Evaluation of MPTCP on PRAGMA-ENT

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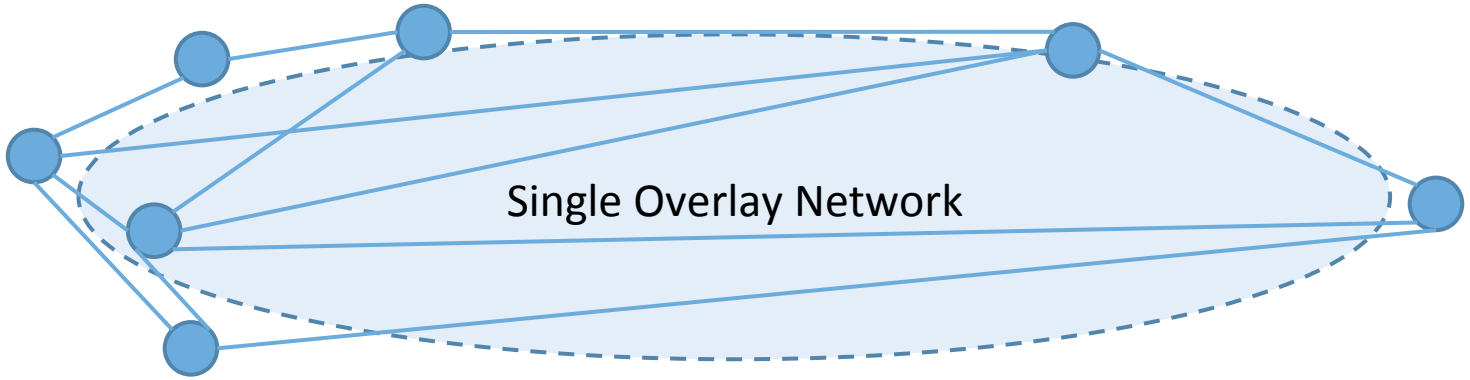
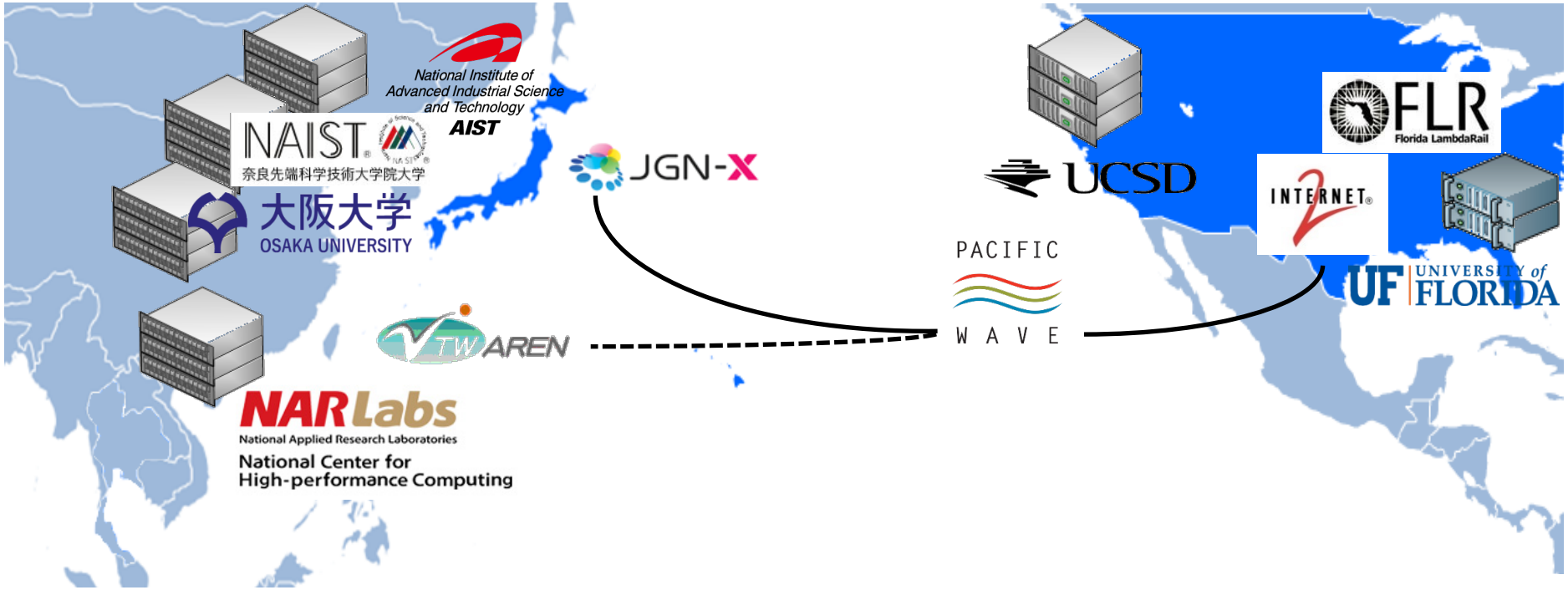
Laboratory for
Software
Design & Analysis

