Exception Handling in Nios II

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Exception Handling in Nios II

- · When an interrupt occurs
 - saves the status register
 - disables hardware interrupts
 - saves the next execution address in ea
 - transfers control to the handler



HAL Services

- · Integration with C standard library
- Device drivers
- HAL API
- · System initialization
- Device initialization



- Application developers
 - using HAL API or C standard library
 - do not consider the underlying hardware
- Device driver developers
 - making drivers for low-level hardware
 - interface newly written drivers with HAL

Generic Devices in HAL

- Character-mode devices
- Timer devices
- File subsystems
- Ethernet devices
- DMA devices
- Flash memory devices











Exception Handling in HAL

• SW handlers

- used for unimplemented instructions
 - e.g. running multiplication on NIOS II with no multipliers
- traps
 - break instruction

Project Discussion