Session I - Threads

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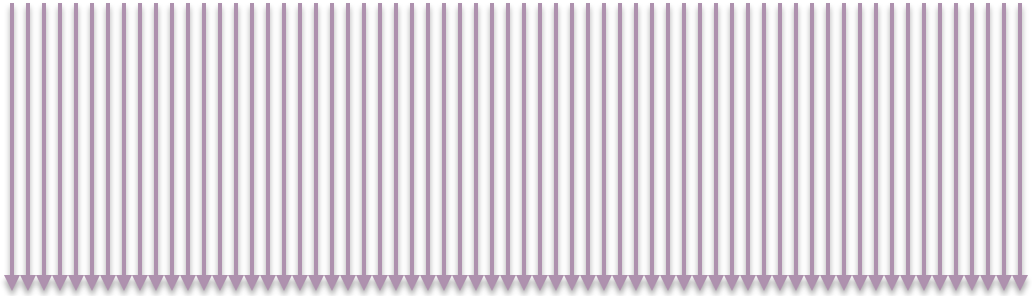

BG_SMP_FAST_WAKEUP

OMP_WAIT_POLICY

XLSMPOPTS

OMP_NUM_THREADS

OMP_NESTED

2013 MiraCon Workshop – ESP Days

Wednesday 3/6/2013

Session: 9:45-11:00am

Concurrency on *Mira*

- ***Mira* – IBM Blue Gene/Q system**
  - 48K nodes
- **Node**
  - 16 cores
  - 4 HW thread/core
- **Max hardware concurrency:**
  - 3,145,728

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- ***Intrepid*****– IBM Blue Gene/P**
  - 40K nodes
  - Node: 4 cores, 1 hw thread/core
  - Max hardware concurrency: 163,840

Thread Flavors

- **Pthreads**
- **OpenMP**
  - IBM XL Compilers: OpenMP 3.1
  - GNU compilers: OpenMP 3.0
    - gcc 4.4.6

ESP Projects Using Threads

PI/affiliation	Code(s)	Threads
Balaji/GFDL	HIRAM	OpenMP
Curtiss/ANL	QMCPACK	OpenMP
Frouzakis/ETH	Nek5000	*
Gordon/Iowa State	GAMESS	OpenMP
Habib/ANL, UC	HACC	OpenMP
Harrison/ORNL	MADNESS	OpenMP, Pthreads
Jansen/U Colorado	PHASTA	OpenMP
Jordan/USC	AWP-ODC, SORD	OpenMP
Khoklov/UC	HSCD	OpenMP
Lamb/UC	FLASH/RTFlame,White Dwarf	OpenMP
Mackenzie/Fermilab	MILC, Chroma, CPS	OpenMP, Pthreads
Moser/UTexas	PSDNS	OpenMP
Pieper/ANL	GFMC	OpenMP
Roux/UC	NAMD, Charm++	Pthreads
Tang/Princeton	GTC	OpenMP
Voth/UC, ANL	NAMD, LAMMPS, RAPTOR	OpenMP, Pthreads