established in 2005

From the Lightning Talk

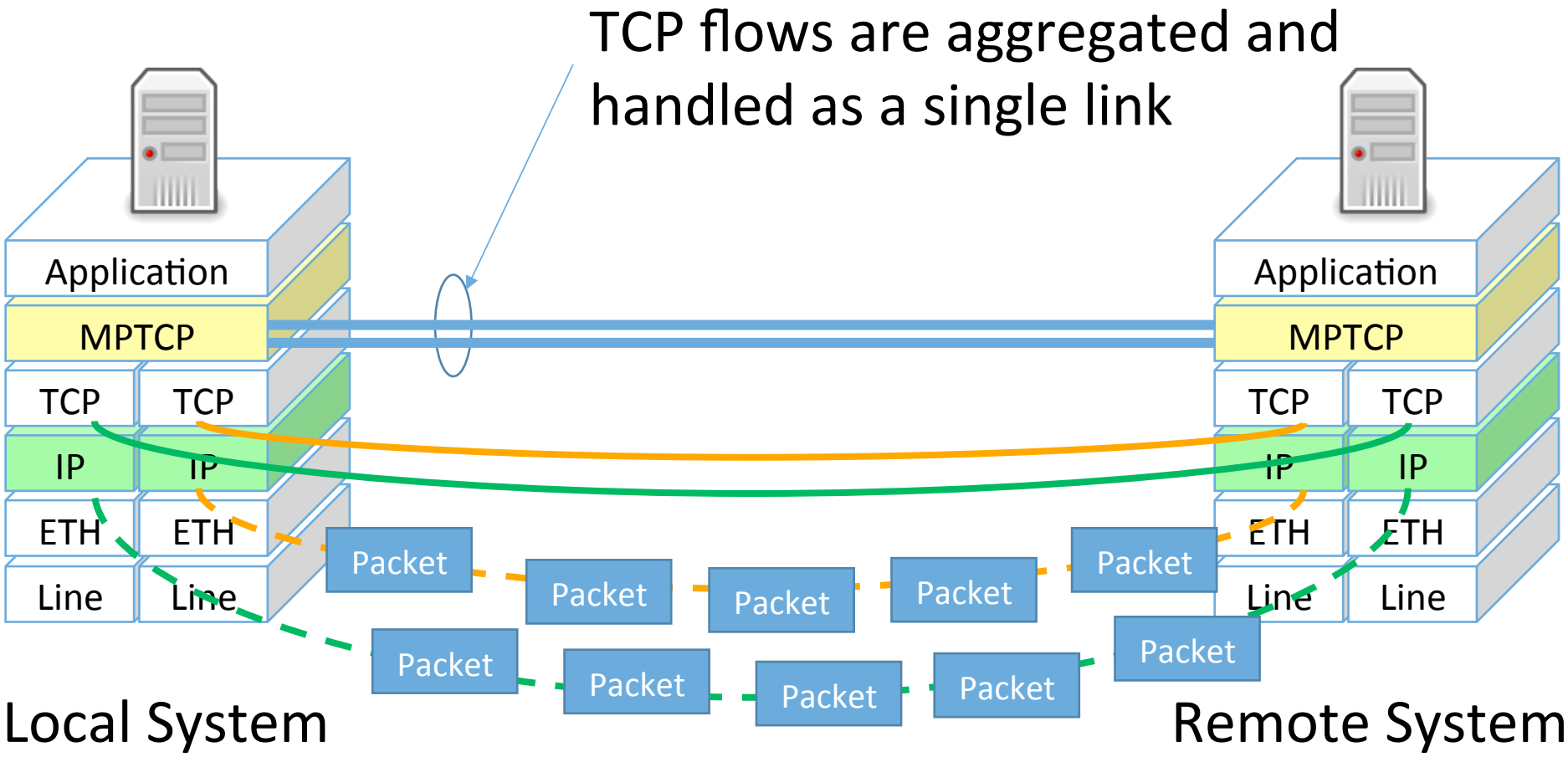
What is PRAGMA-ENT?





