

# Processor ISS (Instruction Set Simulator)

These ISS must be wrapped in a CABA, TLM, or TLMDT wrapper to be used in a SoCLib platforms. Example of such a wrapper is the [VciXcacheWrapper](#) component.

- [processors using the Iss2API](#)
  - ◆ [Mips32](#)
  - ◆ [Ppc405](#)
  - ◆ [Arm](#)
  - ◆ [Sparc v8](#)
  - ◆ [Lattice Micro 32](#)
  - ◆ [NiosII](#)
- [processors using the IssAPI](#)
  - ◆ [MicroBlaze](#)
  - ◆ [ARM7TDMI](#)
  - ◆ [ARM966](#)
  - ◆ [TMS320C62](#)
  - ◆ [MPC7447A](#)
- [Tools/Gdb Server](#) : A GDB-server wrapper, for any ISS using the Iss2API.
- [IssIss2](#) : Utility wrapper to use any [IssApi](#) compliant ISS in an [Iss2Api wrapper](#)

## Components

### VCI Targets

- [VciRam](#) : A multi-segment embedded Ram controller
- [VciSimpleRam](#) : A multi-segment embedded Ram controller with parameterized latency
- [VciMultiTty](#) : A memory mapped multi-TTY controller
- [VciXicu](#) : A memory mapped Hardware interrupt + Timer + IPI controller
- [VciTimer](#) : A memory mapped timer controller
- [VciIcu](#) : A memory mapped interrupt controller
- [VciLocks](#) : A memory mapped locks controller
- [VciPCI](#) : A bridge to the PCI bus
- [VciLogConsole](#) : A memory-mapped text log sink
- [VciSimHelper](#) : A memory-mapped simulation control tool
- [Mailbox](#) : A mailbox component allows several processors to communicate via an interrupt mechanism
- [VciFrameBuffer](#) : A frame buffer for YUV or RVB image display.
- [VciI2cInterface](#) : A I2C bus controller.

### VCI Initiators

- Iss Wrappers (caches)
  - ◆ [VciXcacheWrapper](#) : A generic, VCI compliant, cache controller for [Iss2Api](#) processors
  - ◆ [VciVcacheWrapper](#) : A generic, VCI compliant, cache controller for [Iss2Api](#) processors supporting virtual memory
- Other initiators
  - ◆ [VciXcache](#) : A cache controller for 32 bits [IssApi](#) processors (deprecated)
  - ◆ [VciDma](#) : A DMA engine
  - ◆ [VciFdAccess](#) : A file system access controller

- ♦ VciBlockDevice : A block device controller
- ♦ VciMwmmrController : A Mwmmr channels controller
- ♦ VciMwmmrControllerLf : Another Mwmmr channels controller

## VCI Interconnects

- VciVgmn : A VCI compliant generic micro-network.
- VciVgsb : A VCI compliant generic system bus.
- VciLocalCrossbar : A VCI compliant crossbar.
- VciPibus : A VCI compliant PIBUS implementation.
- VciDspin : A VCI compliant DSPIN micro-network.
- VciSimpleRingNetwork : A VCI compliant ring interconnect.
- VciLocalRingNetwork : A VCI compliant ring interconnect.
- VciAvalonBus : A VCI compliant AVALON bus interconnect.
- VciAnoc : A VCI compliant ANOC micro-network.
- VirtualDspinNetwork : A VCI compliant Dspin micro-network with virtual channels.
- VciInitiatorTransactor : A VCI CABA Initiator compliant VCI TLM-DT Initiator.
- VciTargetTransactor : A VCI CABA Target compliant VCI TLM-DT Target.

## VCI Utilities

- VciLogger : A VCI spy, useful for debugging network messages

## Dedicated coprocessors

- Tc4200 : A WiMAX LDPC decoder
- Tc4200\_enc : a WiMAX LDPC encoder
- trx\_ofdm : A FFT and IFFT coprocessor
- FIR128 : A 128-taps Finite Impulse Response filter
- Upsampling : An interpolation component
- Downsampling : A decimation component
- Synchronization : A synchronization component
- Mapping : A mapping component
- Demapping : A demapping component
- FHT : A Fast Hartley Transform component

## Common utilities

- MappingTable : A tool to declare and list all memory segments used in a platform and to define the memory mapping.
- Loader : A binary-file loader (ELF, COFF, plain)
- VciTargetFsm : A generic CABA submodule for handling the VCI fsm part of a target components, so that you can focus on the functionality
- TtyWrapper : A simulator-side TTY abstraction tool, used by the VciMultiTty component
- ProcessWrapper : A simulator-side fork/exec abstraction tool, with process' stdin/stdout communication
- FbController : A simulator-side framebuffer abstraction tool