

October 15 -17, 2008 Cray XT Quad-core Workshop at NCCS/ORNL – Draft Agenda

Oct. 15 – First Day Morning

8:00 - 8:30 am

Morning coffee - to allow participants to discuss their work for the day1s meeting, speakers to Check slides, session chairs to finalize introductions, registration pickup for late arrivals.

8:30 – 8:45 am

Welcome and Introduction to the Workshop – Jim Hack, NCCS

8:45 – 9:00 am

Introduction to NCCS LCF XT System – Don Frederick, NCCS

9:00 – 9:15 am

Introduction to NICS Kraken XT System – Bruce Loftis, NICS

9:15 – 9:45 am

Cray Roadmap – John Levesque, Cray

9:45 – 10:45 am

Architecture of the AMD Quad Core CPUs – Brian Waldecker, AMD

- Architectural features that the application developer needs to know
 - Functional Units
 - Cache
 - Memory interface
- Issues using Quad core node in XT4 MPP

10:45 – 11:00 am

Break

11:00 – Noon

Cray XT Architecture - detailed description of Cray XT4 and XT5 systems, including interconnect and node structure – John Levesque, Cray

Noon - 1:00 pm

Working lunch – review of morning materials, Question and Answers; Presentation on application experience on XT systems [Speaker TBA].

1:00 – 2:00 pm

Using Craypat to profile applications and measure application performance on the XT4/XT5
Presentation of First User Assignment - obtain profiles of your application running on the XT4-Quad core – Luis DaRose, Cray

2:00 – 2:30 pm

Using NCCS/NICS Cray XT4 Systems - Rebecca Hartman-Baker, NCCS, Lonnie Crosby, NICS

- a. Logging onto the system
- b. Compiling applications
- c. Running jobs batch & interactive

2:30 –2:45 pm

Break

2:45 – 5:00 pm

Continue working on assignment obtain profiles of user application running on the XT4-Quad Core

5:30 – 6:30 NCCS Poster Session

Oct. 16 – Second Day Morning

8:00 am

Working breakfast to allow participants to discuss their work for the day1s meeting, speakers to Check slides, session chairs to finalize introductions, registration pickup for late arrivals. Continue working on previous day's assignment obtain profiles of your application running on the XT4-Quad core

8:30 - 10:00 am

Optimizations for the AMD Quad Core – Jeff Larkin, Cray

- Optimization techniques that the application developer needs to know
- Vectorization
- Blocking for cache
- Using prefetch directives

10:00 am

Break

10:15 - 11:15 am

Using MPI on XT Systems – Jeff Larkin, Cray

11:15 – Noon

The Cray Scientific Libraries – Adrian Tate, Cray

Noon - 1:00 pm

Working lunch - obtain user account information; log onto system; compile applications. Finish first day assignment. User application experience presentation. [Speaker TBA].

1:00 pm – 2:15 pm

Using PGI Compilers – Brent Leback, PGI

2:15 – 3:00 pm

Hands-on session -

Second Day Afternoon Assignment optimize your application for node performance

3:00 – 3:15 pm

Break

3:15 – 5:00 pm

Hands-on Session continued -

Second Day Afternoon Assignment optimize your application for node Performance (continued)

Oct. 17 – Third Day Morning

8:00 am

Working breakfast to allow participants to discuss their work for the day1s meeting, speakers to Check slides, session chairs to finalize introductions, pickup for late arrivals. Continue working on previous day's assignment - optimize your application for node Performance (continued)

8:30- 10:30 am

OpenMP for Cray XT Systems

10:30 am

Break

10:45 – 11:30 am

Using I/O on Cray XT Systems – NCCS Staff

11:30 - Noon

Introduction to the ADIOS I/O Library- Scott Klasky, NCCS

Noon – 1:00 pm

Working lunch - User application experience presentation [Speaker TBA]. Finish second day assignment.

1:00 pm

Hands-on session - Third Day Afternoon Assignment optimization your application across the MPP

2:30 PM

Break

2:45 pm – 5:00 pm

Hands-on session - Third Day Afternoon Assignment optimize your application across the MPP (continued)