From the Lightning Talk

What is MPTCP?



Why MPTCP?

Then I have to manage both sockets manually. Put 100 bytes in sock1, another 100 bytes in sock2 …

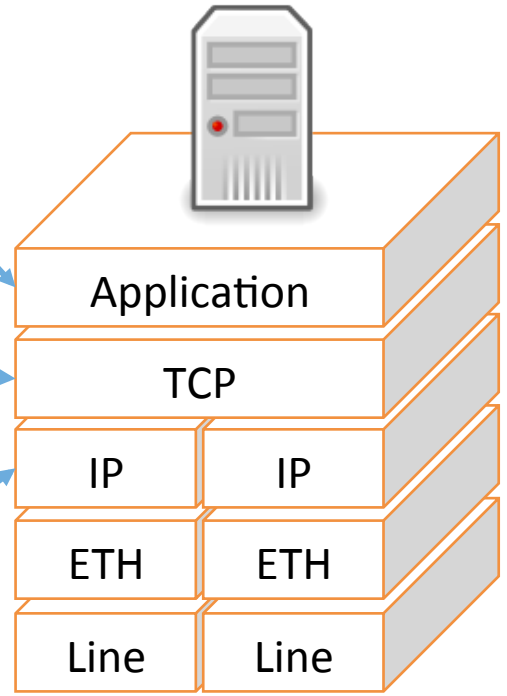
Manage sockets from apps

```
sock1 = socket.new()
sock2 = socket.new()
```

"MPTCP"

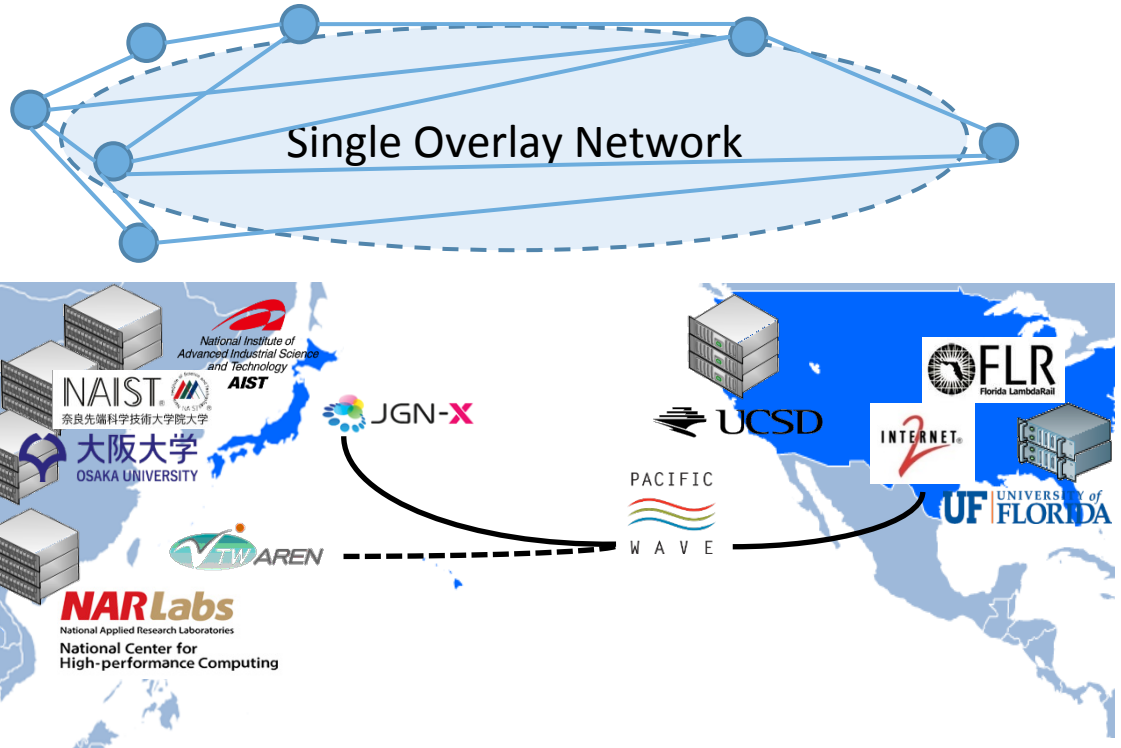
The WAN environment is unfortunately not equal-cost. Packet may arrive out-of-order and prompt TCP to retransmit.

