`bullhorn` Design

`bullhorn` contains program pairs for networked communication. Included methods are pub/sub and broadcast.

pub/sub

pub/sub allows messages to be sent from publishers to subscribers.
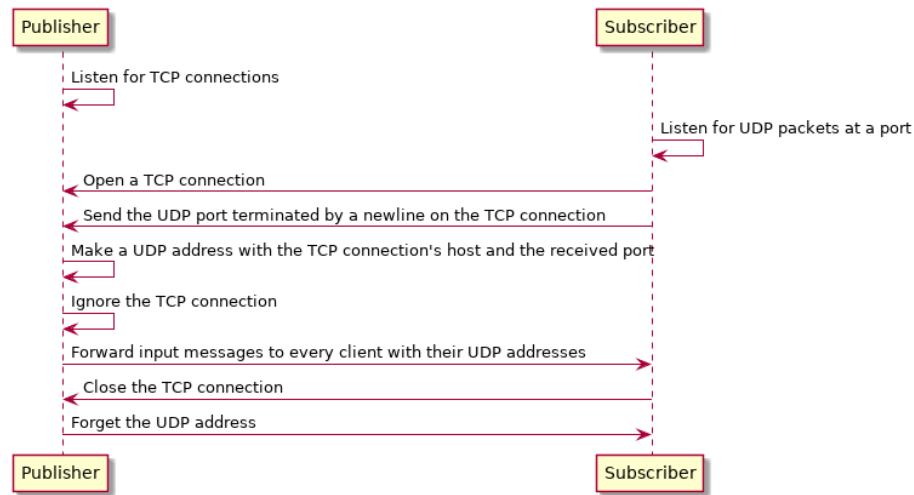

Figure 1: Sequence Diagram

This is done via a pub/sub system which operates over UDP with a TCP trunk. The TCP trunk allows the publisher to know when to stop publishing to subscribers and lets the subscriber know when it needs to try to reconnect to a publisher if reconnect is enabled. The unreliable UDP connection is fine because mostly periodic statuses are sent through the system.

The publisher will publish all newline-separated lines it receives over STDIN to every subscriber until STDIN is closed.

The subscribers print all newline-separated lines they receive from the publisher until the publisher is closed if reconnect isn't enabled. Subscribers never close if reconnect is enabled and will just periodically attempt reconnects. Subscribers will always exit with a failure to connect unless terminated because they will either try to reconnect forever or fail to connect to a terminated publisher.

broadcast

broadcast messages to all clients.

This is done via the broadcast address.

The server will send all newline-separated lines it receives over STDIN to every client until STDIN is closed. The clients print all newline-separated lines they receive until they are terminated.