



# Virtual Hosting

## *Tried, Proven, and Green: An Analysis of Virtual Hosting*

On a global scale, the web hosting business has become an immense industry in a relatively short amount of time. Its growth can be attributed to the fact that more organizations are discovering the benefits of establishing an online presence, and thus require a website and hosting services. Since most companies are lacking the extensive – and often cost prohibitive – infrastructure actually needed to make their site available on the internet, many of them rely on the services of web hosting providers.

Despite the increasing importance and demand for web hosting services, this is an industry that leaves behind a rather nasty footprint on the environment. The business as a whole is believed to be a growing contributor to a multitude of environmental issues.

On the other hand, there is one segment of the industry that takes an eco-friendly approach by nature. It is known as virtual hosting. In this white paper, you will learn why virtual hosting is a viable option for businesses that are serious about “going green” with their online business initiatives.

### **The Internet and Its Threat to The Environment**

Conducting business over the internet is largely regarded as having a low carbon impact in comparison to traditional methods. This is primarily because traditional activities typically require the use of tons of paper and non-renewable energy. In contrast, the internet’s low carbon impact is a fact you will often hear touted by email marketing firms and other companies that target eco-conscious businesses and consumers.

Unfortunately, the internet and the infrastructure that supports it are far from environmentally-friendly. The data centers, the servers, the routing equipment – it all amounts to wasteful, carbon-heavy components that take a toll on the atmosphere. Even though you may be offloading these activities onto a service provider, the efforts required to maintain your web presence still make you a contributor to the ongoing problem. Whether you want to consider those contributions directly or indirectly is all a matter of preference and conscious.

## **Green Hosting Offers to The Rescue**

A few years ago, green web hosting emerged, offering the promise of delivering the same hosting services needed for businesses to become established online, all while dramatically reducing their carbon footprint in the process. The best of these companies take initiatives to live up to their claims, making efforts such as customizing their data centers with energy-efficient equipment and cutting back on paper consumption in the office.

While these initiatives are certainly worthy of applause, even the data center that is stocked with energy-efficient hardware is still heavily reliant on coal and other non-renewable energy sources. And if you don't already know, using non-renewable energy is a practice that comes with detrimental consequences. The potential risk for higher cancer rates, the annihilation of ecosystems, and global warming are just some of the repercussions that have been identified.

## **Some Numbers to Chew Over**

If you still are not convinced about the impact web hosting has on the environment, perhaps the following statistics will serve as persuasion:

- According to a study conducted between 2000 and 2005, the electricity consumed by global data centers was equal to the amount of 14 coal burning, 1,000-megawatt power plants, more than enough to power a major metropolitan city.
- Carbon offset service Move Neutral calculates that in one year, a single web server is capable of producing two tons of carbon dioxide. That is more CO<sub>2</sub> emissions than the average automobile generates annually.
- Energystar.gov estimates that the overall impact of operating all servers in the United States alone is equivalent to the production of five nuclear power plants.

## **Your Choice Makes A Difference**

Although it may appear to be an insignificant decision, even something as simple as choosing a web hosting provider can have a major impact on the environment. After all, the choice you make is combined with the millions of other people who believe they are making the same insignificant decision.

There is currently a number of green web hosting providers in the game, but when their claims are put to the test, very few of them are able to prove that they are truly dedicated to the green initiative and making a difference. While helpful, even the purchase of carbon offset credits alone is not enough to make a notable difference in how data center emissions damage the environment.

When it comes to web hosting, there is only one green technology that exists, and that technology is virtualization.

## **Why Virtualization?**

The very nature of virtualization, the process which is at the core of virtual hosting, makes it an eco-friendly technology that goes a long way in reducing carbon emissions. By allowing for the consolidation of multiple

operating systems on a single physical server, virtualization makes efficient use of available resources, all while helping companies improve business performance .

Business clients utilizing VMware technology, the leader in this emerging field, have greatly reduced their energy consumption and cut costs by up to 80 percent. Overall, this technology has helped customers save millions of dollars in capital investments and operational expenses.

### **Real Examples of Virtualization's Energy Savings**

Proof of virtualization's power as a legitimate green technology can be witnessed in its application by Sheffield Hallam University, a prestigious educational institution located in The United Kingdom. The school found itself with a huge dilemma, as its power grid lacked the energy needed to support the server hardware and supporting components in the university data center. The problem was compounded by its increasing reliance on IT, which called for new hardware and services to be added on a constant basis, a factor that obviously made physical space scarce.

Luckily, Sheffield Hallam University was able to find a solution to that problem in VMware Infrastructure 3, a virtualization platform that consolidates the data center environment by reducing energy and cooling requirements and optimizing the delivery of IT services. The platform turned out to be an effective method for lowering energy costs and helping the school resolve its spacing dilemma. Today, Sheffield Hallam University cuts back on an estimated 269 tons in carbon dioxide emissions and saves £43,000, or more than \$66,000, on its electricity bills annually.

