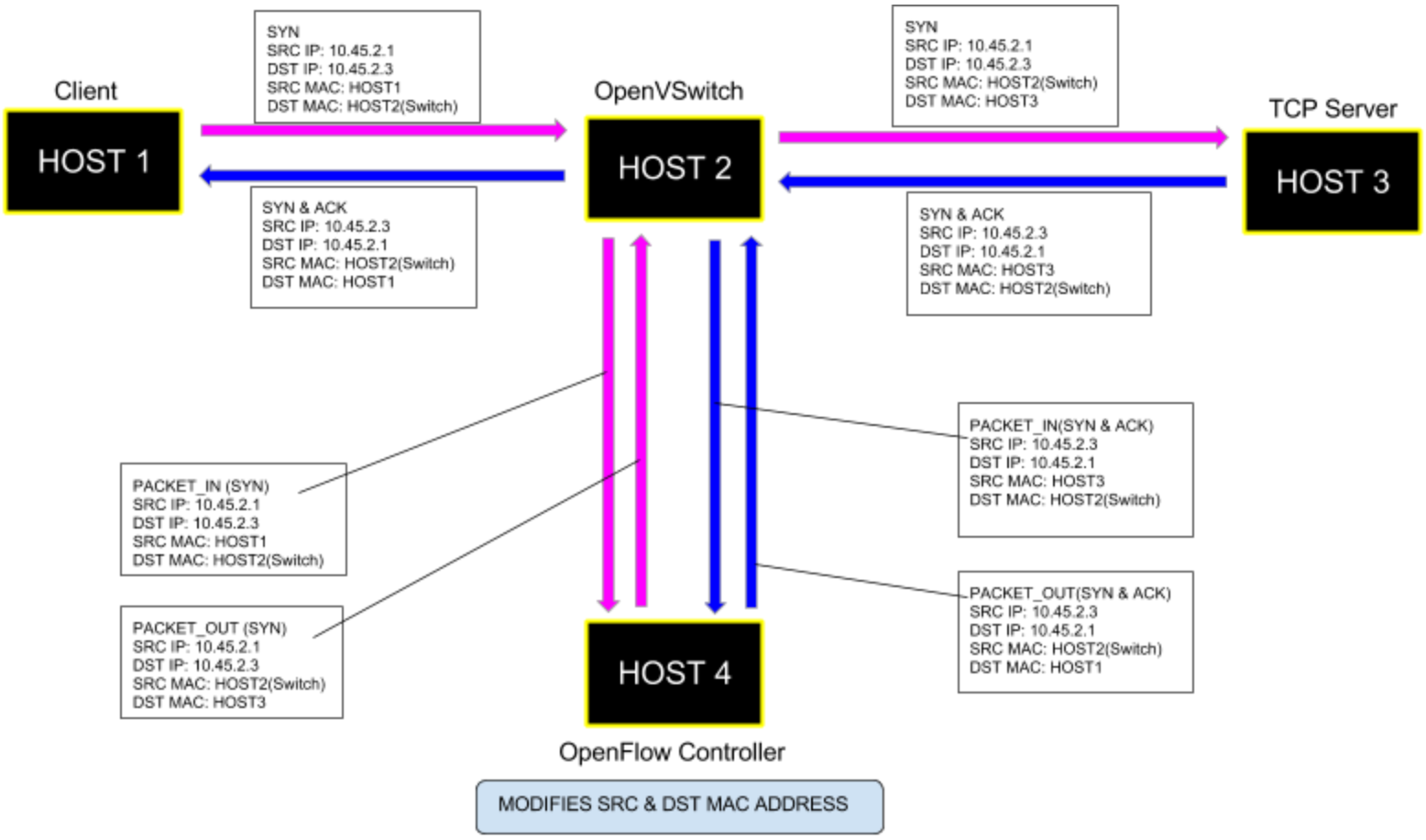
TIMING ANALYSIS - TEAM 2



The timing overhead of openflow architecture mainly come from packet inspection and modification.

The IPv4 forwarding is also called kernel IP forwarding. When a packet comes in one network interface matches a subnet of another network interface, the kernel then forwards the packet to the other network interface. All done in kernel space, which means it's super fast.

However, for openflow architecture to work, kernel to userspace latency, network transportation latency, java module flow modification latency are added. Kernel of Host 2 has to first pass the packet to openvswitch user-space daemon process. Then openvswitch send the packet to openflow controller with PACKET_IN signal. Then the gatewayController module will capture the packet, lookup the mac addresses of destination IP address from hash table, then modify the source and destination mac address of the packet. After that, the controller will send out the modified packet with PACKET_OUT signal back to the switch, adding network transportation latency. After the switch received packet, it have to send out the packet to the destination.