Outputs:

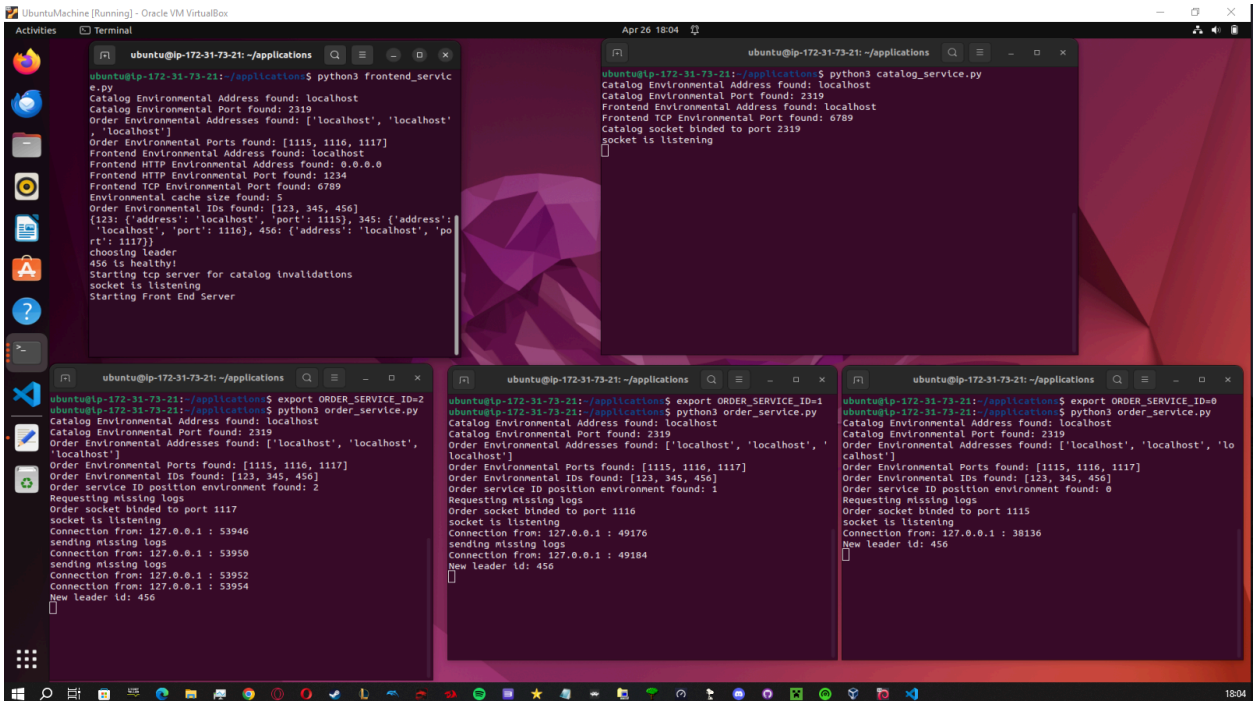
These outputs are generated from a Ubuntu virtual machine which has used an SSH connection to connect to the AWS machine. Each terminal is using the SSH connection to access and start the Frontend service, the Catalog service, and the Order service replicas.

The Ubuntu machine screenshots are organized as:

