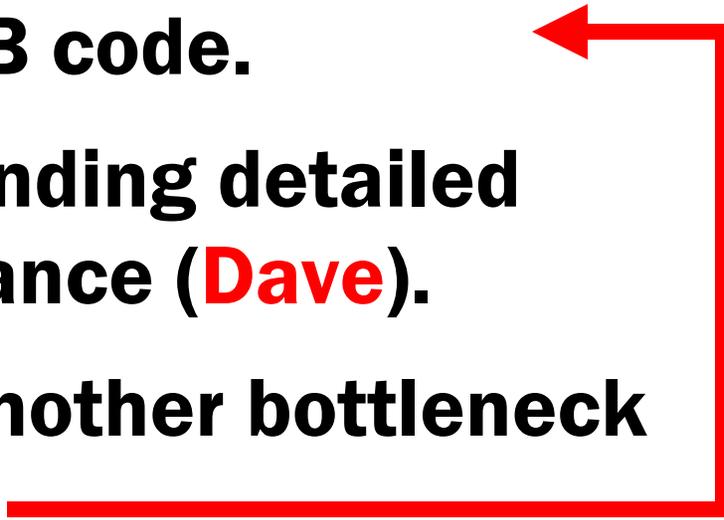


Event Builder – Run 4 Preparations

Progress Since September (the good)

- **Demonstrated increased rate through SEB after fixing JSEB “bottleneck”.**
 - **Major clean-up & simplification of EBC code.**
 - **Incorporated many optimizations developed over last 1 ½ years into SEB code.**
 - **Have developed & are extending detailed monitoring of SEB performance (Dave).**
- ⇒ **Used monitoring to find another bottleneck in SEB and remove it with** _____
- 

Event Builder – Run 4 Preparation

Progress Since September (the bad)

- **Still fighting ~ 3.2 kHz rate limit for single SEB**
 - Rate unchanged between 1 GHz & 2.4 GHz machines
 - At 3.2 kHz, ~75% CPU utilization, ~ 50% in kernel !!
 - No reduction in kernel time w/ optimizations even though we made dramatic change in I/O paradigm that should have reduced kernel time.
- ⇒ There's clearly something we don't understand ...
- **SEB monitoring indicates bottleneck is getting data out of SEB.**
- **A hint:** system monitoring indicates factor of 10 more OS calls/event than there should be.

Event Builder – Run 4 Preparation

SEB Performance: next steps

- **Run SEB's in fake data mode to determine whether JSEB I/O is interfering with ethernet.**
- **More studies of JSEB readout to understand CPU utilization & OS call rate.**
 - e.g. does polling for block read completion in JSEB pseudo-driver code cause trouble ?
- **Continued work on monitoring of SEB internal data flow, thread functioning, ...**
- **Investigate BIOS configuration on Microway PC's (Dave: possible hint of problem ?).**

Event Builder – Run 4 Preparation

Other work

- **Set up of 32 new machines underway**
 - In racks. Cabling started. Operational this week (?)
- **Complete Gbit switch-over of EvB code**
 - BAC's next task now that optimizations are in place.
- **Implement compression in ATP's**
 - Jiangyong has started – my guess ~ 2-3 weeks.
- **Corba, complier upgrades – start next week.**
- **Incorporate multi-threaded Level-2 code into event-builder – end of October.**
- **Debug, debug, debug (after all of the “improvements”).**