

Traleika Glacier (X-Stack)

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Overview

- **Traleika Glacier (TG) Architecture direction from the eyes of an application developer**
- **TG methods for exploring mapping applications onto TG architecture**
- **TG goals in working with ExaCT to map applications to Traleika Glacier**

TG architecture direction

(from the eyes of application developer)

- Design of architecture is constrained by power
- Over-provisioned System; more resources than power budget supports – users will need to think about power-performance tradeoffs made at runtime
- Data movement will be very energy expensive – data locality and explicit communication important
- Higher variability in performance among cores and potential resiliency issues require programs to adapt at runtime

TG Tools to evaluate HW/SW choices

- Tools that can run real codes, collect meaningful statistics for system evaluation
 - Strawman *system* architecture – HW and SW
 - Event Driven Task (EDT) programming Model
 - Open Community Runtime (OCR)
 - Source-source compilers, translators, programming interfaces; HTA, PIL, R-Stream, CnC
 - Function system simulator, behavioral emulation
 - Instruction, memory, data movement statistic gathering
 - Energy and Power Analyzer



TG goals to work with ExaCT

- Work with Co-Design centers to evaluate EXaCT apps (or proxy apps) on the TG system architecture.

Steps:

1. Technical review & discussions - ongoing
2. Development, port of mini apps & proxy apps; share code and evaluation results
3. Hands on meetings with key team members to map ExaCT applications to TG architecture



Questions?
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