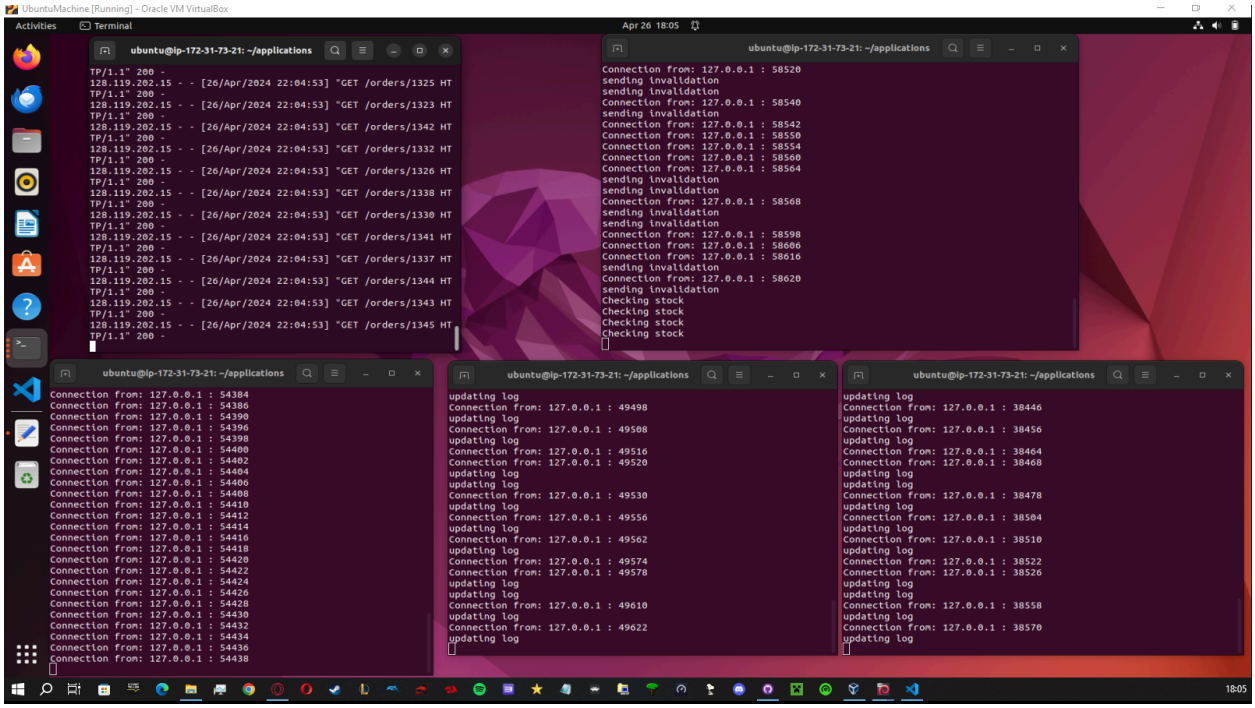
Top Left: Frontend service. Top Right: Catalog service. Bottom Left: Order service replica ID 456. Bottom Middle: Order service replica ID 345. Bottom Right: Order service replica ID 123.

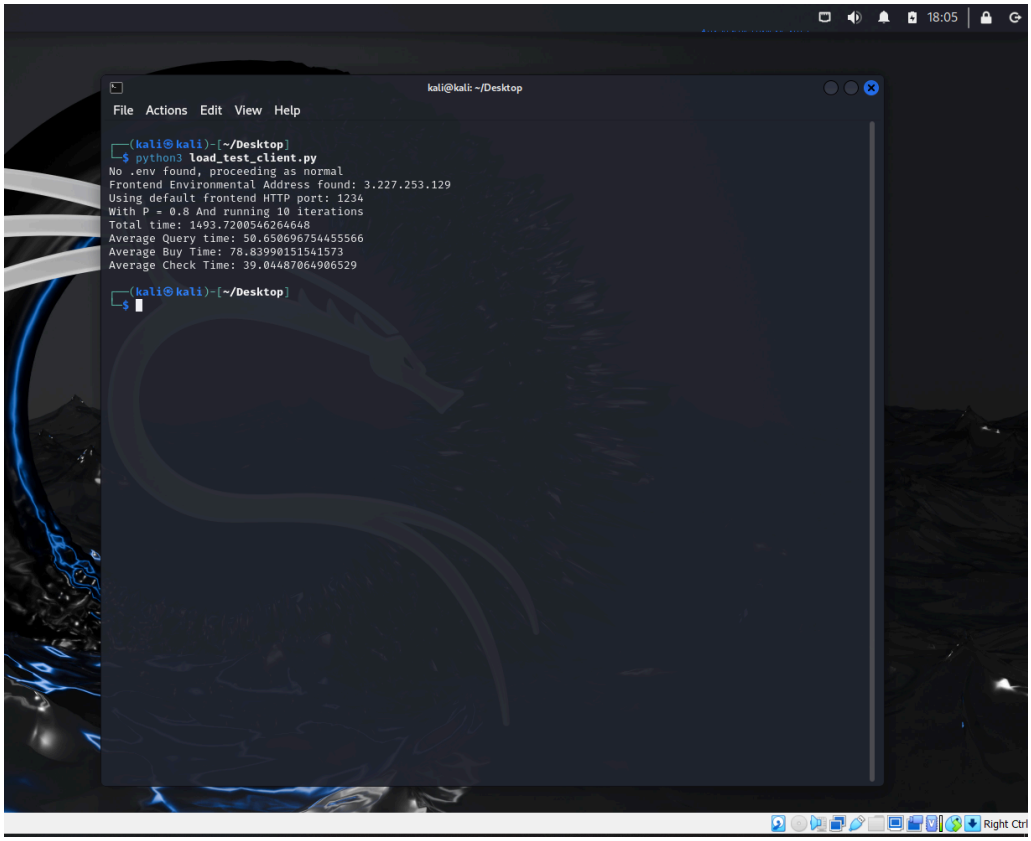
The client is run on a Kali Linux virtual machine and the client is connecting to the AWS server.

