

Advanced Computer Systems Architecture

Chip-Multiprocessors: Applications and Architectures

CSE 526M

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Plan for Today

- Questions
- Today's discussion

Objective

- Discuss simple_ixa_app
- Create simple receive and transmit microblocks
- Driving “real” traffic
- The Story so Far ...

Configuring the MSF

- The MSF is configurable, allowing it to connect to different interface types (Ethernet, ATM, etc.)
- All configuration takes places via CSRs

Receiving from the MSF

1. Microengine places a thread on the `RX_THREAD_FREELIST` at the MSF
2. The MSF signals the thread when it has an mpacket ready in an RBUF element, and writes that packet's *receive status words* – RBUF entry, EOP, SOP and status bits (i.e., error bits) -- into the thread's transfer registers
3. Upon receiving the signal, the microengine reads the receive status from the transfer registers
4. The microengine copies the data into memory, and notifies the MSF to release the RBUF entry

Transmitting through the MSF

1. Find a free TBUF
2. Move mpacket into that TBUF
3. Write (and validate) control words for that TBUF (eop, sop, valid)

Simulating with Packets

- You must MSF devices and streams, and map traffic
- In simulation, you must also issue this command on the command line
 - `ps_start_packet_receive()` ;
- To avoid a warning, issue the command after the MSF have been configured to receive
 - Circa cycle 4000

Assignment

- Commentary: Continue with last Thursday's commentary