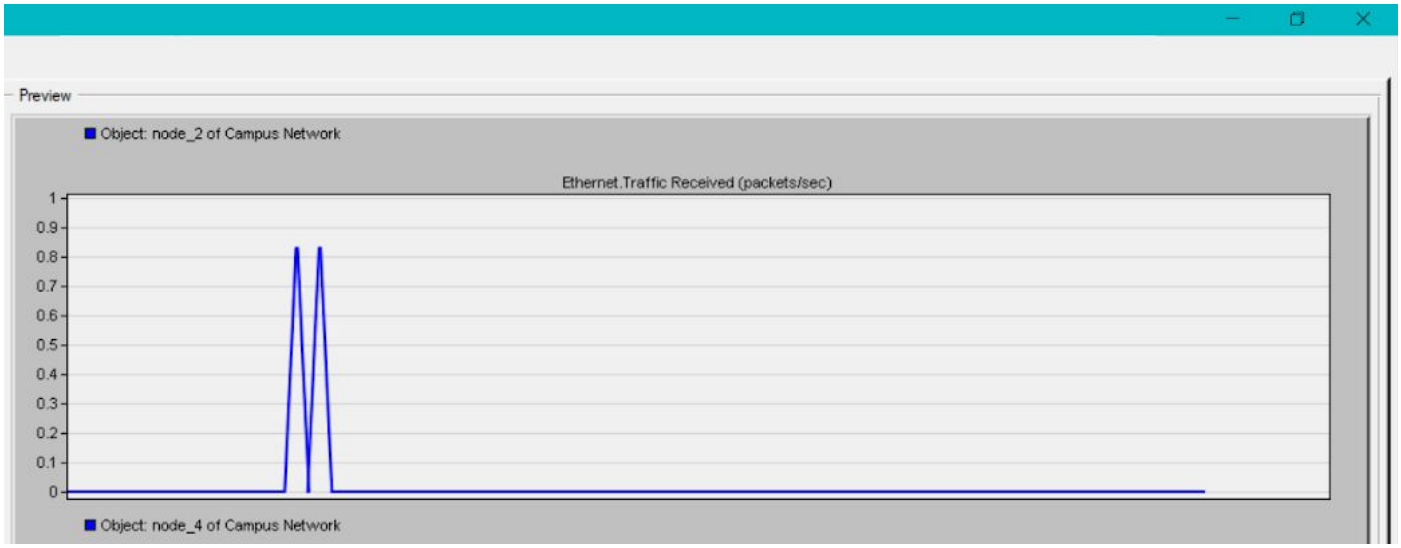
The global traffic sent and received graph



The graph for the packets received by node 4 (source) is flat



Whereas that of any other node is: (clearly showing sink behaviour)



The overall comparison graph: