

Memory

✓ Peek

✓ Poke

Registers

✓ Read

✓ Write

Control

✓ Halt

? Step

✓ Reset

? Break

Control

✓ Halt

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✓ Reset

✓ Break

What Do We Need for a Debugger?

RISC-V Debug Specification

Memory

- ✓ Peek
- ✓ Poke

Registers

- ✓ Read
- ✓ Write

Control

- ✓ Halt
- ✓ Step
- ✓ Reset
- ✓ Break

RISC-V Debug Summary

- Four different address spaces
 - JTAG, DMI, RAM, CSRs
- Three different ways to access RAM
 - Program Buffer, Abstract Access Memory, System Bus Access
- Two different ways to access CSRs
 - Program Buffer, Abstract Access Register
- One way to access GPRs
 - Abstract Access Register