New issue

Jump to bottom

[Bug Report] sd bit does not update immediately #917

Open **Phantom1003** opened this issue on Jun 15 · 0 comments

Phantom1003 commented on Jun 15 Contributor

Our co-simulation framework found that the mstatus.sd field does not update immediately after mstatus.fs field is dirty.

In the following test case, we set mstatus.fs field to initial(0b01), and then execute a float-point instruction. After the float-point instruction, we read the value in mastatus. We found that cva6 successfully sets fs to dirty while sd is still zero.

```
[spike] core   0: 0x0000000080000148 (0x300022f3) csrr    t0, mstatus
[cva6]      615ns      600 M 0000000080000148 0 300022f3 csrr          t0, mstatus
[spike] core   0: 0x000000008000014c (0x00002517) auipc   a0, 0x2
[cva6]      617ns      602 M 000000008000014c 0 00002517 auipc         a0, 0x2
[spike] core   0: 0x0000000080000150 (0xebc53487) fld     fs1, -324(a0)
[cva6]      651ns      636 M 0000000080000150 0 ebc53487 fld          fs1, -324(a0)
[spike] core   0: 0x0000000080000154 (0x300022f3) csrr    t0, mstatus
[error] WDATA SIM 8000000a00006080, DUT 0000000a00006080
[error] check board clear 5 error
```

According to riscv-privileged specification:

> The SD bit is a read-only bit that summarizes whether either the FS, VS, or XS fields signal the presence of some dirty state that will require saving extended user context to memory.

cva6-10.zip

Assignees

No one assigned

Labels

None yet

Projects

None yet

Milestone

No milestone

Development

No branches or pull requests

---

1 participant