After connecting by SSH to the AWS server, Initializing the services on the AWS server:

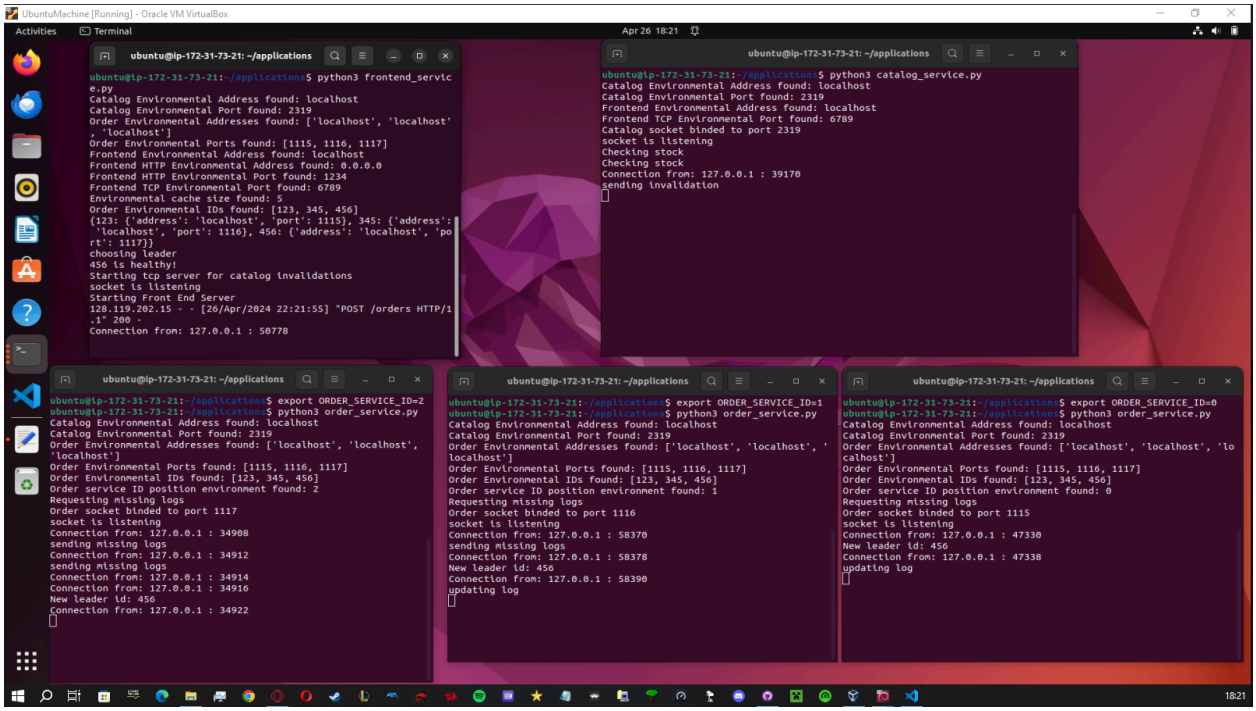


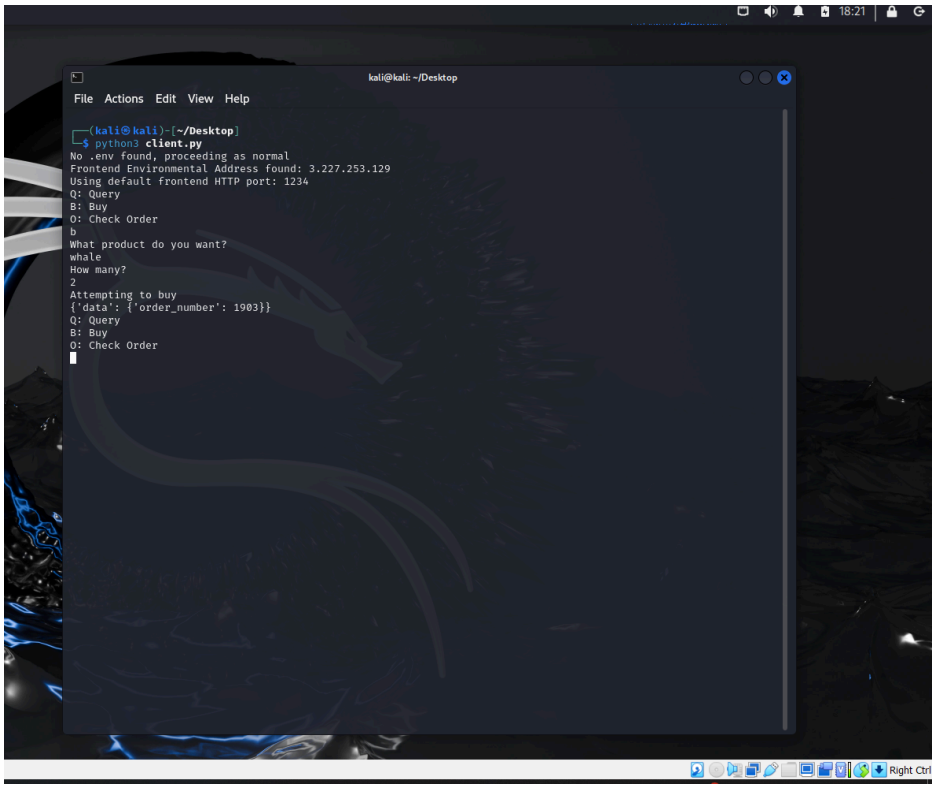
Under normal conditions with the services running on AWS performing the load test client:





