With a GNU in the finance core

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Finance is...

- Huge amount of data
- Lots of data analisys
- Response in near-real time
- Accuracy

Finance applications

- Risk management
- Portfolio analysis
- Complex pricing

Other ‘bank-research’ applications

- Dynamic Microsimulation
- Econometric Modeling
- Performance Index

High Performance Computing

- Floating-point Performance
- Scalability
- Flexibility
- Applications

High Performance Cluster

HPC enable you to solve complex, compute-intensive applications with the most cost-effective (to fit your budget) and flexible (to fit your environment) systems available.

Blade server approach

Lower total cost of ownership, utility computing, server consolidation, manageability, scalability, time to market

Blade server Cluster

- Stability
- Simplified Installation
- Scalability
- Time to Market

Bank choice

- 1 24-way SMP machine
- 150 generic Wintel server
- 130 generic Lintel server
- 1 BladeServer Cluster with 50 Linux nodes

Linux Market

- Meta Group: "have gained more than 25 percent overall server market share by 2005/06."
- IDC: Linux server revenue will increase at a compound annual growth rate (CAGR) of 28.3 percent, with worldwide Linux revenues growing from $2.3 billion in 2002 to $7.9 billion in 2007.

Beowulf, openMosix Parallel Computing

- Threads
  - Load Sharing/Balancing
  - MPI
  - PVM
  - HPF

Data Analisys

- R (S-Plus)
- Scilab/Octave (Matlab)
- ROOT (C++ Framework)

Graphics

- GNU Gnuplot
- IBM Open DX
- GNOME GUPPI

Scientific/Financial Libraries

- GSL - GNU Scientific Library
- Quantlib
- Gretl - GNU Regression and Testing Library

Example: Quantlib

- "[...] based on the difference between releasing model implementations and possessing an actual trading system that incorporates them and whose real value lies in the efficient integration of the portfolio risk management. QuantLib offers itself as an 'open' component that can be merged and tailored to whatever environment." (F. Ametrano)

Questions?

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