

Zerosum™ BIOCenters

Discovery to delivery... computing infrastructure for genetic media

Bioinfrastructure Services

The completion of a draft sequence of the human genome has opened the door to many new ways of using genomic information. Life science industries around the globe have become aware of the similarities in their studies and discovery efforts and of the importance *computing infrastructure* contributes to those discovery goals.

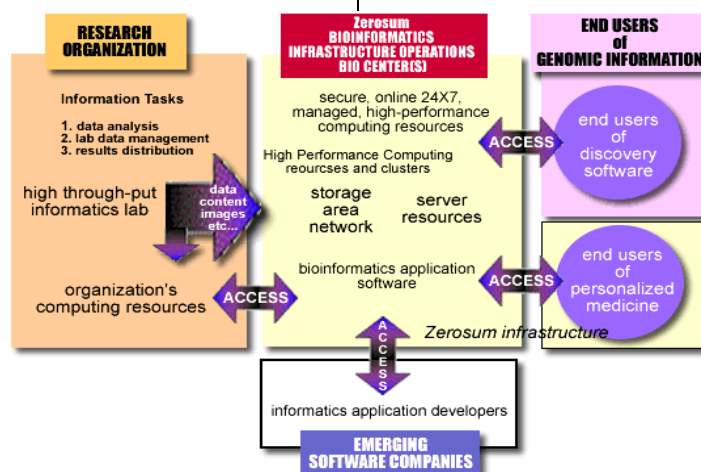
Today, companies, universities and research organizations are faced with managing two rapidly changing industries: **life science discovery** and **computer technology**. Each industry by itself is a very large challenge but together they can be overwhelming. These challenges provide us with an exciting opportunity. Zerosum, Inc. can provide companies with a *reliable and scalable discovery focused computing bioinfrastructure* to:

- **increase the speed of discovery** and product development
- **reduce the total cost** of technology ownership
- **focus on core business** activities of discovery and product development

The success of a life sciences organization can often be directly related to the quality and manageability of its discovery computing infrastructure resources. Every computing component from electrical power through databases and applications, server and storage hardware, and their indirect support costs collectively called **discovery-based computing infrastructure**, impacts their bottom line.

Our corporate mission is to provide the Bio-IT infrastructure that shortens the compute component of the drug discovery development cycle and then use the BIOCenter network assets to distribute personalized medical data wherever it is needed by the medical community.

Zerosum **bioinformatics infrastructure operation centers (BIO Centers)** provide infrastructure to the bioinformatics and life science community. BIO Centers allow dedicated access to database and compute facilities. Companies can continue to focus on their mission; independent of advances in infrastructure technology. As an experienced technology infrastructure provider, Zerosum can market economies of scale to the emerging life science entities at a consistent performance level and cost. Advances in the complexity of networking, telecommunications and computing hardware, operating systems, and management software are evolving to where organizations need to outsource technical operations and concentrate on their business. Zerosum can provide this critical discovery computing platform through its BIO Centers. These specialized BIO Centers allow customers to, store data, manage the life cycle of computing functions, run application software and deliver bioinformatics software tools around the globe. Combining access to genomic databases, hosting, managed and application services, and high performance computing resources through a global network of BIO Centers is a powerful platform for life science companies to have for rapid product discovery and development.



BIOCenter Overview

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Bioinfrastructure Services

Infinity Apps - Network access to clusters and HPC resources.

High performance computing (HPC) and clustering resources are all accessible through our secure virtual private network (VPN). These services let organizations use the speed and throughput of an HPC environment at a fraction of the cost it would be to own it. Our HPC capabilities are offered to commercial, research, and academia. Customers have use of the selected resources for the complete unit of time purchased. The HPC environment can be customized to meet specific requirements. Environments can be saved and restored for repeated access to the equipment. HPC Packages can include account privileges (root access), virtual security process using SecurID, online storage, job scheduling/monitoring, technical and help desk support, account management, backup, physical access security.

Grid resources and access are available upon request.

Note: you can request high priority job designations for an additional fee.

My Apps - Network access to biosoftware tools.

We provide access to software applications for customers or broadly distributed employees and research associates through our virtual private network VPN. Companies have found outsourcing the infrastructure allows them to exploit a wide range of opportunities. Applications running on our bioinfrastructure, increase access, enable more software sales, provide uniform and effective support, reduce costs, enabling fast time to market of products. Customers can couple this service with others to create the optimum distribution and computing platform required by the platform software.

My Storage - Network storage for massive data.

Moving forward with discovery projects, storage of vast amounts of valuable data will be a critical challenge for all informatics and life science companies. My Storage services permit data generated in microarray, x-ray crystallography, mass spec experiments and all other discovery operations to be stored in an accessible, secure, and scalable life sciences designed storage environment. As data storage grows the organization can have access without taking time to design, purchase and implement new technologies needed to address non-discovery related issues.

Discovery Space - Access to secure compute space.

Often an organization has need for additional physical space, and the related critical infrastructure connections, and they either don't have enough room at their present location or they simply don't feel it makes sense to build or lease new space. Discovery Space offers organizations room to push their growth beyond their own computational walls while maintaining their own assets in our reliable, secure, life sciences computing facility.

My Meds – Network access to personalized med data.

As discovery continues to advance the detailed information is being used for new and exciting medical services such as personalized medicine. Our My Meds services, provide the technology infrastructure for customers to securely and efficiently store and access large amounts of personalized genetic related medical data.

My Equipment - Access to specialized equipment.

Customers may use specialized equipment such as DNA computer time, compute farms with field programmable gate array chips

implementing bio algorithms and other technical equipment without the expense of owning it.

Discovery Data - Access to public data & data services.

- **public databases**
- **data file format interoperability** multiple operating systems access issues
- **sequence annotation and curation** - curate and validate genome annotations produced by an automated annotation software. Produce high quality annotation and curation of gene-related information and validation. Genome annotation of various organisms like bacteria, mouse, human. Annotation manually using their platform and curate those data's and validate the results.
- **data mining** - given sequence we provide the function using reliable public domain databases the client provides the Genbank accession numbers and we provide them the protein family and function, the sequence belongs to.
- **literature curation** - collecting the relevant and crisp information from the literature article related to the interest of work. The input from the client will be the literature articles and their area of interest. We read through the whole article and provide the abstract of the article which should be relevant to their area of work. Call for details.

Research Computing - Access to research consulting services.

To bridge the gap between new computing technologies and scientific research, academic and research institutions will benefit from Zerosum's Research Computing services. The Research Computing Services provide support and technical expertise for research-related computing needs to research faculty, staff, and students. The Research Computing services complement the services available within each organization's Information Technology group. Research Computing Services staff understands computer infrastructure and can provide configuration support, but they also provide consulting services on research and scientific application software. The research computing service offers hands-on training classes on research software and bioinformatics tools, and helps researchers find the tools they need for their research. The Research Computing Service also provides consulting on aspects of research projects that involve the use of hardware and software computing tools.

About us

Zerosum, Inc. is a two year old biotechnology startup providing life sciences information technology for drug discovery and the distribution of personalized medical data. A Pennsylvania C Corporation located in the south central part of the state, our corporate mission is to provide the BioIT infrastructure that shortens the drug discovery development cycle and then use the BIOCenter network assets to distribute personalized medical data back through the established virtual private network (VPN). Our BIOCenter provides organizations, and researchers, infrastructure resources through a seamless access via a *BIOCenter passport*. It is our belief that the discovery process should not have to wait for information technology resources to go through the expensive and lengthy acquisition cycle (budgeted, ordered, shipped, etc.). They should be instantly available, accessible, reliable, and scalable.