Canal, A new Interconnect Generator

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Architectural features: Connection Box

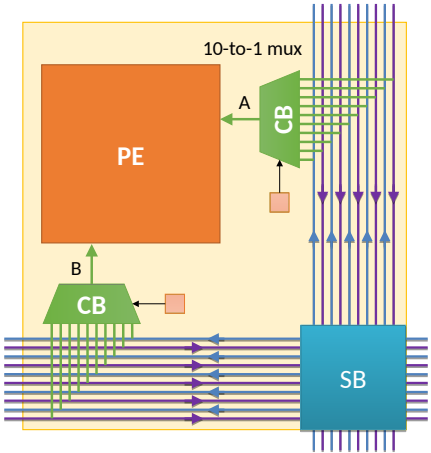


Illustration of a Connection Box (CB). Image Credit: Priyanka

Architectural features: Switch Box

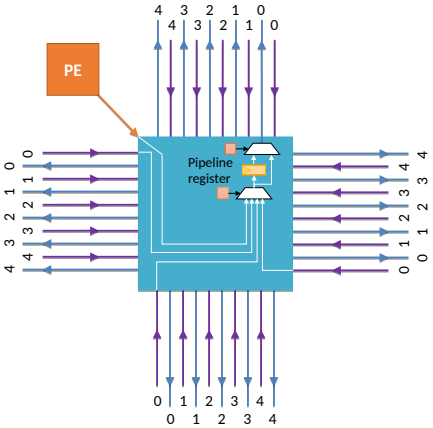


Illustration of a Switch Box (SB) as a mux. Image Credit: Priyanka

Architectural features: Switch Box

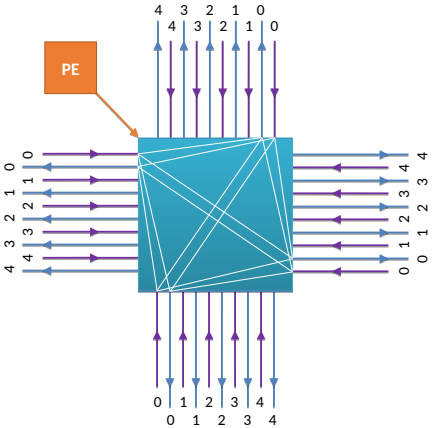
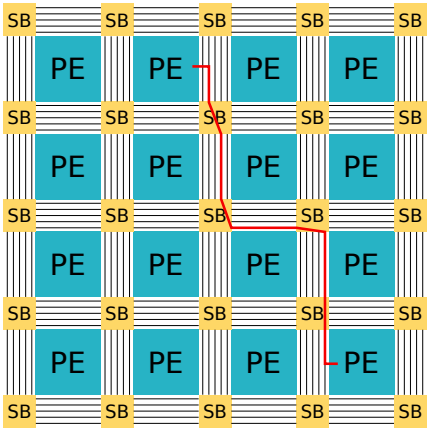


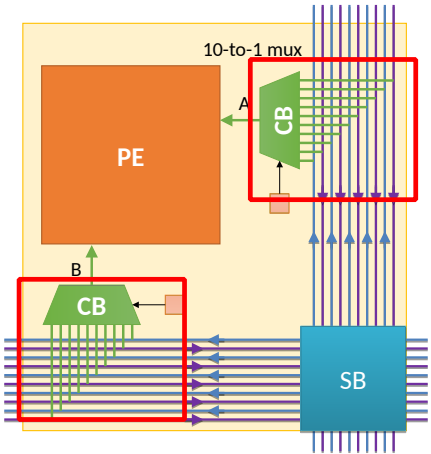
Illustration of a Switch Box (SB) as a wire connections. Image Credit: Priyanka

What does these interconnect muxes do?



Interconnect routes the output from one tile to the input of another tile via these muxes.

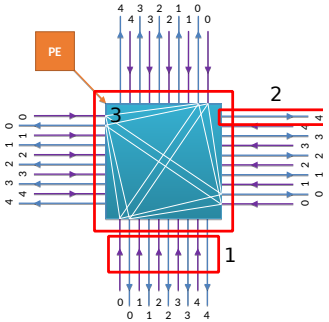
What are the design choices we have?



CB bias refers to which track direction and track number the CB is connected to.

Complex SB Topology

1. Number of tracks
2. The length of each track segment
3. Internal SB topology



Different design choice on SB topology.

Where we are right now

- We basically inherit the design choices from the last chip Jade.
- No design space exploration has been done because
  - Garnet/Magma is extremely slow to run. This just got resolved this weekend.
  - Mapper is still not functional by the time of slides preparation.