

● Leveraging HPX on a Raspberry Pi Cluster

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● Background

○ What is HPX?

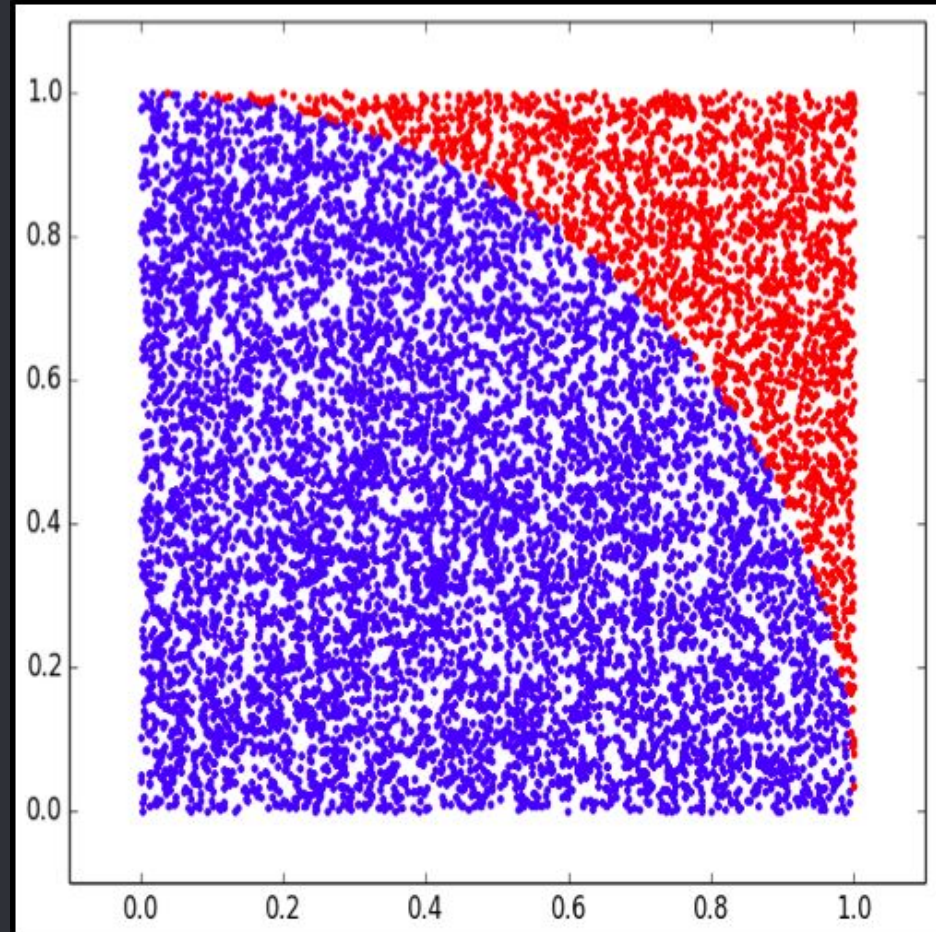
○ What was my project?

○ How might my project contribute to HPX?

