Bringing Up Cielo: Experiences with a Cray XE6 System

Or, Getting Started with Your New 140k Processor System

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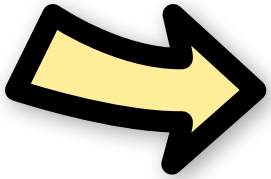
Cielo at a Glance

- 96 Racks
- 96 Nodes per Rack
- Two 8-core 2.4GHz Processors per Node
- 32GB Memory per Node
- Torus network: 4.68GB/s links
- 142,304 Total Compute Cores
- 284,608 GB Total Compute Memory
- 1.11 PF measured speed

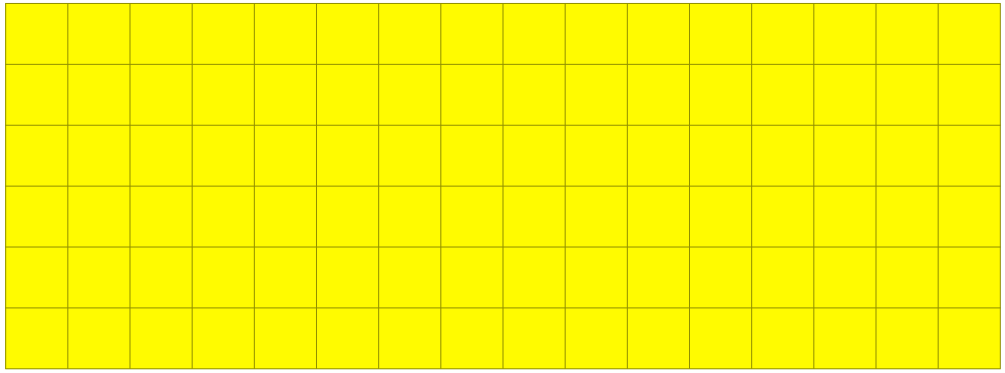


TOP 10 Systems - 11/2011

1	K computer, SPARC64 VIIIfx 2.0GHz, Tofu interconnect
2	NUDT YH MPP, Xeon X5670 6C 2.93 GHz, NVIDIA 2050
3	Cray XT5-HE Opteron 6-core 2.6 GHz
4	Dawning TC3600 Blade, Intel X5650, NVidia Tesla C2050 GPU
5	HP ProLiant SL390s G7 Xeon 6C X5670, Nvidia GPU, Linux/Windows
6	Cray XE6, Opteron 6136 8C 2.40GHz, Custom
7	SGI Altix ICE 8200EX/8400EX, Xeon HT QC 3.0/Xeon 5570/5670 2.93 Ghz, Infiniband
8	Cray XE6, Opteron 6172 12C 2.10GHz, Custom
9	Bull bullx super-node S6010/S6030
10	BladeCenter QS22/LS21 Cluster, PowerXCell 8i 3.2 Ghz / Opteron DC 1.8 GHz, Voltaire Infiniband

(Blatantly ripped from top500.org)

Cielo's Family



Cielo

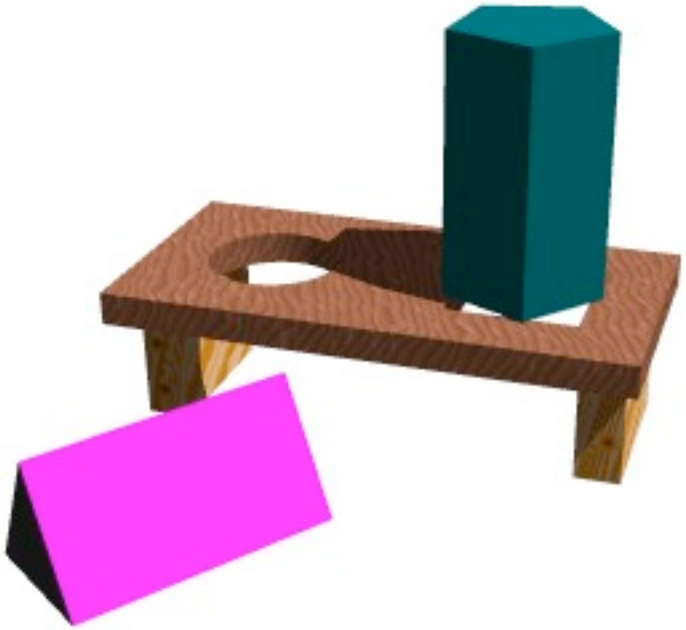
Cielito

Smog

Muzia


New Mexico Alliance for
Computing at Extreme Scale
NNSA
Cielo

Software Challenges



Software Challenges

- RPM Challenges
- Configuration Management Challenges
- Environment Management Challenges

Vendor Relations

Conclusions

- **Keeping good vendor relations helped us a lot**
- **Getting test systems early showed us problems early**
  - Also helped us solve those problems early
- **As always, configuration management is worthwhile**
- **Working as a team is important**
  - Many people and groups came together to get Cielo up quickly

Questions?