

Noah Daniels 026466906

Nathan Wolski 025908868

Our design is based in docker, meaning that we used containers instead of vms to create our distributed system. To create the broadcasting and multicasting protocols for our system, we used 4 total dockerfiles, one to create sender and then one for the receiver in both protocols. We used python scripts for broadcasting and multicasting receivers and senders which are executed in the dockerfiles. These dockerfiles act to create images which are then run on the host system. We used a docker composition file to specify the ports and configurations of our 5 servers (nodes) as well as their corresponding image. When run, the composition file deploys the multi-container application, and data is broadcasted from server 1 to servers 2 and 3, and multicast from server to server. We used a logging function written in python to keep track of relevant information and statistics which is placed in a text file for record. We could not get the logging function to provide the output after hours of troubleshooting, but the network still deploys just fine, as we can see in docker desktop statistics. When deployed, the application is then displayed in docker desktop where you can view images and the files they contain.