

Question 2

a) Distribution Scheme:

- The server sends the file to each client (in parallel) at a data rate of u_s/N .

Analysis. Note that:

- The scheme is feasible since the total upload bandwidth required by the server is u_s .
- Each peer can download at a rate of u_s/N (since $u_s/N \leq d_{min}$, by assumption). Thus, each peer will receive the entire file in NF/u_s units of time, as required.

b) Distribution Scheme:

- The server sends the file to each client (in parallel) at a data rate of d_{min} .

Analysis. Note that:

- The scheme is feasible since the total upload bandwidth required by the server is Nd_{min} ($\leq u_s$, by assumption).
 - Thus, each peer will receive the entire file in F/d_{min} units of time, as required.
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