

# October 6th, 2015 Pre-Class Questions

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## Question 0

How much time did you spend on this pre-class exercise, and when?

I started these pre-class exercises the night of October 5th.

## Question 1

What are one or two points that you found least clear in the 10/06 slide decks (including the narration)?

I didn't understand the bullet point on the slides about wormhole routing and cut-through

## Question 2

(a)

With the CS5220 module, the `which mpicc` command returns

```
/usr/local/intel/impi/5.0.3.048/intel64/bin/mpicc
```

With this version of MPI, I get timings of 5:11 for `ping-2chip` and 1:24 for `ping-2core`

(b)

The `which mpicc` command now returns:

```
/share/apps/openmpi-1.10.0-icc-15.0.3/bin/mpicc
```

Which we see is a different version of the compiler.

The `ping-2core-ompi.pbs` and `ping-2chip-ompi.pbs` files failed to run correctly for me.  
I will look at this again after class

(c)

If I understand `ping.c` correctly, it times 100000 message exchanges. Since the time we got for running it on 2 cores was 84 seconds, we get that it takes  $84/100000 = 0.00084$  seconds for a message exchange.

In this time, 2 cores could compute 32 double precision floating points per cycle, and at a base frequency of  $2.4GHz$ , we get that the 2 cores could compute

$$(0.00084 \text{ seconds}) * (32 \text{ flops/cycle}) * (2.4 * 10^9 \text{ cycles/second}) = 64512000 \text{ flops}$$

Which is much higher than I expected, so maybe I am calculating something wrong.