



## Virtualization Yields Value for Eco-friendly Hosting Company

### **Customer**

Affordable Internet Services Online, Inc.,  
AISO.net

### **Industry**

Web Hosting Services

### **Challenge**

The power consumption levels of this environmentally-conscious web hosting provider were making it increasingly difficult for the company to maintain its operations using solar power. Affordable Internet Services Online, Inc. (AISO.net) need an IT infrastructure that could reduce its power consumption, while maintaining responsiveness and high availability.

### **Why Sirius Computer Solutions**

Sirius Computer Solutions has the in-depth technology expertise to analyze client requirements and recommend a systems solution that met the eco-friendly hosting provider needs.

### **Solution**

AISO.net selected a new IT environment architected Sirius Computer Solutions and composed of IBM, Network Appliance, and VMware products, that met its energy consumption, system redundancy and scalability requirements as well as the corporate mission of an environmentally-friendly hosting infrastructure.



### **One vision generates computing power for tens of thousands**

Affordable Internet Services Online, Inc. (AISO.net) began as a result of one of those "What if" moments. In the mid 1990s, its founder and chief technology officer, Phil Nail, began brainstorming to create a "green" web hosting and network environment that would use the power of the California sun, in lieu of energy produced through traditional fuel sources. To implement his vision, he moved his family 50 miles from the sun-drenched coast of Dana Point to the arid desert of Romoland, Calif. where, ironically, the nearest town is called Sun City.



**Affordable Internet Services Online, Inc.**  
Reliable & Affordable Website Hosting  
Since 1997

## Key Benefits

- Virtual server capabilities of VMware provide the flexibility to host additional clients and increase revenue potential.
- Server and storage consolidation reduced data center power consumption by approximately 60 percent.
- Replacement of 120 white box servers with four, scalable and easy-to-manage IBM xSeries servers reduced cooling costs and the data center footprint.
- Cost savings and avoidances enabled the client to pursue additional environmental conservation solutions.

## Products:

### IBM® System Solution:

- IBM xSeries® 346 servers

### Network Appliance™ Solution:

- NetApp FAS270C with 10TB raw data storage

### VMware® Solution:

- VMware Infrastructure 3 with VMotion® application

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- Phil Nail, founder  
& chief technology officer,  
Affordable Internet Services Online



## Energy-efficient IT environment designed with respect for the environment

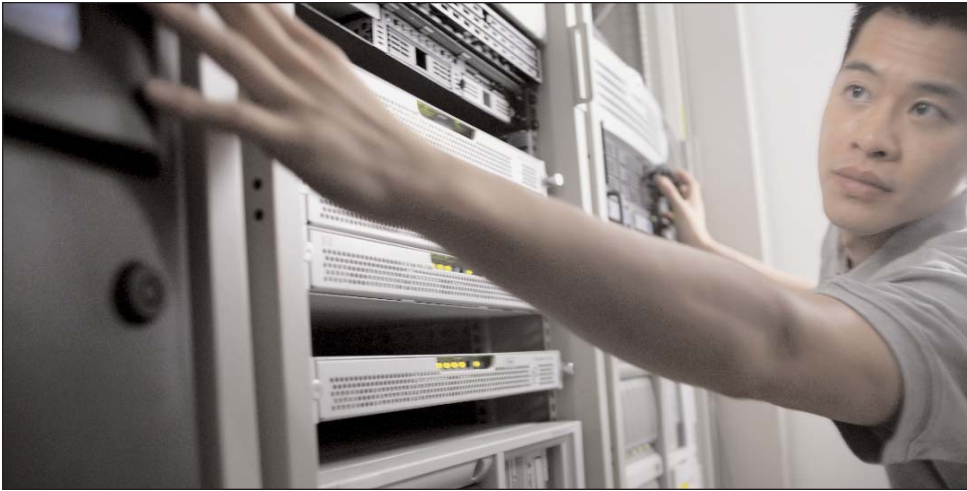
In Romoland, Nail's vision and commitment to an ecologically-friendly IT infrastructure-became reality. The AISO data center began as a steel framed building with 12" thick walls filled with recycled materials. Approximately 120 solar panels were thoughtfully positioned on the property to supply the power source for both the business and the family's home. Natural sunlight and solar tubes replaced the need for conventional lighting. A water-cooled system provides the cooling systems essential to the data center. The company installed a series of custom-built "white box" servers. Word of its environmentally-friendly web hosting capabilities spread. The satisfied customers who valued the ecologically sound IT environment, as well as, business, technology and environmental media touted the highly-reliable "green" web hosting and networking resources of AISO.net. The "What if" grew from a vision to a highly respected, successful business serving over 15,000 clients in 2006 throughout the world. It is one of the few truly "green" hosting environments that relies exclusively on clean energy--power generated by solar panels. Many companies purchase green energy credits and claim to be "green." While these credits contribute to the costs of alternative energy production, the companies actually use traditional power sources.

