



Towards an Extensible Framework for Accelerated System Simulation

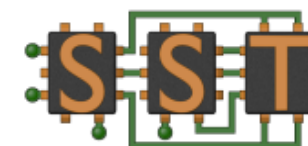
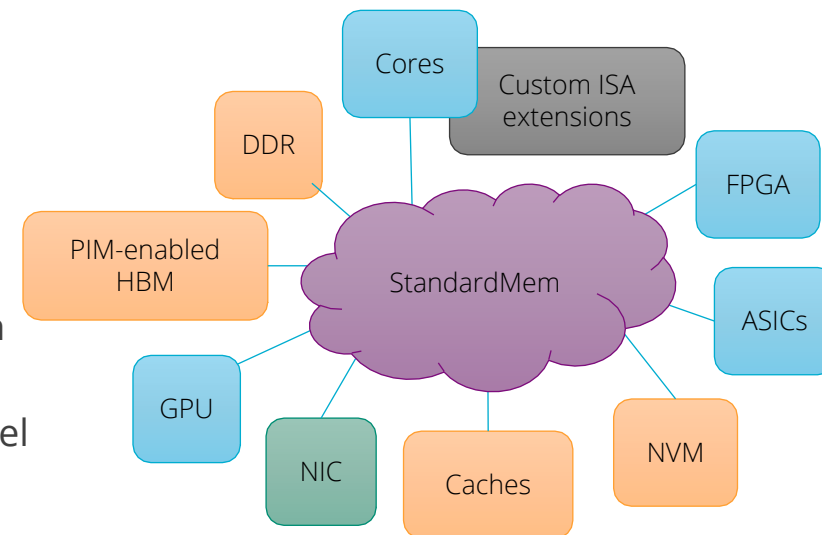
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As systems become increasingly heterogeneous and complex, the needed ModSim environments for evaluating systems become similarly heterogeneous and complex.

- Many models to integrate, changing topologies, custom functionality
- Many accelerator simulators exist, but integration into larger simulated architecture (e.g., GPGPUSim into Gem5/SST) generally leverages a custom interface that is not easily reused for other accelerators

StandardMem A standardized simulation interface that allows flexible communication between various compute, memory, and interconnect simulation components.

- Simulate complex, heterogeneous systems without ad-hoc, difficult-to-maintain model integrations
- Traditional load/store **and** memory-mapped I/O **and** custom event and instruction handling
- Extensible so that non-standard communication events can be added to the interface to facilitate rapid, light-weight custom model integration
- Integrated into the Structural Simulation Toolkit (SST)
 - Experimental release with SST 11, full release with SST 12 (Spring 2022)



sst-simulator.org
github.com/sstsimulator

Result: StandardMem enables simulation of complex, heterogeneous systems with lower overhead and increased opportunity for model reuse