

# Day 5: Busses

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## AXI

- Advanced eXtensible Interface
- 3 interface types: AXI-lite, AXI, and AXI-stream
- Master/Slave, master can read or write
- AXI/AXI-lite - memory mapped
- AXI-stream - highest throughput, no memory mapping
- Lite/normal - data valid when both valid and ready signals are high
- Stream - extra signal tlast goes high when last data comes through

## AXI Lite

- Use for small amounts of data
- Sends address/control per piece of data
- Small footprint, but easily data bound performance

## AXI-4

- "Full AXI" or memory mapped
- Single address, up to 256 different data items
- Data width is a parameter
- Larger footprint but more performance than AXI lite

## AXI Streaming

- No address, no read/write
- Master always sending
- Unlimited burst length compared to axi4 (256) and axi-lite (no bursting)