

Cisco Security Solutions for Environmental Sustainability



Introduction

Now more than ever, individuals, organizations, and companies are looking at environmental effect as a strong factor in their decision-making process. What type of automobile should I buy? What is the most effective way to expand my office space? What should my corporate policy be for employees working from home? These are the types of questions that have introduced additional considerations because of the emphasis on being green.

At the same time, IT security requirements have become no less important. New threats continue to surface, and business factors concerning risk management and compliance have fueled the need to build more complete solutions. It is no longer desirable to address a security need with a single point product. Over time, as needs mature and multiply, this approach leads to additional complexity, operational costs, and risk. Products, technology, and services that work together as a system are an effective way to reduce that risk while keeping the business agile and compliant.

As these factors collide, executives, security, and IT managers are now applying those same green criteria for their security infrastructure decisions.

Cisco Security and Green

Cisco's approach to security takes advantage of using innovative technology in a systems approach. This strategy allows businesses to build holistic solutions to meet evolving security demands such as threat management, data loss, and compliance. At the same time, Cisco® products and solutions have some benefits associated with being eco-friendly. For example, Cisco engineers consider the entire lifecycle of their security products, building long-lasting products that also consider physical footprint, packaging, documentation, power consumption, and ultimately decommissioning and disposal. The following section examines several Cisco security solutions and their effects on environmental sustainability.

Cisco Virtual Office and the Telecommuter

The [Cisco Virtual Office](#) and Cisco Secure Sockets Layer ([SSL VPN](#)) solutions are secure methods to extending office-quality services to the remote workforce. Smart businesses are realizing the benefits that a distributed workforce can provide through both flexibility and productivity for the workforce as well as a reduction in costs through facilities and real estate. Changing the way people work also provides benefits to the environment, including:

- Eliminating the need for travel and commuting
- Reducing greenhouse gas (GHG) emissions, pollution, and congestion on the roadways
- Reducing overall net energy consumption
- Reducing costs in energy and materials through personal work environments over fixed offices



As an example, currently more than 14,000 Cisco employees are using the Cisco Virtual Office solution (on both a full-time and part-time basis). Through the results of an internal survey, it was estimated that the average employee saved 2.81 hours of commuting time per week and reduced up to 2.5 tons of CO2 emissions per year.

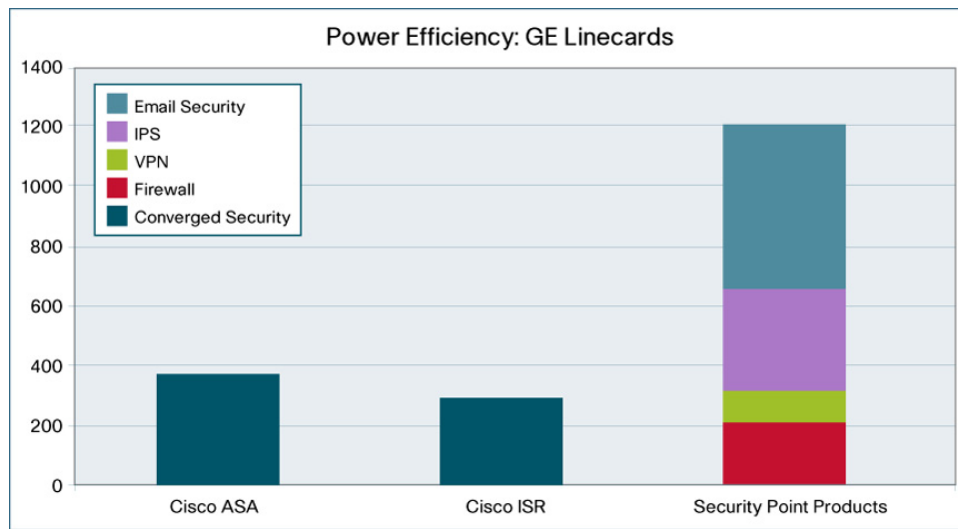
In addition, the Cisco Virtual Office solution allows organizations to reduce real estate and energy costs through the transition to a connected workplace. The connected workplace is a flexible office environment with enhanced communication capabilities designed to improve employee collaboration and productivity. When a shift occurs from individually assigned workspaces to a more open environment, less space is needed per employee, significantly reducing real estate expenses as well as building energy consumption. The improved collaboration environment also improves employee productivity. The connected workplace currently in pilot at Cisco is projected to represent 3000 out of the 22,000 employees on the San Jose campus. The projected real estate cost reduction is \$82.5 million, and the projected annual energy cost reduction is \$0.6 million.¹

Cisco Adaptive Security Appliance and Cisco Integrated Services Router

Building upon the principles of convergence, modularity, and deployment flexibility, Cisco security appliances provide a way to deploy a holistic security infrastructure while being mindful to reduce energy consumption. Platforms such as the [Cisco adaptive security appliances \(ASAs\)](#) combine multiple security technologies and features that make it a centralized one-stop shop to implement security solutions. By including firewall, site-to-site VPN, remote access VPN, intrusion prevention system (IPS), and content security capabilities, consumers can enjoy the benefits of drastically reducing energy consumption when compared to a point product approach. (See Figure 1.)

¹ Source: Cisco IBSG 2008.

Figure 1. Comparison of Power Consumption (W) Between Cisco ASA 5540 Adaptive Security Appliance, Cisco 3845 Integrated Services Router, and Dedicated Security Appliances



Similarly, the Cisco router and switch platforms such as the [integrated](#) services routers provide many of the same capabilities, allowing businesses to further use their network infrastructure to extend their security footprint. By enabling the routers with firewall, VPN, IPS, and content filtering features, they allow costs savings for the company while also reducing the carbon footprint.

Cisco Virtual Firewalls

With business trending toward efficiency and optimization, virtualization is increasingly important to reduce physical footprint requirements, load balance traffic, improve power consumption efficiencies, and reduce emissions. Virtualizing security in this new landscape begins with the infrastructure such as VLANs and virtual firewalls. The [Cisco ASA](#) supports virtual firewalls that allow the single appliance to be logically divided into multiple security contexts. This becomes extremely important for deployments at the data center edge, service providers that want to provide this service to their customers, or any organization looking for granular and flexible firewall control.

Sustainable Product Development

Cisco is aggressively employing product development techniques to help ensure that individual products do their part to decrease the drain on corporate resources. Here are some of the ways in which Cisco is developing more sustainable security technology:

- Regulatory compliance:
 - Power supplies and power cords are Energy Star certified, allowing them to comply with the California Energy Conservation (CEC) requirement.
 - Cisco complies with the European power supply initiative.
 - Cisco is compliant with Restriction of Hazardous Substances (RoHS) Directive 6, making sure that its products are free from hazardous metals.
- Waste reduction:
 - Cisco provides documentation in digital format on CDs instead of printed paper, allowing the company to save more than 2200 trees per year, or enough power to heat more than 65 homes for an entire year.

- The Cisco Takeback and Recycle program helps businesses dispose properly of surplus products that have reached the end of their useful life, reducing the burden on disposal and landfill facilities.

Conclusion

Cisco recognizes the important role that it can play in helping to reduce the carbon footprint of businesses. As these organizations look to use IT for better collaboration, improved productivity and efficiency, and cost control, environmental sustainability becomes a primary consideration. With Cisco's solution strategy, eco-friendly decisions can be made without sacrificing any of the functionality or effectiveness of a complete security infrastructure.



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