## The popularity of the "green" environment drains resources

The energy and system demands of AISO.net increased as its number of eco-conscious users grew. When they analyzed the situation, Nail states, "Our initial requirement was redundancy for systems backup." He continues, "But we also needed a solution where we could continue to grow without the need for more electricity or cooling." The cooling and power consumption of the 100+ plus server and storage systems environment endangered the company's ability to maintain its prized energy self sufficiency. AISO.net considered adding more solar panels. "Instead of investing in more solar panels, we looked at reducing our data center footprint and the number of servers," Nail states.

## The Sirius solution for power conservation and system efficiency

Sirius Computer Solutions architected a solution that solved AISO.net's power consumption and system redundancy challenges by combining its industry know how and depth and breadth of resources found through its partnerships with IBM, Network Appliance, and VMware. Nail was impressed with Sirius's local resources and partnerships. He said, "We looked at other companies that could do VMware. Sirius seemed the most knowledgeable, answering our questions faster. They had even worked with some of AISO.net's clients."



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*- Phil Nail, founder  
& chief technology officer,  
Affordable Internet Services Online*

### **Server consolidation increases floor space, shrinks power consumption**

First, Sirius created a solution for server consolidation that reduced 120 physical servers down to four IBM xSeries 346 servers. The xSeries 346 server, with Intel® Xeon™ processors, was selected for its easy deployment and management features, including Internet Small Computer System Interface (iSCSI) capabilities. iSCSI is used to facilitate data transfers over the Internet and intranets and to manage storage over long distances—a critical element to the solution design.

### **Virtualization increases capacity and supports redundancy**

The VMware VMotion application, a component of VMware Infrastructure 3.0, was installed on the IBM servers. Using this application, AISO.net could configure virtual servers to match the needs of its clients—whether a dedicated server or application support. VMotion creates a dynamic, automated and self-optimizing data center environment by migrating workload between physical servers using "virtual machines." It can provide AISO.net with continuous service availability, zero downtime and transaction integrity—qualities essential in a hosting environment. VMware Infrastructure 3.0 is designed for integration into an iSCSI environment minimizing compatibility challenges in the environment. VMotion also gives AISO.net the ability to create virtual servers that enhance their backup and system redundancy. Nail adds, "Clients like [the fact] that we are totally redundant."

### **NetApp Snapshot™ advances redundancy with critical point-in-time views**

To further satisfy redundancy needs, two Network Appliance FAS270C systems were installed. The NetApp FAS270 solution integrates high-speed file backup and disaster recovery functionality that was particularly important to AISO.net. NetApp Snapshot technology, a standard feature of the NetApp Data ONTAP® software, enables the creation of a point-in-time copy of a file system. Leveraging this technology, AISO.net can implement data protection solutions that range from single file recovery to a large-scale disaster recovery. The unmatched simplicity of the NetApp FAS270 systems required no additional administrative support to manage and give AISO.net the security of reliable data backup at a low total cost of ownership. "We chose NetApp for the Snapshot feature," says Nail, "so we could 'snap back' to the most recent image if necessary."

The Sirius-designed iSCSI solution was a first-of-its-kind. Nail commented, "Sirius explained the options and got us set up—which wasn't easy because we were using a 'bleeding edge' solution." Up until the installation of the solution at AISO.net, the integration and compatibility of an IBM, VMware and NetApp solution had not been field tested. As a result, Sirius Computer Solutions was able to provide valuable feedback to each of the organizations.



### Recycling cost savings to further the green environment

Upon the initial migration of the workload from 120 servers, AISO.net achieved a drastic 50-60 percent reduction in power consumption. After its initial migration, AISO.net added two IBM xSeries server and one additional storage shelf to their FAS270, further increasing its redundancy and capacity capabilities. Upon completion of their migration plan, Nail anticipates an 80 percent decrease in energy usage as compared to their previous infrastructure configuration. AISO.net is already reaping the benefits of its initial solution adding an average of 10 to 12 virtual servers per month since November 2006.

Continuing to prove its commitment to be the best, most reliable eco-friendly hosting company in the world, AISO.net is using their cost savings to make improvements in its facility. "We are adding a green roof to our facility that provides additional insulation," declares Nail. A green roof is composed of 3" to 4" of soil with drought-resistant plants that feed oxygen back into the environment. They are replacing all of the compact fluorescent light bulbs with energy-saving and mercury-free LED lighting. Nail continues to investigate other IT-related services such as the virtual terminal market to further his calling for the use of clean energy and environmentally-friendly solutions for the industry.

### For more information

For more information on power efficient, advanced infrastructure solutions for your organization, please contact your Sirius Account Executive or visit [siriuscom.com](http://siriuscom.com)

### About the companies

IBM  
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[netapp.com](http://netapp.com)

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