Equal-Cost Multipath (ECMP)
Packet 1 => route 1
Packet 2 => route 2
etc.

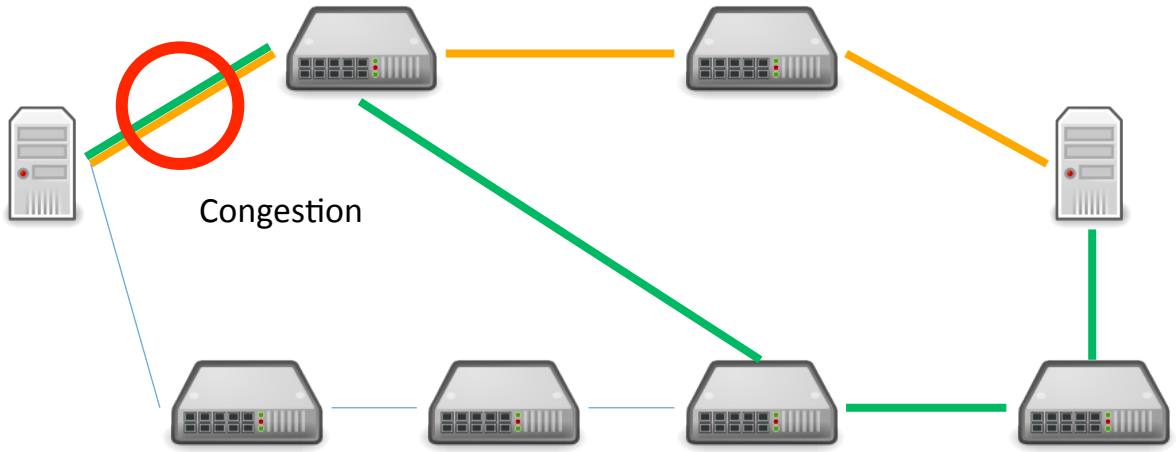


Then why PRAGMA-ENT?

- Because it's Big: WANs work differently from LANs
- Because it's SDN: Easy to try out routing mechanisms & protocols



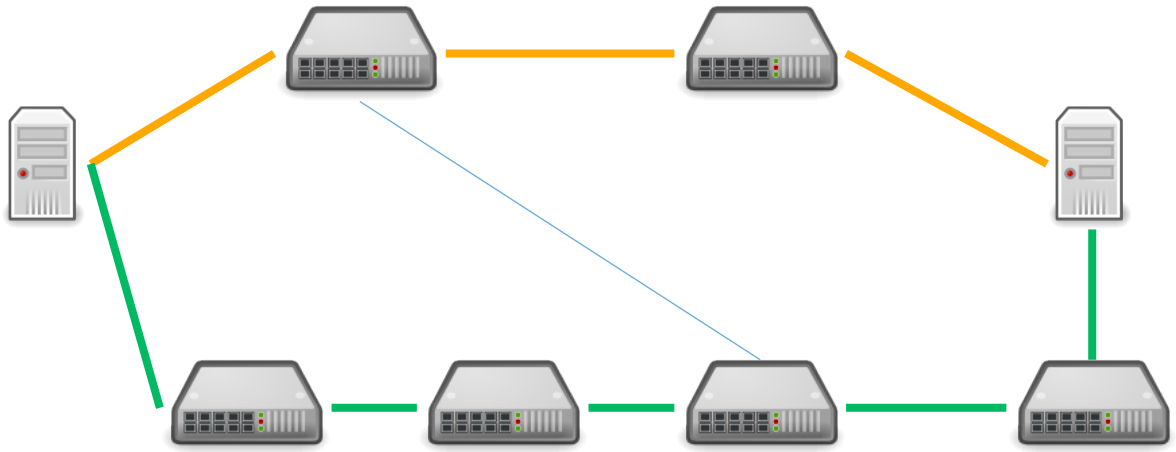
Conventional routing may behave less than optimally with MPTCP



