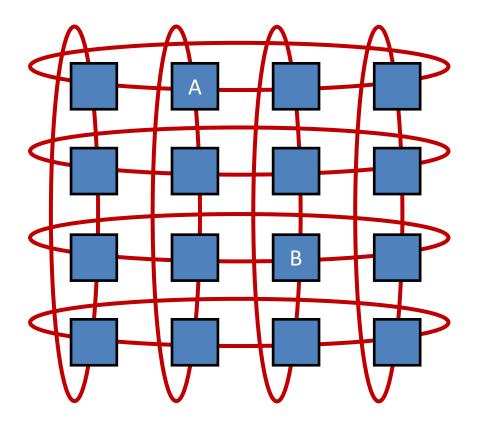
#### **Torus**



#### Pros

- Exploit locality for near-neighbor traffic
- High path diversity
  - 6 shortest paths from A to B
- Edge symmetric
  - Good for load balancing
  - Same router degree

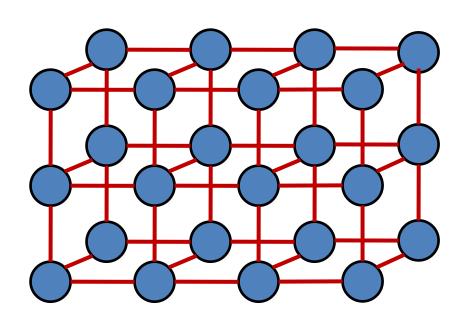
#### • Cons

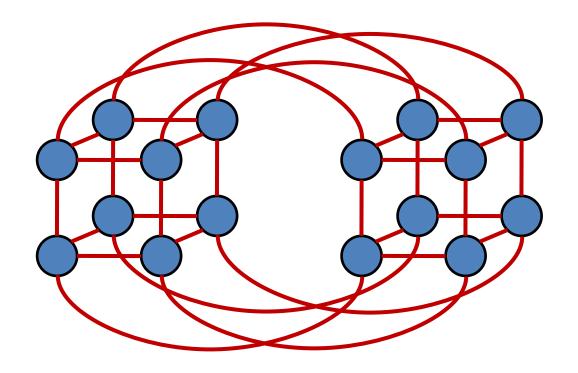
- Unequal link lengths
- Harder to layout



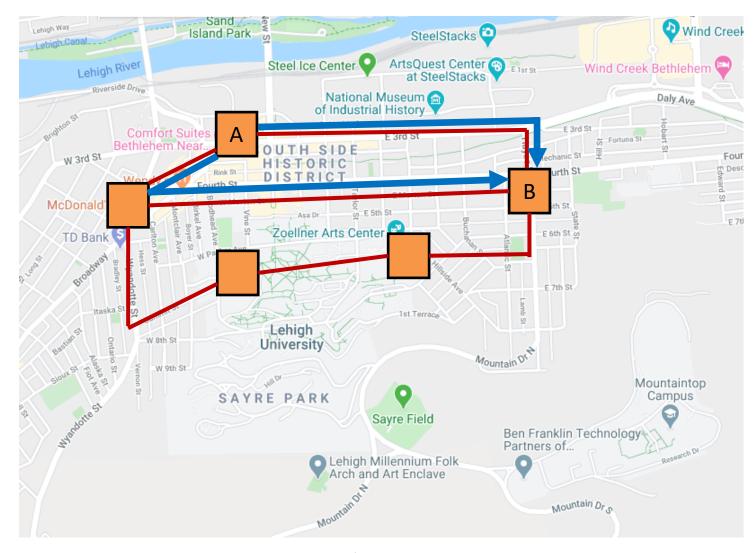
# Multi-dimensional Topologies

- Used in Supercomputers, Datacenters, and other off-chip System Area Networks
- Examples:

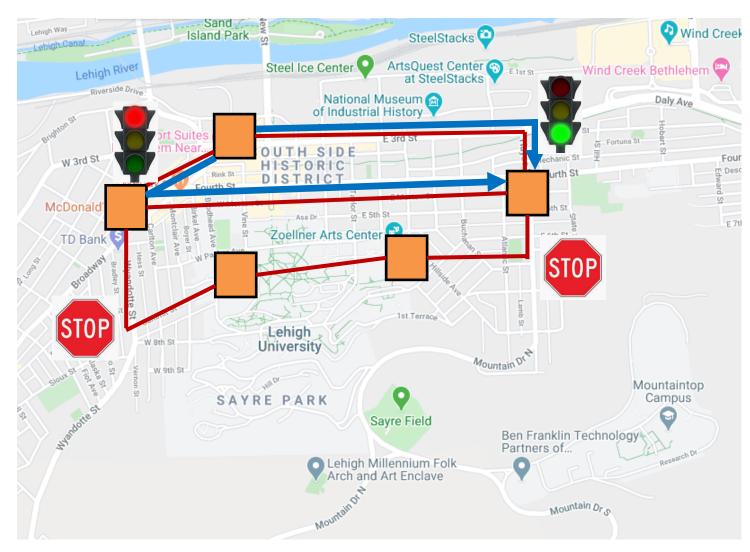




### Routing: Which Path Should a Message Take



# Flow Control: When does a Packet Stop/Proceed



#### Router Microarchitecture: How to Build the Routers



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