In order to understand the behavior of the third assignment, a simple chart is made to view the router drop and delay effect on a file either being sent to or received from the server. The report will provide percentages ranging from 15, 35, and 50 percent. This assignment supports Go-Back-N protocol and will allow the user to choose the number of packets sent from 1 to 19 as the window size. However, this report will only provide 1, 7, 13, and 19.

This Go-Back-N protocol only goes back to the last NAKed packet and not resending the entire window making it an efficient protocol.

Note: The study of drop and delay percentages applied are not provided for this assignment.

The ratio, the total packets sent/original number of packets, for each drop/delay percentage will then be calculated to view the full effectiveness. The binary file to be sent is a png file which is 4564 bytes and requires minimum 58 packets with each packet carrying 256 bytes.

The chart will consist of both get/put directions used alternately with the file. The results displayed means using drop and window size, then the numbers signify total packets sent: ratio with total number of frames.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Drop/WS | 1 | 7 | 13 | 19 |  |
| 5 | 18:1 | 18:1 | 68:3.78 | 164:9.11 |  |
| 15 | 24:1.33 | 336:18.67 | 352:19.55 | 461:25.61 |  |
| 35 | 52:2.89 | 278:15.4 | 226:12.56 | 231:12.83 |  |
| 50 | 51:2.83 | 124:6.89 | 222:12.33 | 367:20.39 |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Delay/WS | 1 | 7 | 13 | 19 |
| 5 | 18:1 | 18:1 | 26:1.44 | 30:1.67 |
| 15 | 18:1 | 19:1.05 | 31:1.72 | 91:5.06 |
| 35 | 18:1 | 21:1.17 | 99:5.5 | 310:17.22 |
| 50 | 18:1 | 35:1.94 | 318:17.67 | 463:25.73 |

In conclusion we can see the difference the effectiveness between drop and delay. We can say that for the drop, regardless of what the window size is, there are still chances of losing a lot of packets therefore resending them again. This means if the window size is 1, it will take a longer time to send due to loss. On the other hand, the delay only affects the packets when there is an increase on the window size. If the window size is 1 then, delay is pretty much non-existent since it only affects window size of > 1. However we can see that there is a huge spike in the packets sent when the window size increases exponentially. We can say that handling delay is much easier and much more efficient when sending packets.