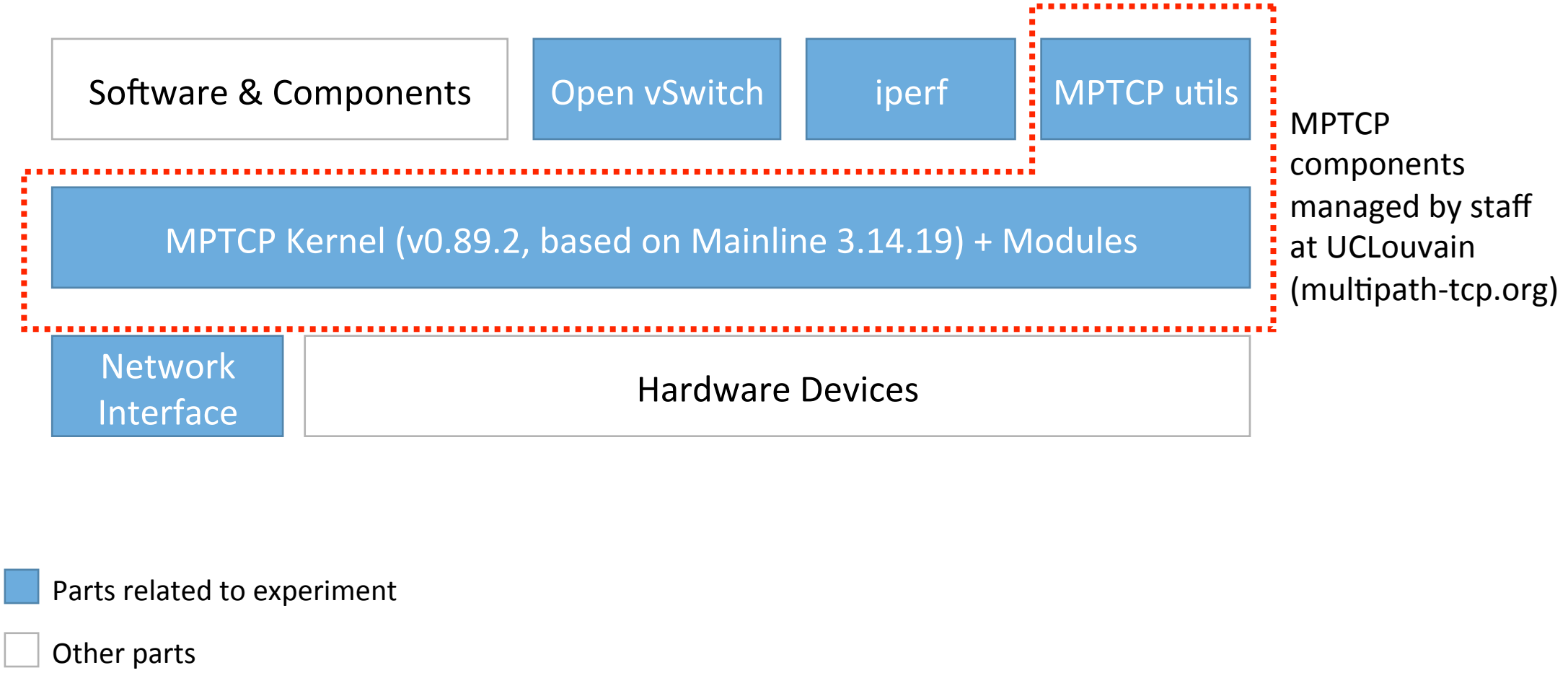
(assuming we use “minimum hops” routing and don’t use “exact same” route twice)

This is a solution. But how can we make this automatic?

- We'll find out later.



