

get wilm + Josec. foils

BlueGene Visualizer and Sonifier

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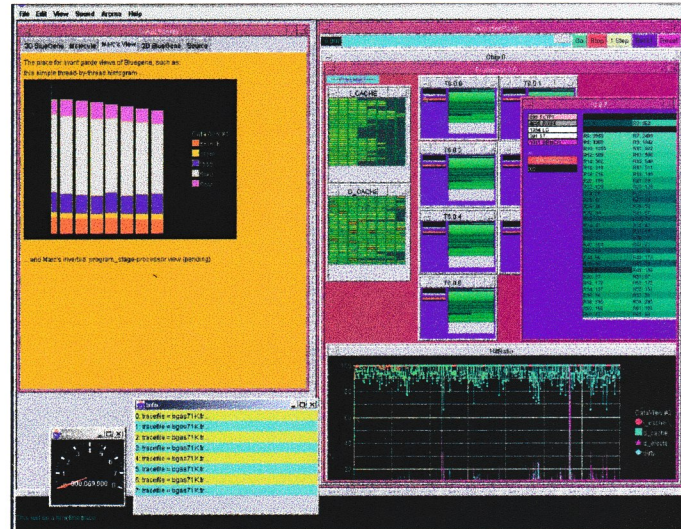
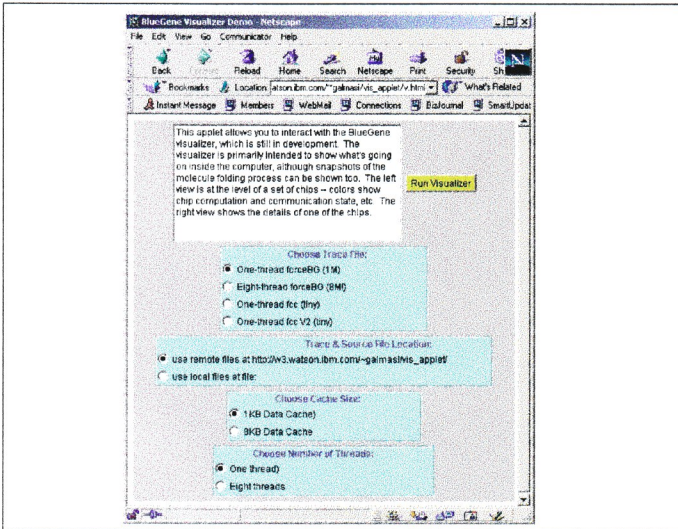
<http://w3.watson.ibm.com/~galmasi>

Visualizer/Sonifier Talk Outline

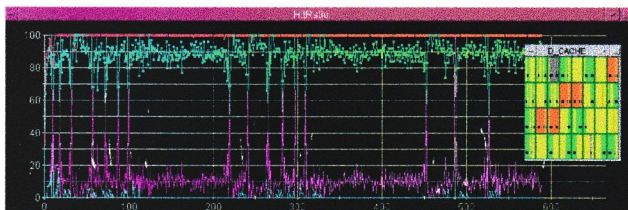
- 1-thread demo
- 8-thread demo
- Things we've learned

	Load	Stre	Branch	Fix	Fct	Tot
Bonds						
Bonds						
Torsions						
One F						
LJ						
Electro						
tot						
%	11	2.4	6.1	49	32	

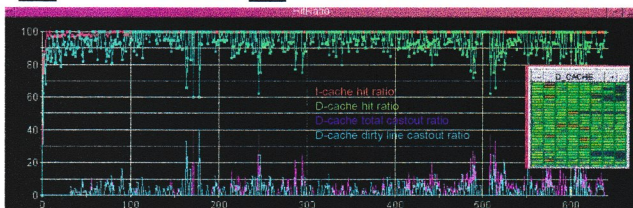
→ • array of chips, processors, thread units



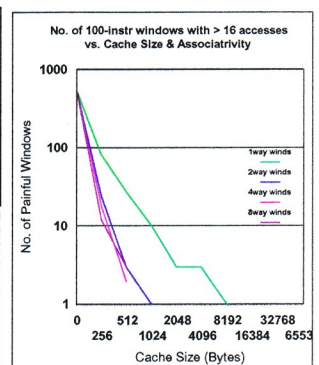
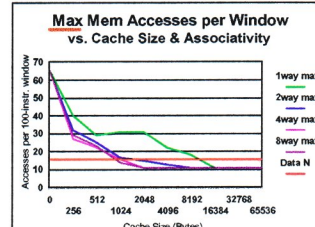
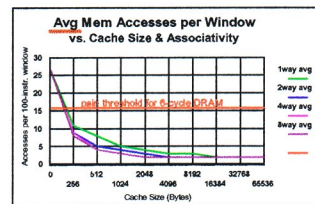
Blue Gene Cache Hit Ratio Traces: 1-Thread vs 8-Thread cases



Above: 1 thread with 1KB data cache. Below: 8threads with 8KB cache. X-axis = instructions x 100



DRAM access rate reduction by datacaches for atom force computation



Conclusions

- 1-way set associative looks like a loser
- 8-way looks like overkill for single thread.
- 4-way 1KB cache just gets below pain threshold of 16 DRAM accesses/100 instructions (for one thread)
- Multithread results pending...