A more recent example can be seen in the story of Earth Rangers, a Canada-based non-profit organization that works closely with children to preserve natural habitats. To support its mission, the Rangers set out to build a data center that was not only fully functional, but energy-efficient as well. The technology selected for the job? Virtualization.

By creating a virtual infrastructure, the organization was able to eliminate 90 percent of the hardware that would be required by a traditional server deployment. According to Rob DiStefano, Earth Rangers IT Systems Manager, that infrastructure turned out to be the centerpiece that would drive the architecture for the majority of the facility. In conjunction with energy-efficient hardware, the virtual environment enabled Earth Rangers to cut its energy costs by nearly 85 percent, proving that virtualization is a technology that not only goes easy on the environment, but also delivers major cost savings.

### **Added Benefits of Virtualization**

Virtualization is growing rapidly as a green technology. It is also becoming more important and accepted in the world of IT. Though the process that it utilizes may seem complex on the surface, it essentially relies on a layer of software that lies beneath a host operating system and allows physical servers to run their own virtual entities. This technology has proven to be quite versatile, as it works for computers, networks, applications, storage facilities and other critical infrastructure components.

Above all, virtualization is incredibly efficient, as you will see by examining some of the additional benefits it has to offer:

**High Level of Availability** - If one server in a virtual infrastructure goes down due to an outage or hardware malfunction, the data that server contains can be easily transferred to a virtual counterpart. This decreases downtime and service interruptions that could potentially serve as an inconvenience for customers and your business.

***Simplified Infrastructure Management*** - With thorough planning and strategic execution, virtualization can work wonders at reducing the amount of time and costs required to manage an IT infrastructure. This is made possible by the ability it provides to provision and administer multiple virtual systems from a centralized area.

***Hassle Free Software Evaluation*** - One of the biggest perks virtualization has to offer for skilled administrators is convenience, particularly when it comes to testing software. It is very common for developers and other professionals to use virtual hosting to evaluate applications before fully integrating them into their systems. Virtualization allows software testing to be performed without the need for complex installations or configurations, both of which can result in delays and other problems.

***Less Space Requirements*** - Another major benefit of virtualization is one that was touched on in our example above: its proven ability to substantially minimize space requirements. Because it makes it possible to simulate a multitude of virtual systems within a single physical server, the need for less hardware is the result, allowing organizations to preserve space in the data center, server room, or wherever they house their equipment.

### **The Need For Virtual Hosting**

For businesses that lack the resources or do not have the need to deploy a virtual infrastructure internally, virtual hosting is the ideal alternative. When partnering with a service provider, you do not have to worry about any of the necessary hardware or software because there is none to purchase. You simply pay a fixed monthly or annual fee, in return for the provider's virtualization software, hardware, and infrastructure.

As far as the green benefits, they are actually quite plentiful. Below are just a few of the many benefits that attract businesses to virtual hosting:

***Environmental Responsibility*** - Earlier, we highlighted the statistics on the effect data centers had on the environment up to 2005. Five years have passed, so just imagine how much that number has climbed, especially given the explosive growth of the IT sector. Add this to the fact that coal accounts for more than 50 percent of the electricity production in the United States alone, and it becomes easier to understand why the need for genuine green hosting is such a hot button topic these days. It is important for professionals to be more conscious about how their business activities impact the environment. If you are already one of them, investing in a virtual hosting plan would be a great place to start.

***Cost Effective*** - Upon first being introduced, virtual hosting was quite expensive. In fact, some companies priced their packages as high (while others still higher) than dedicated servers. Due to its rising popularity and the awareness associated with green initiatives, the price for virtual hosting plans has come down significantly in recent times. It is now possible to easily find a package with a price that is not too far removed from traditional shared web hosting. The cost savings and ability to do more with less makes it a real bargain in terms of price value.

***Ease Consumer Concerns*** - At one time, going green was among initiatives that were widely viewed as something that only environmental activists noted. Take a look around you, and you will see that those times are long gone. Day to day activities are taking a toll on the planet, and for this reason, such initiatives have garnered mainstream attention. These days, consumers are making considerable efforts to reduce their carbon footprint, and many of them would prefer for the companies they support to adopt the same mentality. While there is certainly much more to it, virtualization qualifies as a valiant effort towards making a difference.

**Improve Business Performance** - Sadly, “green” has become one of the most abused marketing gimmicks in the web hosting industry. Unscrupulous companies leverage the term to pad their pockets with the money from clients who are truly concerned about the impact their business activities have on the environment. The good thing about virtualization is that it is not only an efficient technology for hosting, but also legitimately eco-friendly by default. Once you invest in a virtual hosting solution, you can advertise your business as being green, boost your sales, and feel good while doing it.

