

Instructions

- **Submission platform:** The assignment has to be submitted on SLATE.
 - **Submission deadline:** The deadline for submission is Friday, 29th Nov 2019 maximum by 11.59 PM. To avoid any issues, please refrain from last mission submissions.
 - **Format:** Write referenced essays on each topic given. Answers should be in soft form only. Do not submit snaps of hand-written solutions.
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Question 01: (Minimum 1500 Maximum 2000 words)

Write detailed notes on the following topics related to IPv6:

1. Header format in IPv6.
2. Compare QoS and performance of IPv4 vs. IPv6
3. How is security in IPv6 accomplished (necessarily explain IPSec and the two types of packets and their header formats plus their security properties they achieve)?
4. How is translation between IPv4 and IPv6 done. Describe some possible strategies.

Question 02: (Minimum 800 Maximum 1200 words)

1. What is NAT traversal. Provide some examples (from the book) or internet that explains your understanding of NAT traversal.
2. Consider the diagram shown in the figure 1. Assume the router has four interfaces two of which are private interfaces and two are public. Considering NAT as the protocol for address translation, draw the NAT table(s) to show how it is possible for hosts with private IP(a) and private IP(b) to send 1 packet each to Server 1 and Server 2. Show the working in the form of table(s) and explain your working.

Question 03: (Minimum 600 words, Maximum 800 words)

What is “fairness” in the context of TCP congestion control algorithms. How does TCP Reno and TCP Vegas compare in terms of fairness? Design and describe two network scenarios:

- 1) having a good deal of fairness
- 2) where one congestion control algorithm outperforms/consumes greater network bandwidth in comparison with the other.

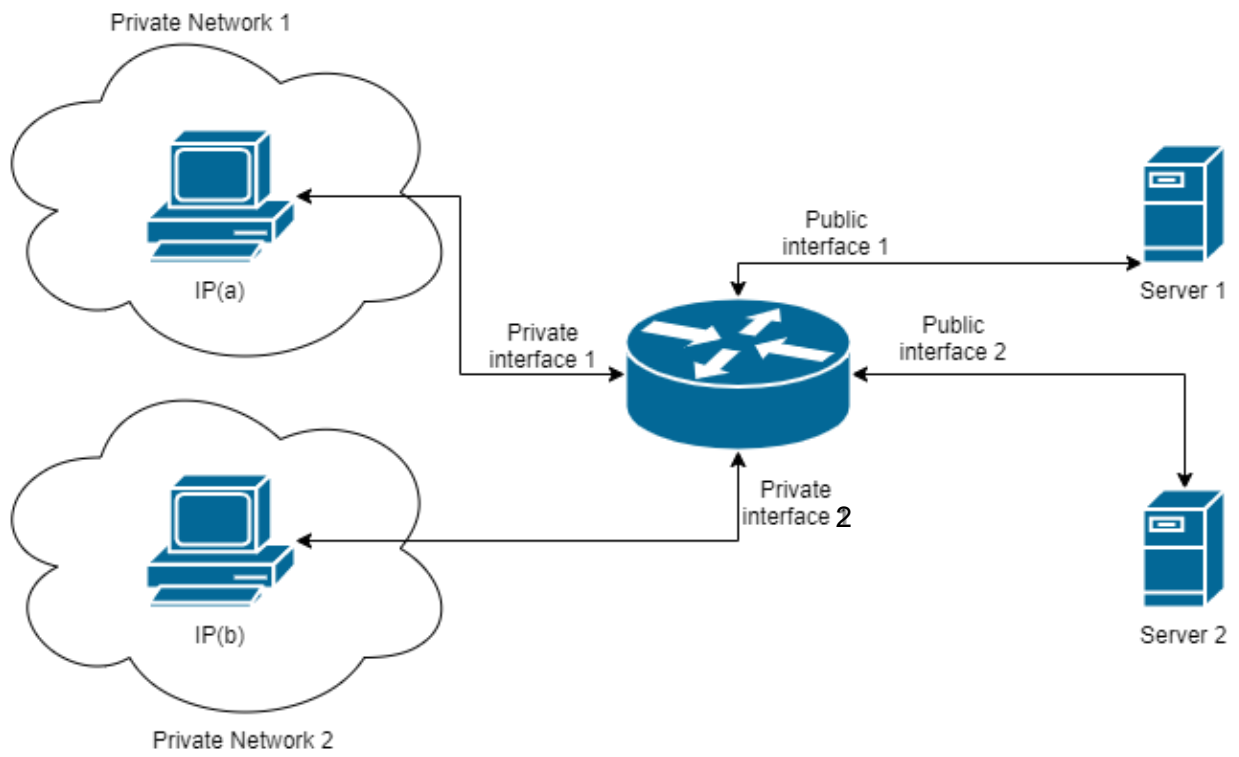


Figure 1