DEPARTMENT OF INFORMATICS

TECHNISCHE UNIVERSITÄT MÜNCHEN

Master Practical Course
Computer Network Simulation

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Assignment 1
Part 2 - Results

Group 2

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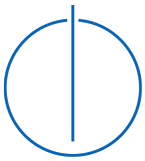

Summary and Interpretation of The Collected Data:

We ran our hypothetical messaging application for the inter-bunker communication on a bunker network in OMNeT++ for 300 seconds.

During the simulation, the following values are recorded as vectors:

- The number of successful lookup requests (that the server answers with a record) sent from the clients to the server.
- The number of unsuccessful lookup requests (that the server answers with a not found error) sent from the clients to the server.
- The varying packet sizes of the text messages that are sent among the clients.

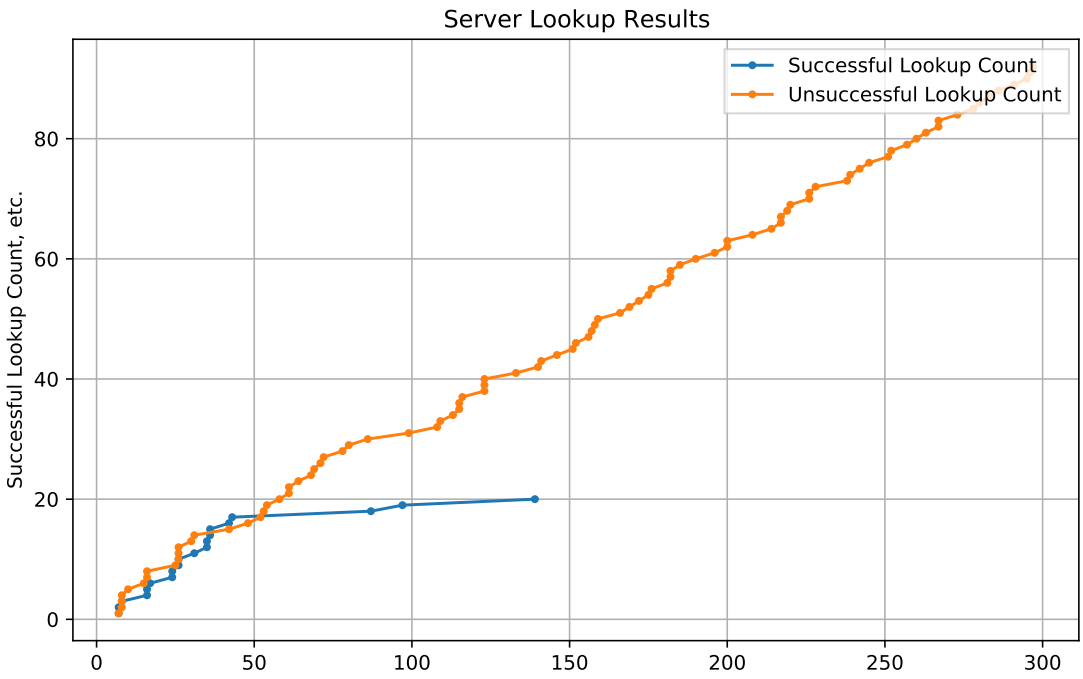

Figure 1: Server Lookup Results

Each host in the bunkers keeps a list of the people they are looking for. In addition, each host has an address book and they save the host they learn in these address books. To learn a host, they send a lookup message to the server. If a host knows all of the people that it is looking for, then it stops to send lookup messages and the whole system converges at a point in terms of sending lookup messages. However, to make it more interesting, we gave some names that are not exist in any of these bunkers to some of the hosts. Therefore, they keep looking for them until the end of the simulation. However, as we can also see in Figure 1, the number of successful lookup operations converges to a point and ends at a time since all hosts learns the people they can learn. There will be no more need to send lookup messages after this points.

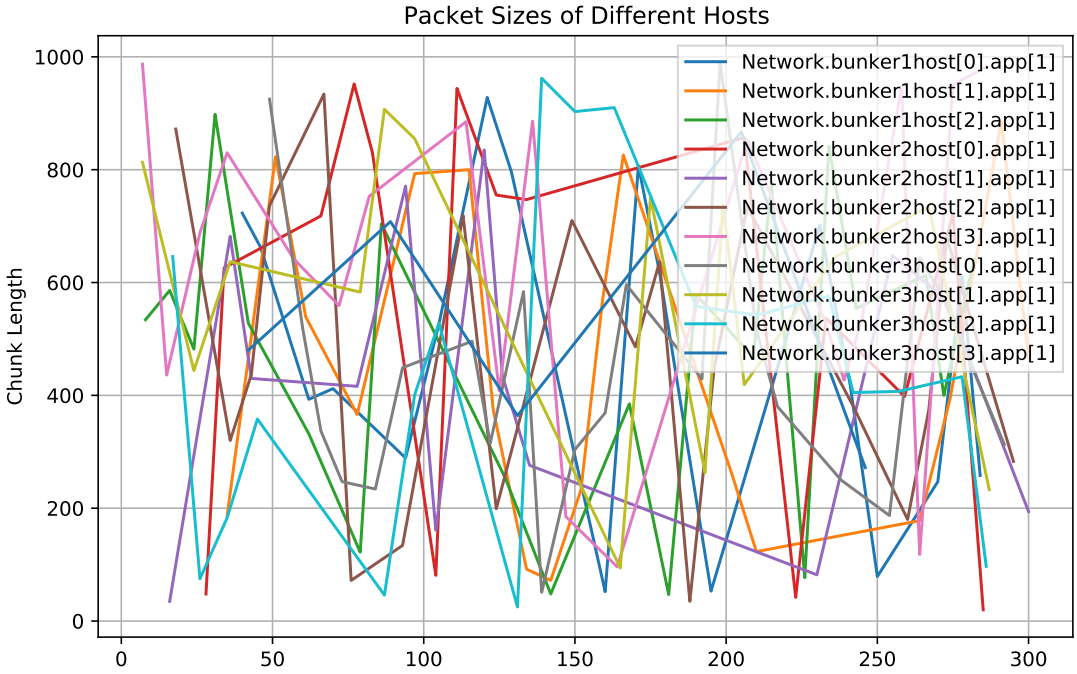

Figure 2: Packet Sizes of Different Hosts

The clients can send text messages to each other at random times with various lengths. We simulated this by using random sized packets for the text messages and we record these sizes every time a text message is created. These sizes can be also seen in Figure 2.