### **Finding the Right Partner**

There have been a number of companies to jump on the bandwagon and tout themselves as green web hosting providers. This is undoubtedly encouraging to see, but as mentioned above, some of them are just leveraging a highly effective marketing ploy to reel in more customers and generate more revenue.

In order to get the most from their investment, prospective clients must conduct extensive research and thoroughly evaluate the market to make sure they are doing business with a solid company that has their best interest at heart. Most importantly, they need to weed out the pretenders and find a partner that can be trusted. Neglecting to do so could leave you stuck with a service that fails to live up to your expectations in terms of both enabling you to reduce your carbon footprint, as well as delivering the quality needed to operate your business with the utmost efficiency.

Headquartered in Totowa, New Jersey, Xaccel Networks is one of the premiere players in the virtual hosting market, possessing the technology and expertise to truly help your business go green. Offering a diverse selection of packages built on award-winning VMware server platforms, the company delivers the control, flexibility and stability needed to service development tasks and mission-critical business processes alike. Whether you require a more secure environment or have simply outgrown the confinements of traditional shared hosting, Xaccel Networks has a cost-effective solution suited for your endeavors.

With data centers located in Philadelphia, Pennsylvania and Houston, Texas, Xaccel Networks is prepared to provide high quality virtual hosting solutions for customers with more demanding needs. Each of its facilities is SAS-70 HIPPA compliant to ensure reliability and complete with state of the art features that guarantee your service enjoys the highest level of availability. Full redundancy is provided by the replication of every bit of data between both data centers and robust VMware platforms that run on the best breed of Sun Microsystems server hardware. Backup generators and UPS systems are in place to ensure availability in the face of outages and service interruptions, while advanced security mechanisms give you the peace of mind that comes from knowing your investment is protected at all times.

From industry-leading bandwidth connections and blazing internet access speed to comprehensive hosting solutions and affordable pricing, Xaccel Networks has the foundation organizations and professionals need to thrive in today’s demanding web-based environment. Leveraging a top-notch IT infrastructure built from the ground up, its virtual hosting solutions are tailored to give your business a competitive edge and simultaneously help make your green initiatives an overwhelming success. Coupled with around the clock 24/7 customer service and technical support, these qualities make Xaccel Networks a solid choice for your virtual hosting needs.

### **Conclusion**

The green movement is in full effect in the IT realm, and virtualization has become one of its most reliable and efficient tools. Some of the top brands across various industries have made a commitment to reduce their power consumption, and this technology is being used as a key component in their initiatives. Thanks to the positive

attention and the ability it provides to quickly and effectively reduce carbon footprints, virtualization has become an attractive solution highly sought after by organizations all over the world.

However, it is important to note that unless the proper infrastructure and adequate tools are in place, organizations can actually end up doing more harm than good and lose out on the very benefits they initially sought out. This is what makes virtual hosting such an essential service.

Virtual hosting does indeed offer the real promise of consolidating servers and resources, lowering heating and cooling expenses, and reducing power consumption. These are all enticing benefits, but they cannot be obtained without the right equipment, environment, and management expertise. Businesses that are out to truly reap the cost and power saving benefits of virtualization would be wise to attain the services of a hosting provider that has the infrastructure and knowledge to deliver on its promise. The success of your green initiatives and reputation of your brand could depend on it.

### Research Sources

1. Alarming Trends: The Internet's Carbon Footprint  
<http://www.greenpacks.org/2009/05/06/alarming-trends-the-internets-carbon-footprint/>
2. What's the carbon footprint of ... the internet?  
<http://www.guardian.co.uk/environment/2010/aug/12/carbon-footprint-internet>
3. Data Center Energy Consumption Has Doubled Since 2000 -  
<http://www.informationweek.com/news/global-cio/showArticle.jhtml?articleID=197006210>
4. Move Neutral Calculations  
<http://www.moveneutral.com/calculations>
5. Energy Star Servers  
[http://www.energystar.gov/index.cfm/ia/news/images/banners/index.cfm?fuseaction=find\\_a\\_product.showProductGroup&pgw\\_code=DC](http://www.energystar.gov/index.cfm/ia/news/images/banners/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=DC)
6. VMware Green IT Energy  
<http://www.vmware.com/virtualization/green-it/>
7. Green Technology -Going 'Green' with VMware Virtualization Cuts Costs  
<http://green.tmcnet.com/topics/green/articles/27174-going-green-with-vmware-virtualization-cuts-costs.htm>
8. Investing in virtualization has Green IT payoffs  
<http://blogs.techrepublic.com.com/datacenter/?p=928>
9. What Does Virtualization Mean To You?  
<https://www.insightcommunity.com/case.php?iid=1288>

Xaccel Networks LLC  
380 US Highway 46 Suite 500  
Totowa, NJ 07512

Phone: 201.806.2602  
Fax: 201.806.2604

© 2010 Xaccel Networks LLC. All rights reserved. All other marks and names mentioned herein may be trademarks of their respective companies.

