**Networks Project – Low Latency Packet Processing Simulation**

**Proposal:**

Due to an interest in Algorithmic trading and specifically High Frequency Trading, I have an interest in simulating low latency network systems. We discussed the idea of packet processing through the use of a raw ethernet packet simulator. I plan to simulate the processing of these packets, and compare the latency to a less optimized approach.

**Current plan**:

The current plan is to run two virtual machines running linux ubuntu images. On machine A, I will run the raw ethernet packet receiver, which will receive the packets being sent to its virtual ethernet port and parse the metadata from the header. On machine B, I will run the raw ethernet packet sender, this driver will loop through and continue to send an array of ethernet packets to the MAC address of machine A.

**Resources:**

<https://austinmarton.wordpress.com/2012/06/03/receiving-raw-packets-in-linux-without-pcap/>

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<http://www.tcpdump.org/manpages/tcpdump.1.html>

<http://www.brianlinkletter.com/how-to-use-virtualbox-to-emulate-a-network/>

Machine A

* Base memory: 2048mb
* Operating System: Ubuntu (64-bit)
* Processors: 2
* NAT MAC: 08:00:27:F5:52:B8
* Internal network MAC: 08:00:27:A0:60:3B
* Ethernet adapter to NAT: esp0s3

Machine B

* Base memory: 2048mb
* Operating System: Ubuntu (64-bit)
* Processors: 2
* NAT MAC: 08:00:27:76:74:35
* Internal network MAC: 08:00:27:0C:84:C2
* Ethernet adapter to NAT: esp0s3