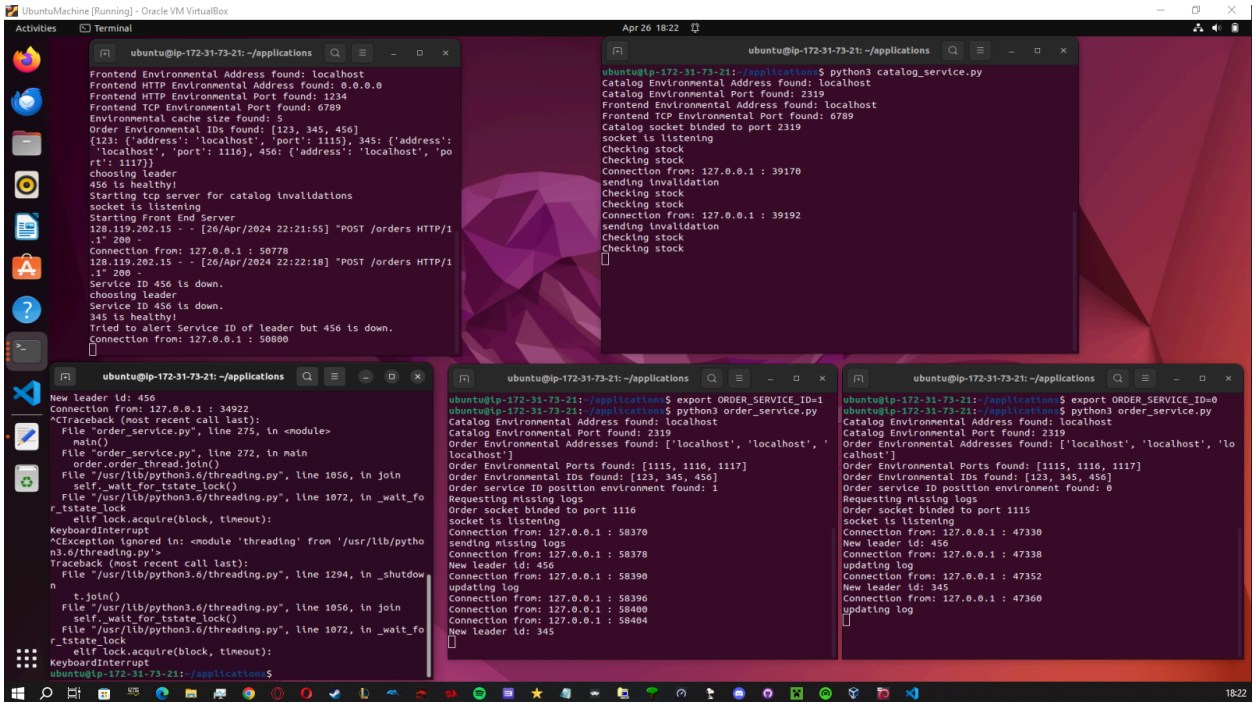
Using the Human version of the client to see transparency. Placing a normal order. Notice the catalog service sending the cache invalidation to the frontend for that order:

