Update on Gigabit Ethernet Studies

Preliminary results
Looking for Feedback
Looking for Suggestions on Other Measurements

Setup

- 2 Supermicro 2.6GHz Xeon systems (see next slide)
  - Modern server style systems with dual Gb eth. on MB
  - Dual CPU board, equipped with only one CPU
- Out of the box Linux Redhat 9
- Gb Cu <-> fiber media converter (mostly for future use)
- 8 port Gb ethernet store and forward switch (Hawking lowest end possible switch < $200)

Supermicro X5DL8-GG

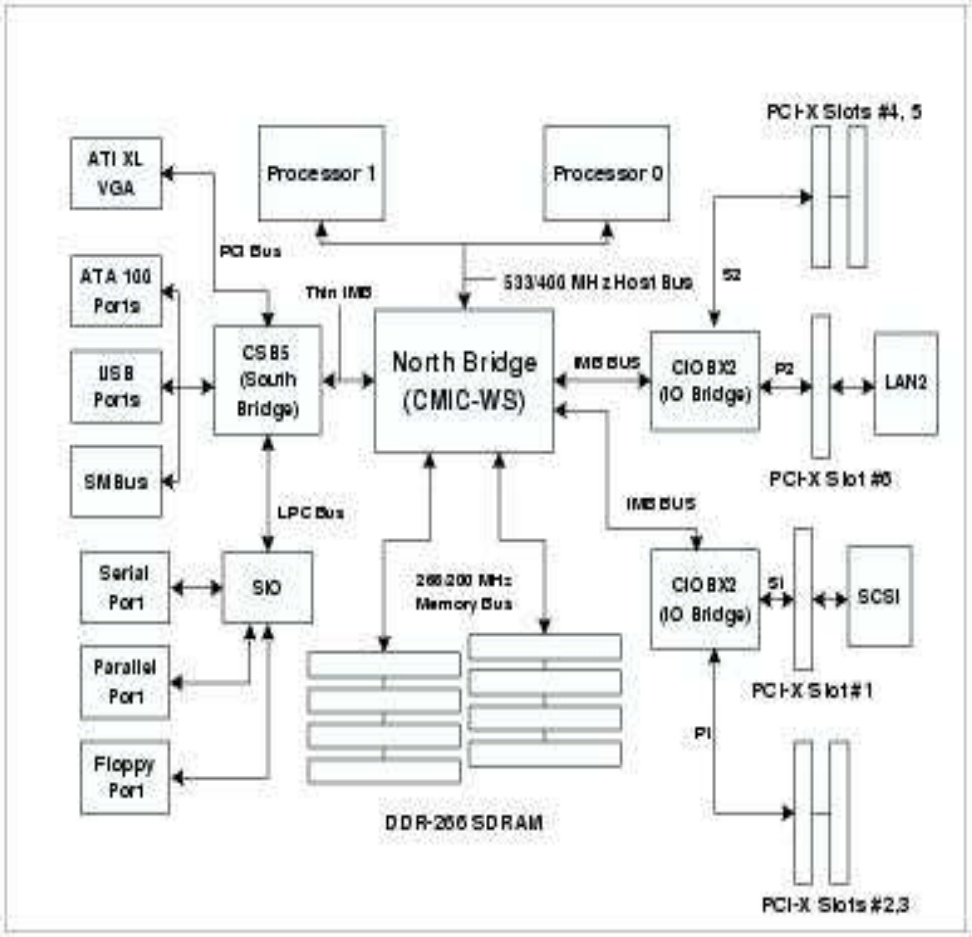
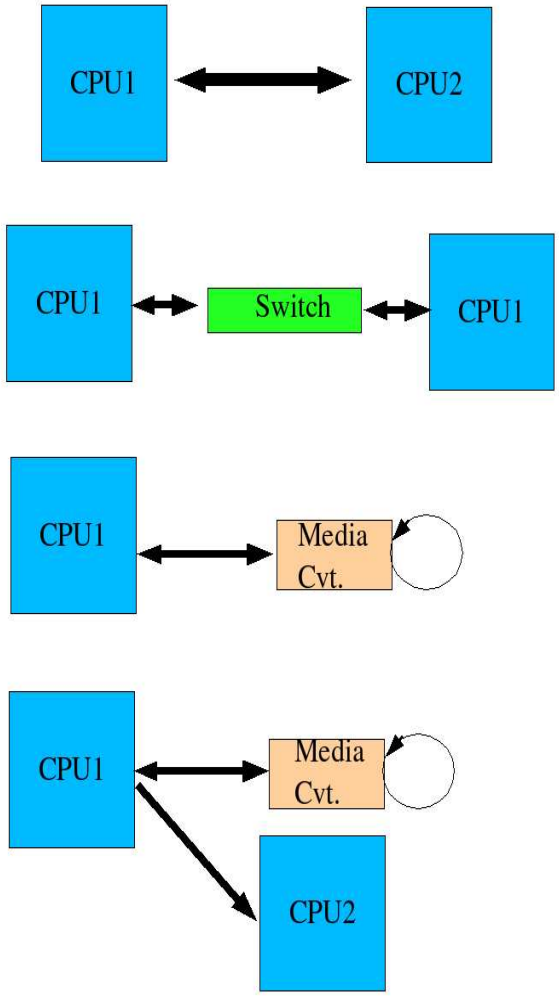