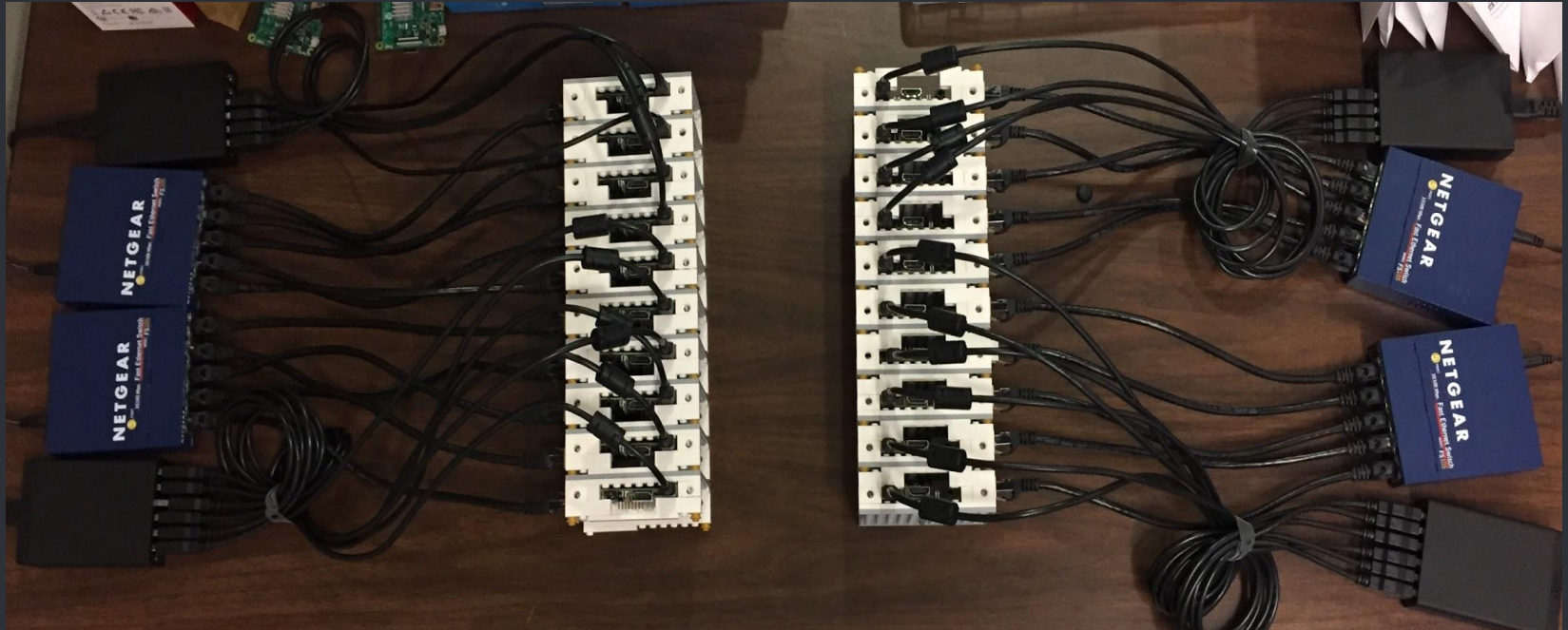
● Process

- Write a serial Monte Carlo C++ application.
- Build HPX on a Raspberry Pi.
- Parallelize the Monte Carlo application with HPX.
- Assemble a Raspberry Pi cluster.
- Modify the parallel application with HPX to run distributed across the nodes of the cluster.
- Test the scaling of the parallel and distributed applications.

