When Now is Too Late

HANSA

A revolutionary massively parallel compute platform, supporting 256GB cache memory, layered on a rich software stack. HANSA combines the powers of FPGA's speed with the programming flexibility of C.

Introduction:

Imagine running over 1,000 simultaneous VWAP calculations, concurrently pricing over 1,000 complex derivatives, or computing a correlation matrix of size 32Kx32K using only a single machine. **HANSA** makes this possible. **HANSA**'s disruptive High Performance Computing Solution is the equivalent to a 768 CPU grid in a single box, or a 1,536 core super computer leveraging a 256GB cache memory, in a 9U form running Windows or Linux.

HANSA enables firms to reduce the calculation time of complex financial risk analysis, handle massive quantities of latency-sensitive market data, accelerate computationally intensive applications, consolidate data center foot print and significantly reduce the cost of grid computing.

HANSA Compared **(to similarly configured grids)**

- **Power to Performance: 3.5% of the power,**
- **Space to Performance: 0.5% (yes, ½ a percent) space,**
- **Price to Performance: 10% to 33% TCO**

Product Brief:

HANSA is a revolutionary patent pending massively parallel hardware platform with a rich software stack combining the powers of FPGA with the flexibility of C programming. The simple plug and play HANSA with a commodity CPU board is easy to use, requires no additional training and is managed similar to a workstation running either Windows or Linux. The platform arrives out of the box with either 1,536 double precision cores (for complex numerical solutions), or with 768 generic RISC processing cores (for generic "C" compliance). HANSA has the ability to seamlessly extend your proprietary "C" libraries onto a massively parallel environment. The software stack includes API's that address:

- ScaLAPACK,
- Integration of Real Time streams such as provided by WOMBAT,
- Building correlation matrices, interpolations,
- Monte Carlo Simulations etc., and finally
- Partition the hardware resources to suit the problem sets requirements.

Network data transfer latencies are eliminated through a powerful 256GB memory cache distributed and shared across all processors.

HANSA is an easy to use massively parallel FPGA compute environment without the hassles or the need to learn low level programming languages.

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HANSA in Financial Markets

Calculate real-time analytics for over 1000 stocks simultaneously:

HANSA can leverage the software stack, multiple cores, and massive amounts of memory to consume vast quantities of real time data, execute analytics and track various real-time benchmarks which can be sampled at regular intervals with a choice of interpolation techniques.

Sub-Millisecond Arbitrage:

HANSA enables traders to price/re-weight the constituents of indices, pairs, derivatives, and ETFs, clients can exploit minute arbitrage opportunities at millisecond speeds.

Derivative Risk Management:

Employ **HANSA's** multiple cores to run Monte Carlo Simulations faster, with more precision, and less expensively than ever before.

Streamline Datacenter Cost

HANSA reduces the cost of your data center by 67 to 90%. The 1,536 cores in a single box can reduce cooling, air condition, space, and network resources of traditional grid deployments.

Extend Existing Tool Sets

HANSA supports Matlab plug-ins for solving large matrix problems - impossible to solve on a PC.

Who We Are:

Kuberre Systems is a team of quantitative professionals with over thirteen years of deep financial markets domain expertise coupled with over 27 years of developing high performance/low latency engineering solutions for the defense industry.

What we are looking for:

We are looking for early adopters and or beta clients to help build out services for:

- **Algorithmic/High Frequency Trading** – helping firms better manage electronic execution
- **Risk Management** - helping firms expedite their extensive derivative valuation services
- **Datacenter consolidation** – helping firms lower their cost of traditional grid footprints
- **High Performance Computing Implementations** - where speed, throughput, and cost are a significant factor

Potential Areas of Application across Industries:

- Financial Industry
  - High Frequency Trading
  - Algorithmic Trading
  - Risk Management (valuation of derivatives, VaR)
- Highly suitable for parallel processing systems requiring high degree of computation such as
  - flow solvers
  - structural analysis
  - Montecarlo simulation
  - Eigen value problems
  - Simulation
- Communication applications involving Galois Field and bit arithmetic like
  - Forward error correction
  - Data encryption and decryption
  - Pattern recognition
- String based search and correlation applications such as
  - Bioinformatics search engines (BLAST, Smith Watermann, Mass spectrometry data analysis) etc.
- Signal Processing applications like
  - Radar beam formers.
  - Image processing etc.
  - Strategic data analysis applications