Netlist HybriDIMM™ Accelerates Big Data and Analytics

Overview

Big Data and analytics are getting big attention from IT because they produce big business results. Big Data solutions help businesses accelerate transactions, improve decision support systems, increase understanding of customers and optimize performance. At the heart of Big Data solutions is the data, and ability to move data quickly and in real time to make applications such as Hadoop, Spark and others scale faster in real time.

Storage Class Memory – Accelerating Big Data and Analytics

One of the core limitations for scaling and accelerating Big Data and real time analytics is the ability to move data quickly and have it readily available to the CPU. A new type of storage has emerged in the market call Storage-class Memory (SCM). The purpose of SCM is to unite DRAM and NAND to provide a new hybrid solution that moves storage closer to memory and the CPU, is both byte and block addressable, near the performance of memory, has the ability to scale memory capacities to flash and provides data persistence. Netlist is the first company to accomplish with their new HybriDIMM™ product line featuring PreSight™, a predictive memory manager.

Applications:

- In-memory Computing
- Big Data Analytics
- Database – SQL, NoSQL, Object

Changing the Economics of Computing

The cost of system memory is a key driver in the overall price of computing. SCM changes the economics of scaling memory for:

- Big data application data sets
- Real-time business analytic workloads
- Storage acceleration
- Driving growth of in-memory applications

Other applications that can benefit from SCM include: data warehousing, online data analytics, data capture/compliance check, geophysical sciences, simulation and industrial design, genomics, post production and special effects, financial algorithms, and gaming.

This is just the beginning, with SCM storage capacities of up to 256/512GB available per device today and 1TB or more in the future.

Big Data and Analytics on SCM

Big Data systems is ingested by data from existing and new sources of both structured (CRM, Point of sale, market data) and unstructured (email, blogs, social networks, videos). This data can come from enterprise or cloud-based data warehouses, from sensor or machine generation sources, and from security devices and can be streamed into the analytic database. The data is processed by a data management system, either a standard (relational) database management system or a clustered solutions using (Hadoop™, Spark™, Hbase™, Cassandra™, etc.) Both existing database management systems as well as next generation systems designed to take advantage of persistent and storage class memory along with clustered big data systems can benefit from PreSight Technology using either block storage mode or AppDirect API.
Big Data Processing and Analytics Acceleration

These systems can also have built-in analytics capabilities or feed separate business intelligence and analytics applications. These BI/analytics systems as well the interface between these systems and the database systems can be optimized using PreSight Technology. There are 3 types of business analytics: descriptive (data mining) – what happened; predictive analytics – what will happen; and prescriptive (machine learning) – anticipating what/when/why it will happen and suggesting decision options based on it. Netlist can accelerate all three of these use cases today.

Faster Big Data and Analytics on Today’s Intel Server Platforms via LRDIMM Slots

Netlist’s HybriDIMM is the only solution that unites DRAM and NAND into a single solution that is both byte and block addressable on a standard DDR4 LRDIMM that can be used in servers shipping today. Netlist’s PreSight™ Technology, with predictive memory management, can pre-fetch data from NAND and present it as byte addressable DRAM at near-memory speeds. This is what make Netlist's HybriDIMM product unique in the market and how we can truly accelerate applications and change the cost of computing. If you need to scale your analytics now, Netlist's HybriDIMM is the way to do that today.

Resources

To learn more go to www.netlist/HybriDIMM.com