Note: The following will not work through the campus firewall. I spun up a google compute instance and installed scapy and things worked fine. Google compute micro instances are free for 700+ hours per month. If you turn them off when you aren’t using them, you shouldn’t need to worry about getting charged. The videos found here could help if you are stuck.

TCP Handshake

Write and execute the code that will perform a three-way TCP handshake to [packtpub.samsclass.info](http://packtpub.samsclass.info) with a destination port of 40001. Here is some code to get you started (it generates the 3 way handshake):

```python
#!/usr/bin/python
from scapy.all import *

conf.L3socket = L3RawSocket

i = IP()
i.dst = "cit.dixie.edu"

t = TCP()
t.dport = 80
r = sr1(i/t)
t.flags = "A"
t.seq = r.ack
t.ack = r.seq + 1
p = i/t
reply = sr(p)
```

You will probably have to disable RST packets by doing something like:

```
sudo iptables -A OUTPUT
sudo iptables -A OUTPUT --tcp -s 144.38.199.108 --tcp-flags RST RST -j DROP
```

Send an 8 character code as raw data. (Probably not your last name). You should be able to see if you succeeded by visiting this site. No more than 8 characters.

Firewalking

Modify your previous code so to send to destination port of 40002 on the previous server. Your packet should arrive with a TTL of 1 to the destination. HINT: This is very easy and should only necessitate adding a single line of code to the previous one. You will probably also make use of the traceroute program. You should be able to see if you succeeded by visiting this site. Write a short paragraph on what TCP firewalking is.

To Submit

- Tell me what code you submitted to the website. Also upload your code.