Basics of MPTCP Kernel



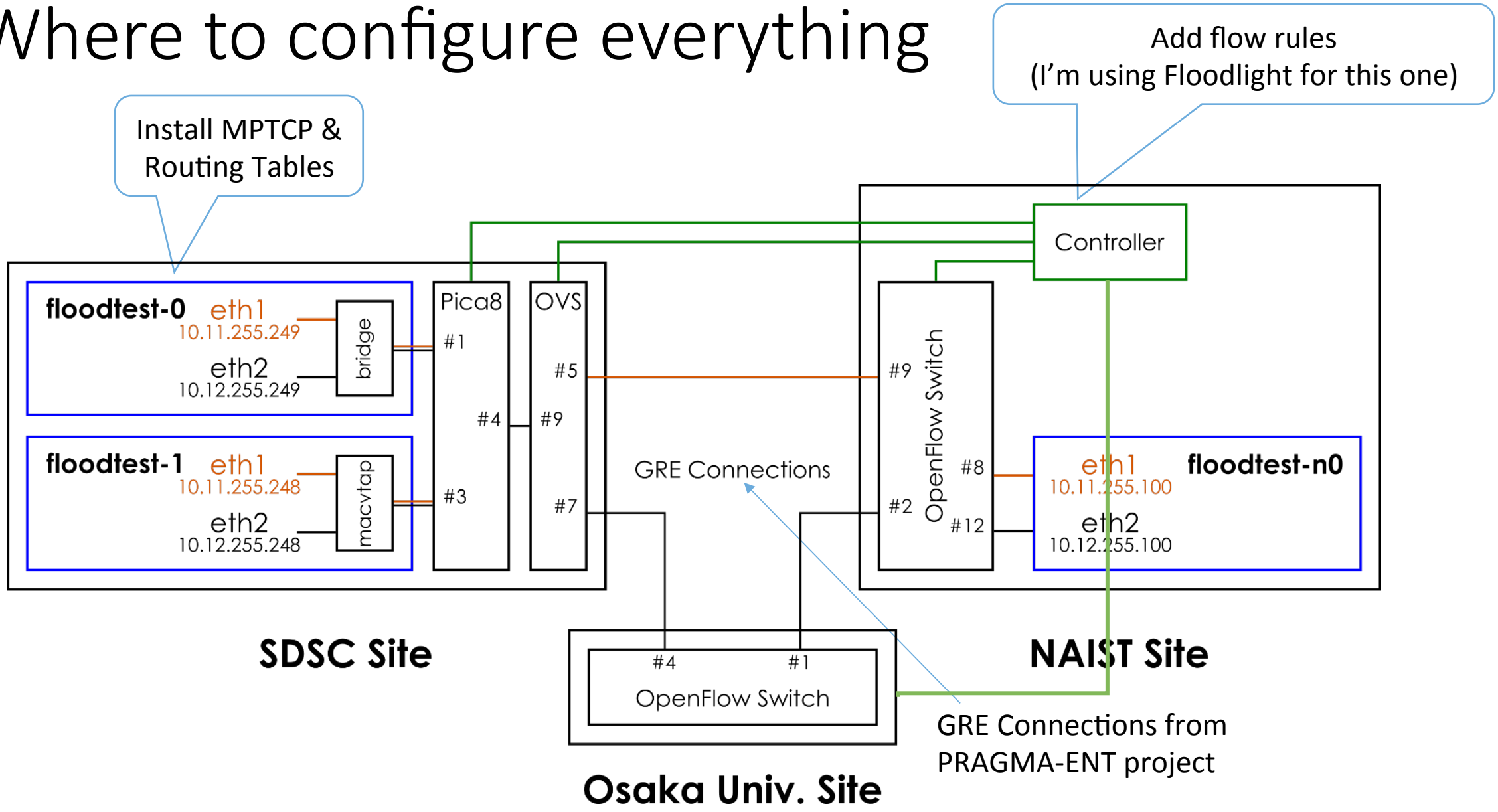
What must be done to set up MPTCP?

- Compile Kernel
- Set up routing tables
  - Must use multiple routing tables
- Install additional
  - Specialized version of net-tools, tcpdump, etc. allow you to play with more options
- Enjoy!

Do I look like a world-renowned book author now?
Seriously, the book is worthless. Get it here ➔➔➔

http://goo.gl/PpPqBb

Where to configure everything



Live Demo

Rules:

1. Please tell me if I’m too fast.
2. Murphy’s Law may be in effect. I’m actually sharing the network with the previous and the next guys.

Verifying settings

- dmesg | MPTCP; ip rule show; ip route show table 1