- Process



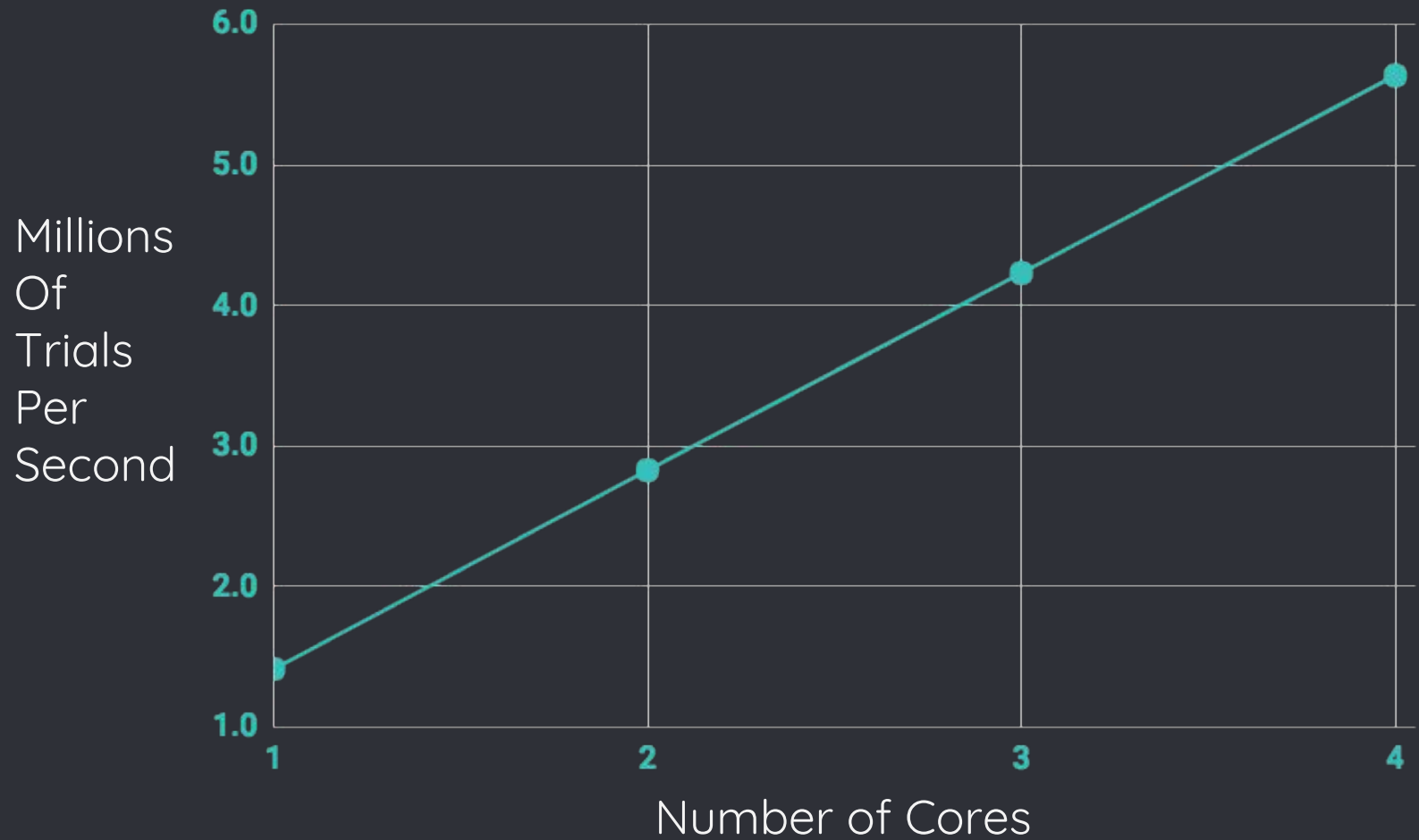
- Results



- The cluster!*

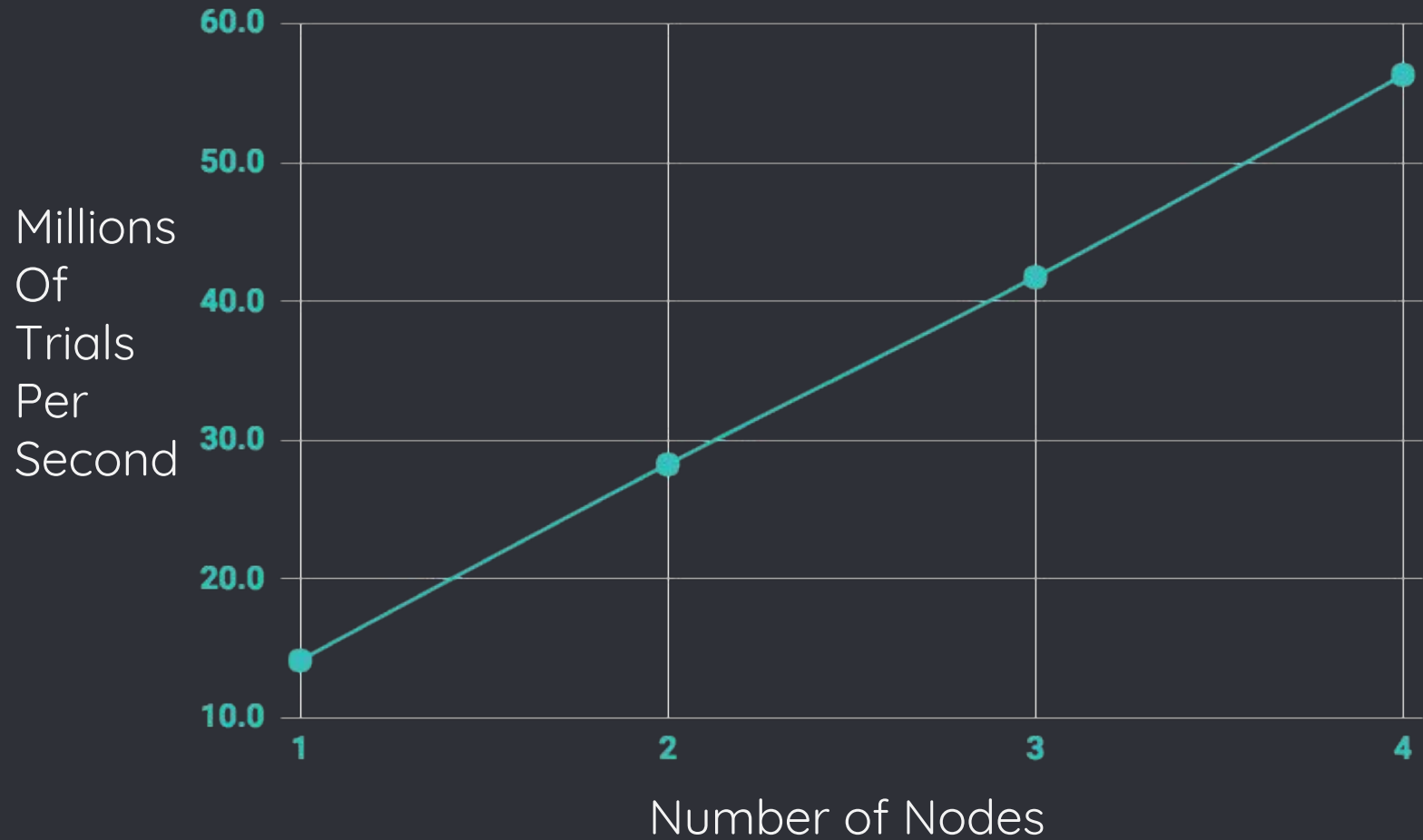
- Results

HPX Parallel Scaling



● Results

HPX Distributed Scaling



● Discussion

○ HPX ports from the simplest to the most complex computer architectures.

○ The HPX Monte Carlo applications scale very efficiently on the Pi cluster, comparable to their scaling on the Rostam supercomputer.

○ Given more time, further demonstrations of the portability and scalability of HPX on the Raspberry Pi platform would be in order.



Thanks!

ANY QUESTIONS?

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