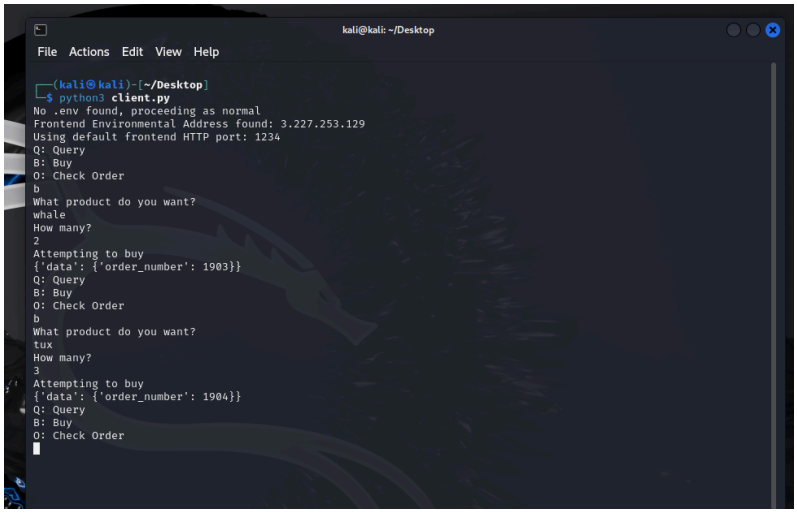




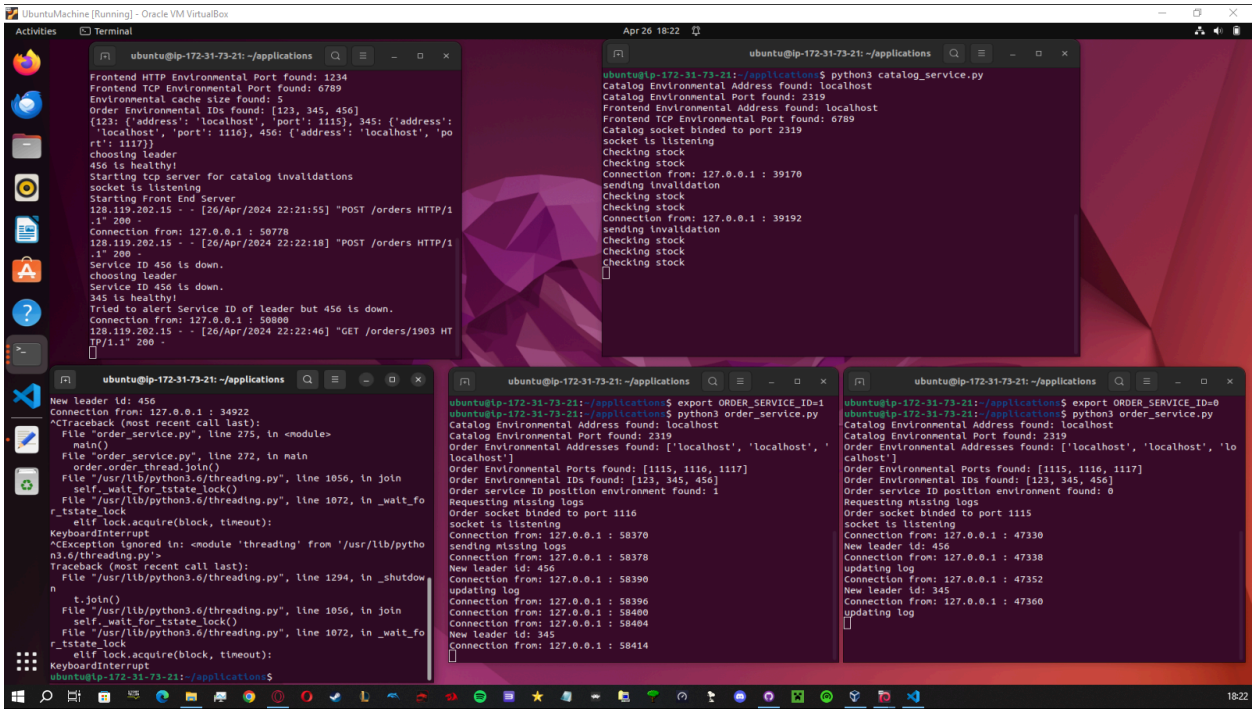
Killing the lead order service (bottom left) and attempting to place another order.