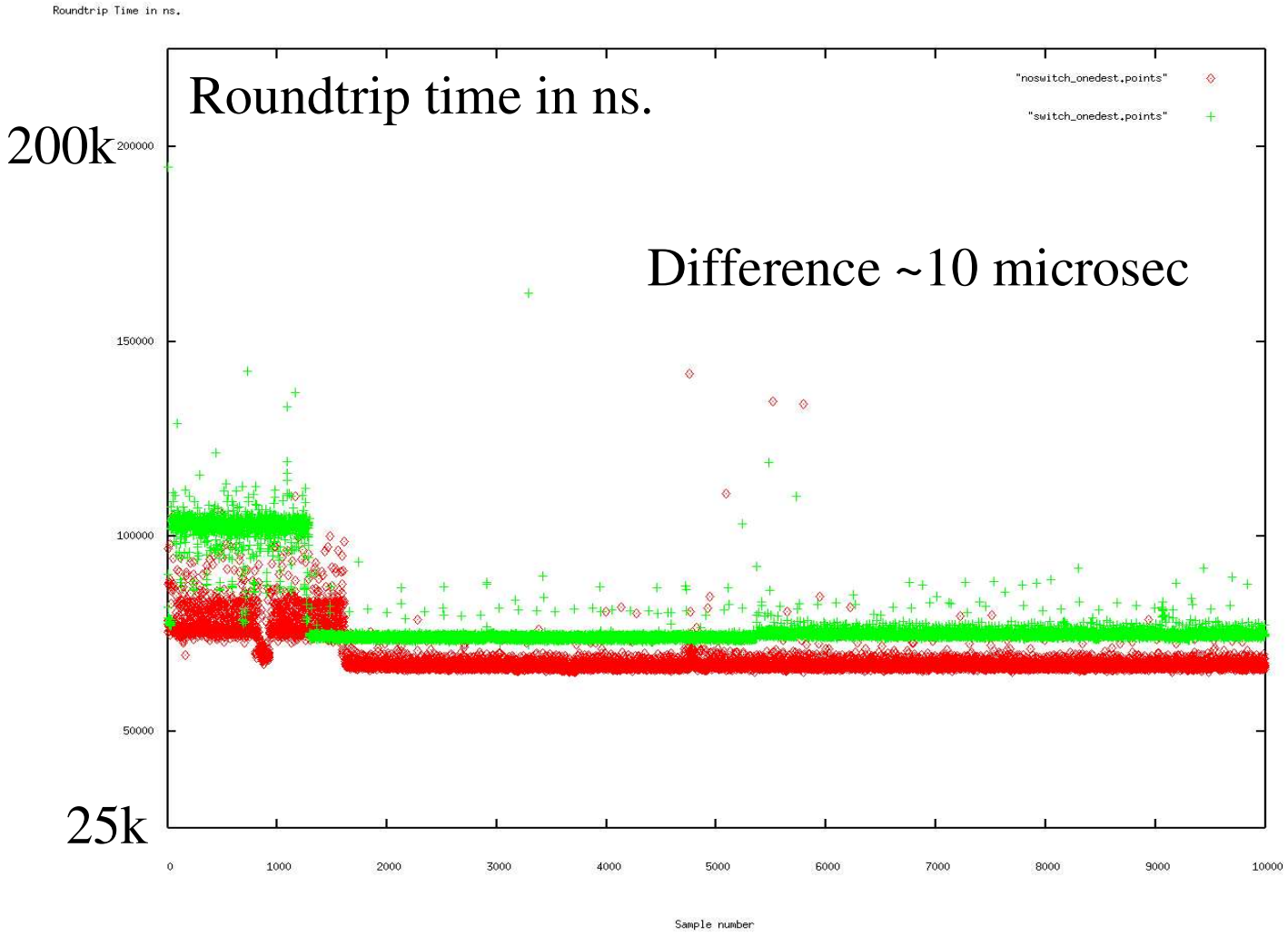
Figure 1-5. ServerWorks Grand Champion LE Chipset:

Various simple setups



- So far only can do round trip times (need better ways to pick apart component timing)
  - Media converter is useful as a reflector (in->out via fiber loop)
- Since the systems are twins ½ the round trip time should indicate full single system time

Round trip with and without switch



Various values

- Roundtrip without switch 73.8 microsec.
- with switch 80.9 microsec.
- 368 byte payload -> 736 byte 85.6 microsec.
- 736 -> 1472 115.2 microsec.
- media converter no switch 31.8 microsec.
- media converter with switch 40.9 microsec.
- media converter with second send 41.2 microsec.
  - This can't be right - needs further investigation!
- two PC's with second send 79.1 microsec.

Many areas for further study

- Understand funny features
  - maybe figure out better way to isolate times
  - add parallel line trigger (already have “laplink” cable between them to emulate Penn method)
- next week (with John Dawson) make direct measurements with GE LSC
- All measurements with Broadcom adapter and not intel - can try that too
- all measurements with raw socket IO and out of box drivers