

**Making your search
SIMPLE, even when your
ideas are complex**



The opportunity

If mined with the right tools, big data presents a unique opportunity to alter our lives. The rate of our ability to gather data is outpacing our ability to mine it. Swoop Search unveils the right approach to address this challenge. Swoop Search is an intelligent union between software and hardware, dancing perfectly in tune with human intuition to untangle and present unique insights buried deep within the data set. Swoop Search users will make a quantum leap in analyzing information, discovering trends, and drawing connections between dimensions in data.

The application challenge

While big data represents an unprecedented opportunity, two challenges plague its wide spread adoption.

Usability is the first challenge. Big data constructs typically consist of variably structured and unstructured schema. Effectively navigating and understanding these constructs requires skills to theorize possible relationships based on acquired experience and domain knowledge. Testing the theorized relationship requires skills to generate both configurable queries and multidimensional queries, as well as being able to implement them. Unfortunately, these two skills are orthogonal to each other as users with intuition and experience do not possess programmatic skills, while programmers do not possess the experience and intuition required to make sense of the data.

The second challenge is scalability. Today's compute infrastructure is not able to scale at the rate of big data growth. While estimates vary by source, it is an accepted fact that general-purpose compute servers will not be able to scale to meet the required compute, networking and storage requirements to effectively manage big data growth.

The solution

Swoop Search has looked at these big data challenges from a fresh perspective and has

developed a solution in collaboration with Hewlett Packard and Texas Instruments.

Swoop Search has invented and patented the concept of Swoop Space shown in Figure 1 below; enabling intuition-based relationship building, providing a response to the usability requirements of big data. Swoop Space allows the user to start with simple intuition based on user experience, and build complex relationships iteratively without needing any programmatic skills for query generation.

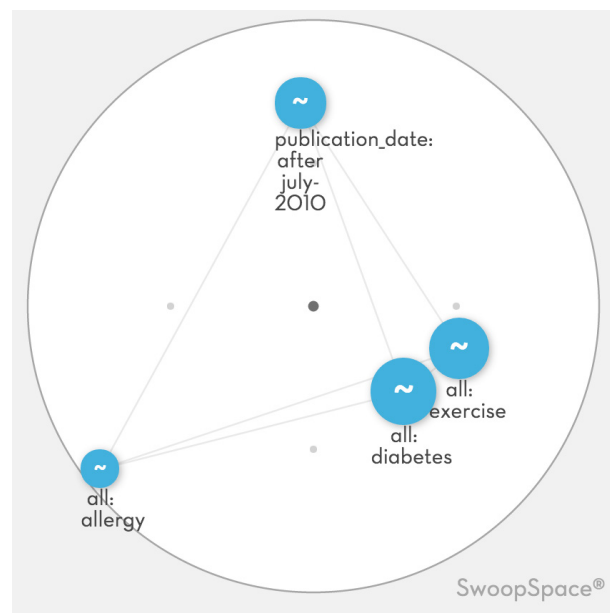


Figure 1: The patented Swoop Space represents a query consisting of allergy, publication date, diabetes and exercise, where a contextual relationship between exercise and diabetes in any field is emphasized over publication dates, which, in turn, are emphasized over allergy.

To solve the scalability challenge; behind the scene Swoop Space uses the HP Moonshot platform to harness the parallel compute capability of TI's C66AK2H DSP SoC architecture to provide balanced compute resources for big data.

The HP Moonshot platform, with up to 45 HP ProLiant m800 servers in a 4.2 Ru form factor



Figure 2: HP Moonshot System

(Figure 2), can deliver greater compute density and configuration simplicity even as you grow—simply add more server cartridges or an additional chassis with minimal cabling.

Value proposition

Without writing a single line of code, using Swoop Search's unique graphical search capabilities, users can create and manipulate multi-dimensional weighted visual queries to gain valuable insights into a variety of relationships within the data set connected to Swoop Space using concurrent connectors to a wide range of data sources.

Swoop Search's graphical interface yields an iterative process of query generation and result analytics. Query results, collections of results, or components of analytics may become valid query parameters as investigation evolves. Queries may be saved for future investigation, streaming data filtering or collaboration.

With this patented concept of Swoop Space implemented on an HP Moonshot-based server

backend, query performance is linearly related to the size of the big data. A twenty-node cluster yields two second query and analytic times on a 0.5 GigaByte dataset, representing 350,000 text records. Three twenty-node clusters, linked with High Availability Proxy support up to twenty users generating one query per second.

Conclusion

Swoop Search, with HP Moonshot utilizing TI DSP technology, has redefined the way people search and present unique solutions to solve complex big data problems. Swoop Search will provide its users with an intuitive user interface, scaling to manage terabytes of data with a response time that is unmatched in the industry.

More information

Swoop Search

<http://www.swoopsrch.com/>

HP Moonshot system

<http://www8.hp.com/us/en/products/servers/moonshot/index.html>

HP ProLiant m800 Cartridge

<http://www8.hp.com/us/en/products/proliant-servers/product-detail.html?oid=6532018>

Texas Instruments Incorporated 66AK2H SoC

<http://www.ti.com/product/66ak2h14>



Swoop Search

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