A Crash course to (The) Bighouse

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SVTI Users meeting Sep 20th

Outline

Hardware: bighouse

Bighouse

- bighouse is our Itanium SMP machine;
- Login: bighouse.engin.umich.edu
- Shares nyx's 6TB NFS file system
- Running SUsE Linux Enterprise Server 10
- ProPack 5 from SGI

Bighouse Hardware

Current Hardware

- 16 CPU, 32 core Intel Itanium II's
- Measured 5.5 Gflop/cpu running 4 way
- 171.9 Gflop running 32 way
- 96 GB Ram
- Max 41 GB/s Aggregate Memory bandwidth

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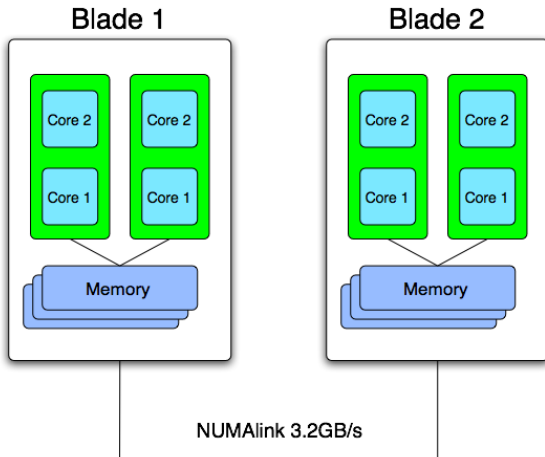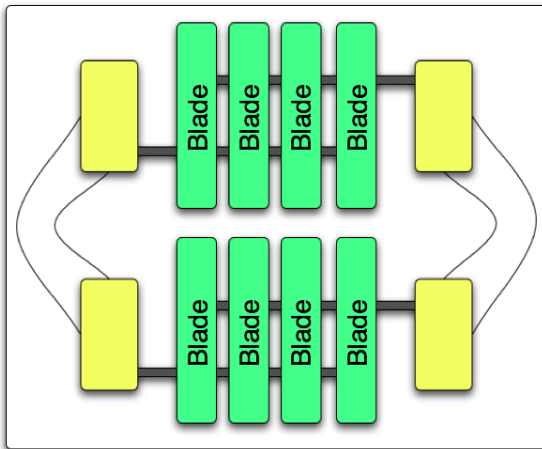### Current Hardware

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ccNUMA

Altix 4700 Brick

Packaged Software

Packaged Software

- Abaqus/6.6
    - `abaqus_v6.env`
    - `standard_memory_policy=15000mb`
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- Nastran/2007r2
- Gaussian/03
    - %nproc=8
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    - DO NOT SET #PAGES 804

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Abaqus Example

- `mkdir /tmp/$PBS_JOBID`
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- `ifort` Fortran90/77
- `icc` C
- `icpc` C++
- GNU Compilers are available but not recommended

Compiler Options

- `-O2` General optimization
- `-O3 -ipo -funroll-loops -ftz` Better Optimization
- `-openmp` Enable OpenMP support

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  - `mpirun -np 10 a.out`
- MKL Math Kernel Library
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- Memory is Enforced
    - Defaults to 1MB
    - Use #PBS -l mem=100mb to request what you need
- Use route queue
- Only 30 cpus available for batch jobs
- 2 cpus for compiling sftp PBS etc
- Please clean up /tmp

Questions

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`http://cac.engin.umich.edu/resources/bighouse.html`
`cac-support@umich.edu`