You can see the new leader election process happening in the services, and the client never sees the downed replica:

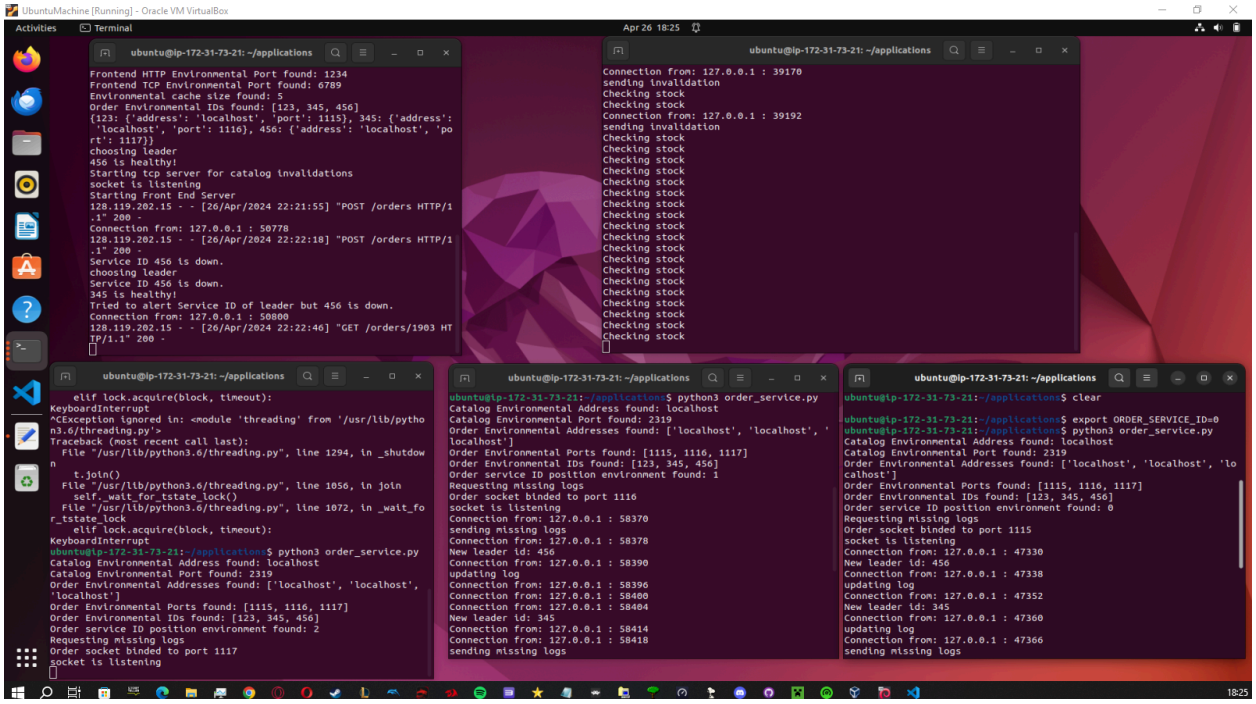




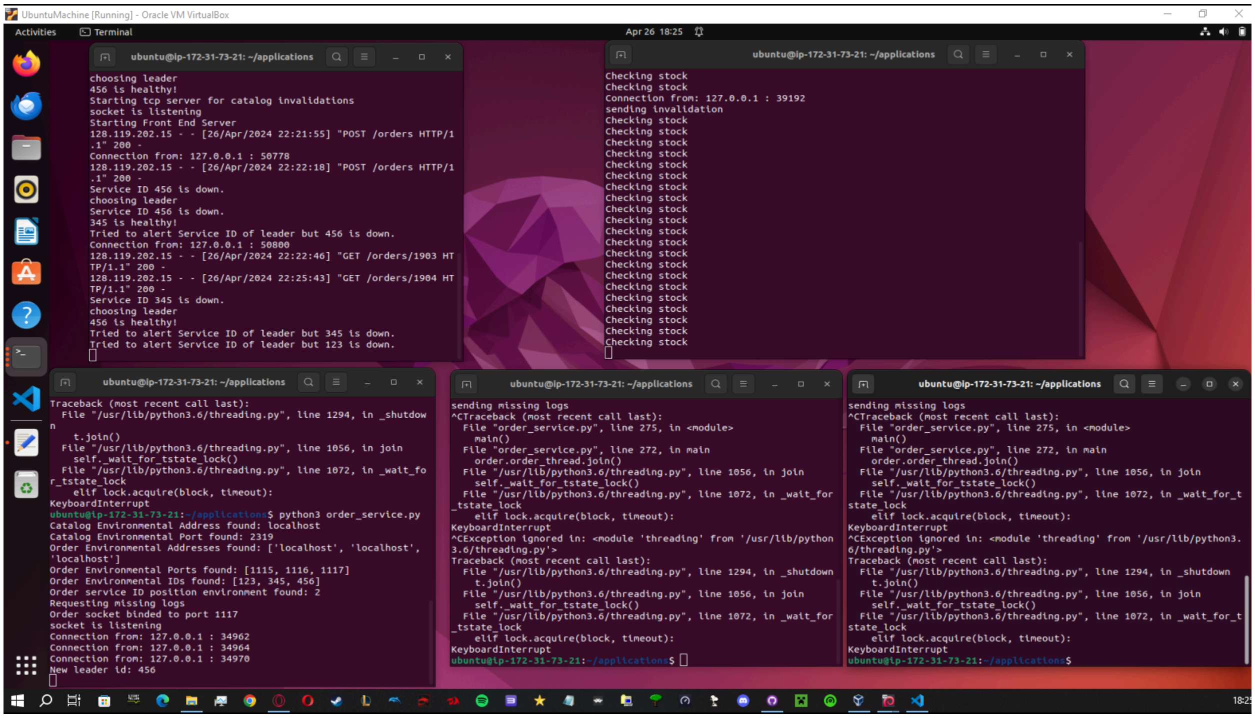
With the original leader that processed order #1903 still down, check the order and see if the new leader kept up with the orders. Looking at the client you can see the response from the check order returns the same information as the order placed, despite the leader that originally processed the order being down:

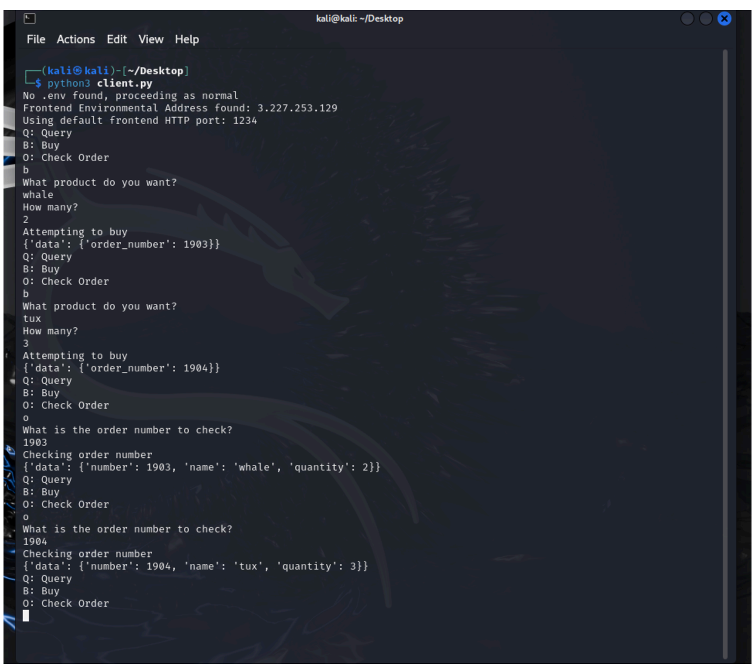


Restarting the downed order service (bottom left) to see that it successfully requests the logs from the other replicas, see the other replicas (bottom middle and right) sending the missing logs:



Kill the two order services (bottom middle and right) that were up and serviced an order while the original leader (bottom left) was down. Then performing an order check on the client to see that restarting the original leader successfully received the logs it missed while down:





Looking at the order logs for each order service replica we can see that all have the same order logs: