

Juniper Networks Commitment to Environmental Issues

Juniper Networks, the leader in high-performance networking, is committed to energy conservation and environmentally-friendly business practices. Juniper is dedicated to doing its part to protect the environment, conserve energy and natural resources, and reduce pollution through the application of responsible business practices and energy efficient technologies across the company's daily operations and product designs.

Juniper strives to set new energy efficiency standards in the networking industry, with environmental and energy conservation initiatives that focus on:

- Minimizing the overall impact the company has on the environment
- Delivering high-performance network infrastructure that complies with environmental regulations and directives, and supports the energy efficiency goals of Juniper's customers

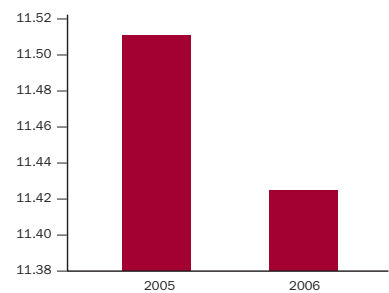
Minimizing the Impact of Juniper Networks on the Environment

As a responsible corporate citizen, Juniper promotes environmentally-friendly business practices to improve the workplace for its employees and the community at large. Juniper has instituted many policies and programs aimed at both reducing the company's carbon footprint and promoting an environmentally friendly lifestyle. In recognition of its efforts, Juniper was certified in May of 2006 as a Green Business by Santa Clara County, and has been named one of the Best Workplaces for Commuters on an annual basis, from the inception of the program in 2003 until present, by the Best Workplaces for Commuters regional program (a program previously managed by the Environmental Protection Agency).

- **Juniper is conscientious about reducing its energy consumption and carbon emissions.**

Juniper has invested in the infrastructure and systems to be able to inventory and measure its carbon footprint on a global basis. Greater energy efficiency remains an ongoing effort, with different regions of the world presenting diverse challenges, but Juniper's goal is to be able to credibly account for its emissions and continue to work significantly to reduce its carbon footprint over time. The company has many energy saving initiatives well underway, including making changes to its physical sites, as well as leveraging virtualization software to reduce the energy, cooling and space requirements of its global Data Centers.

Metric Tons CO2 Emissions per Full Time Employee*



■ MT CO2 per FTE occupant
*only Full Time workers of surveyed sites are included.

- **Juniper strives to be a zero waste company through recycling or reuse.** Two years ago, Juniper switched to providing biodegradable cups in the breakrooms and is switching to bioware for its breakrooms and cafeterias. Juniper has a comprehensive recycling program for bottles, cans, paper, and media and is rolling out an in-house program to recycle technology, providing an inventory of all equipment not currently in use to all facilities worldwide to access.

- **Juniper is driving change within the communities it operates.** The company partners with other environmentally conscious companies, suppliers, and vendors to take meaningful measures to try to change local practices or increase facilities that support environmentally-friendly initiatives.
- **Juniper works to reduce commute pollution.** Juniper locates its offices, whenever possible, near mass transit solutions and either provides or subsidizes mass transit passes to its employees. The company has a variety of programs to encourage alternative modes of transport. Juniper promotes a culture of telecommuting, leveraging its own technology to enable remote workers to always be connected to the resources they need to do their job wherever they are. Juniper's industry-leading SSL solution makes it easy for employees to work from home or remotely, and enables the company to support home offices instead of having to open very small satellite offices. This not only reduces commute pollution, but also the recurring energy costs associated with operating office space.

Juniper Networks Industry Regulation and Directive Compliance

Because Juniper's facilities and operations are located in over 45 countries around the world, there are many different standards and regulations to which the company must adhere. Juniper's practice is to understand the most stringent requirements and then apply them globally. As a result, Juniper Networks is in compliance with some of the industry's strictest environmental standards, meeting and often exceeding the requirements posed by local and international laws to maintain its status as a responsible corporate citizen in all locations in which the company operates. Some of the standards Juniper is working towards applying globally include:

- European Union's (EU) *Waste Electrical and Electronic Equipment (WEEE)* Directive – Juniper provides recycling support for its equipment within the EU. Products returned through Juniper's reclamation process will be recycled, recovered or disposed of in a responsible manner utilizing an ISO 14001 compliant supplier. The company's packaging is designed to be recycled and should be handled in accordance with the local, state or country recycling policies and procedures.
- European Union's (EU) *Restriction of Hazardous Substances (RoHS)* Directive – Juniper has eliminated or reduced below legal limits its usage of the substances controlled under the directive, subject to limited exemptions available for its products. The company continues to improve its product designs to meet the changing environmental requirements through the implementation of Design for Environment (D4E) practices.
- *Electronic Industry Code of Conduct (EICC)* – Juniper is aggressively working towards the adoption of the EICC, which outlines standards to ensure that working conditions in the electronics industry supply chain are safe, that workers are treated with respect and dignity, and that manufacturing processes are environmentally responsible, by all of its suppliers.

Energy Efficiencies Delivered by Juniper Networks High-Performance Network Infrastructure

Due to the pivotal role Juniper Networks high-performance networking solutions play in the underlying foundation of the Internet and worldwide communications infrastructure, Juniper is committed to pushing the envelope by delivering innovative products that work to solve its customers' most difficult problems. This translates to offering products, solutions and services that meet not only high-performance (availability, reliability, security, management, etc.), but also operational (space, energy, management, etc.) requirements.

Juniper is dedicated to innovating, with more than \$600M in research and development invested in 2007, to advance the fundamentals and economics of high-performance networking. Juniper is committed to enabling a sustainable energy future, striving to deliver efficiencies within its products to help customers meet their energy requirements now and in the future. Juniper currently helps customers maximize the utility of their solutions and minimize their energy consumption by delivering solutions that offer space, energy and cooling savings, enabling the reuse of hardware and offering anywhere, anytime secure remote access:

Juniper Delivers Space, Energy and Cooling Savings

Maximum Efficiencies

Juniper strives to deliver solutions that deliver increased throughput using less energy than competing products on the market, giving customers the opportunity to reduce their space, energy and cooling requirements. Some examples include:

- The New EX-series – Ethernet switch family – will use about 80 percent less space than rival equipment and save customers approximately 65 percent on power use.
- The T1600 – a new multi-terabit capable core router – consumes 30 percent less power, requires 30 percent less cooling, and takes up half the physical space of competitive platforms.
- MX-series – Carrier Ethernet routing and switching family – offers energy efficient Carrier Ethernet solutions that are 2.5 to 3 times more power efficient than competing products

Integrated high-performance network infrastructure

Juniper Networks offers a broad range of integrated high-performance networking products, offering customers the simplicity and efficiencies associated with replacing a number of single, discrete devices with a single solution:

- For branch/smaller locations, businesses can consolidate as many as four or five devices (FW, VPN, Intrusion Prevention, Anti-virus, Web filtering, etc.) into a single Juniper Networks Security Services Gateway (SSG), reducing the physical space requirements and resulting in a reduction of energy and cooling consumption costs, as well as overall management expense.
- At the core of the network, Data Centers and larger facilities, businesses can consolidate up to three or four devices (FW, VPN, Intrusion Prevention, etc.) into a single Juniper Networks Integrated Security Gateway (ISG) to reduce energy and cooling consumption.
- Juniper's EX-series switches offer scalable port densities and carrier-proven high availability features that consolidate legacy switch layers, helping to reduce both capital and operational expenses (space, energy, cooling).
- Integration of security features into JUNOS, Juniper's single operating system, means customers are able to further maximize their routing and switching platforms.

Right-sized solutions

Juniper offers a range of solutions in each product family, so that a customer can choose the one that is most appropriate for their deployment. These right-sized solutions prevent over-engineering that can result in wasteful energy consumption. Juniper has brought many innovations to market to ensure customers can deploy only what they want and need to ensure maximum utility, such as:

- The EX-series switches are designed to deliver scalable port density and performance. For example, the EX 4200 series Ethernet switches with Virtual-Chassis™ technology deliver the same Gigabit Ethernet (GbE) and 10GbE port densities as traditional chassis-based switches, but at one-eighth the footprint and less than one third the cost, providing businesses an economical pay-as-you-grow approach to building high-performance networks.
- Juniper's E120 – a Broadband Services Routers - can run on a standard 60amp electrical Circuit versus the 80amp circuit of competing products, saving both energy and the facility build-out costs associated with bringing high-amp circuits to the racks in smaller points of presence (POPs).

Virtualization features

Many Juniper solutions include virtualization features, which enables multiple individual instances of a solution to run in a single physical device, to deliver efficiency gains. For example, Juniper routers support virtual routers and its firewalls support virtual systems, enabling a single device to independently process and manage traffic from different customers (e.g. in the case of a service provider) and different rule sets (e.g. for different parts of the same enterprise network). Juniper also has a carrier-class SSL VPN solution with end-to-end virtualization capabilities that enables service providers to offer remote and extranet access, disaster recovery and Intranet LAN security services (e.g. wireless LAN, VoIP) to their

enterprise customers worldwide. Being able to maintain the integrity of many independent systems within a single physical device means that multiple devices no longer need to be deployed in the network, saving space, energy and cooling costs.

Maximum network utilization

Juniper's WX family - application acceleration solutions - is designed to improve the performance of business critical applications across the WAN and translates into more efficient use of application servers, reducing the need to deploy more infrastructure and resulting in less energy and cooling consumption. For example, when using the WX to improve SAP application performance, customers are able to reduce server utilization by up to 50 % and gain compute capacity back on existing server infrastructure. As a result, customers can maximize the utility of their application servers and reduce the number they need to deploy, saving energy and cooling costs.

Juniper Enables Reuse of Hardware

Juniper strives to deliver solutions that have an extended life cycle to divert hardware from landfill and reduce overall waste. In addition to adhering to the strictest standards for reuse, recycling and reclamation of information technology solutions, Juniper helps customers "future-proof" their network, to the extent possible, and extend the life of their infrastructure.

Juniper's advantage is delivered via its single Operating System (JUNOS) and modular architecture. The singular OS across the portfolio enables Juniper to deliver new offerings to the market that are compatible with its previous high-performance networking infrastructure, maximizing the utility of the infrastructure and enabling customers to deploy new solutions with minimal architectural changes or disruption. Combined with the modular architecture, Juniper is also able to deliver solutions that allow for the reuse of existing hardware and line cards. For example:

- Juniper PICs can be reused in almost all of the network infrastructure solutions. This allows customers to take advantage of new technologies that address new requirements, while maintaining the value of their past investments by redeploying that functionality elsewhere in the network.
- Customers can use their existing T640 chassis to upgrade to a T1600. Juniper's innovative approach, allows customers to extend the life of their hardware and achieve the industry-leading 1.6 Tbps of throughput, without having to rip out and dispose of the chassis hardware.

Juniper Offers Anytime, Anywhere Secure Remote Access

Juniper offers a suite of remote access (SSL VPN) solutions to efficiently support an organization's mobile and remote users. Juniper's solutions facilitate telecommuting to reduce commute pollution and avoid the energy costs associated with operating very small offices. As a leader in SSL VPNs, Juniper customers are able to efficiently scale their network and provide their increasingly mobile users with the critical access to resources they need to support and grow their business.



CORPORATE HEADQUARTERS AND SALES HEADQUARTERS FOR NORTH AND SOUTH AMERICA

Juniper Networks, Inc.
1194 North Mathilda Avenue
Sunnyvale, CA 94089 USA
Phone: 888-JUNIPER (888-586-4737)
or 408-745-2000
Fax: 408-745-2100
www.juniper.net

EAST COAST OFFICE

Juniper Networks, Inc.
10 Technology Park Drive
Westford, MA 01886-3146 USA
Phone: 978-589-5800
Fax: 978-589-0800

ASIA PACIFIC REGIONAL SALES HEADQUARTERS

Juniper Networks (Hong Kong) Ltd.
26/F, Cityplaza One
1111 King's Road
Taikoo Shing, Hong Kong
Phone: 852.2332.3636
Fax: 852.2574.7803

EUROPE, MIDDLE EAST, AFRICA REGIONAL SALES HEADQUARTERS

Juniper Networks (UK) Limited
Building 1
Aviator Park
Station Road
Addlestone
Surrey, KT15 2PG, U.K.
Phone: 44-(0)-1372-385500
Fax: 44-(0)-1372-385501

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