

## Datacenter Power Management

### Manage your power, guarantee your performance.

- Eliminate energy waste on your critical and virtualized servers
- Get the benefits of energy management while guaranteeing server performance, availability, and robustness
- Reduce the load and cost of HVAC infrastructure
- Save up to 35% off your IT energy bill
- See full return on your investment in 3-5 months
- Address corporate and government mandates to reduce CO<sub>2</sub> emissions
- Install yourself, configure in minutes instead of days, and begin saving immediately
- Manage and track your power savings across thousands of systems with software that is invisible to users and has no noticeable impact on your IT infrastructure

### This Is What We Do

It's a fact – most datacenter operators needlessly spend more on power than is necessary. Server manufacturers such as Dell and HP disable system power management features that can save hundreds per year per server in utility bills. Why? Simply because manufacturers know that the default power management tools controlled by the CPU, the BIOS, or the operating system can unwittingly reduce performance and availability. As the cornerstone of many organizations, the datacenter is simply too important a resource to risk manufacturer-enabled power management. Yet, datacenters and IT equipment account for 5% of US power consumption according to the EPA. As a datacenter owner or operator the billions of dollars lost are coming out of your pocket.

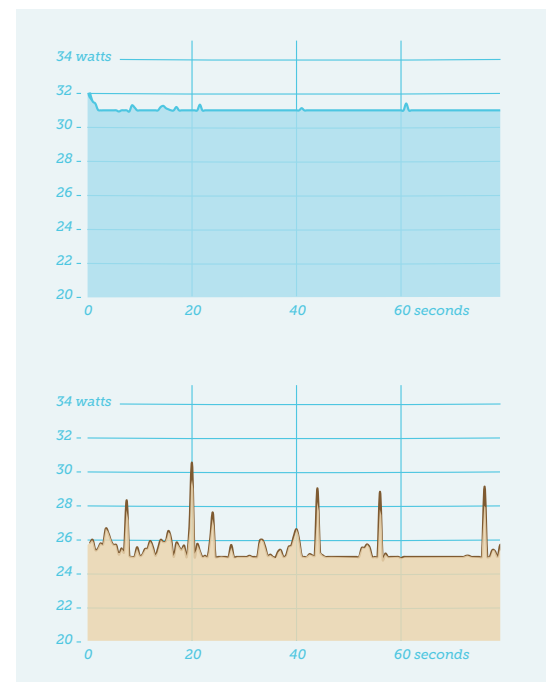
Granola Datacenter cuts energy waste with software power management that you can trust to guarantee performance and availability in your critical and virtualized servers in the datacenter. We designed Granola Datacenter using patent-pending techniques that enable user-defined performance service-level agreements (SLAs) between you and the power management capabilities of your server. Since every watt of system power saved also reduces the heat output of the server, you'll see equivalent additional savings in your HVAC costs.

### Why Should You Care?

According to the EPA, power use and the cost of energy are spiralling upward, substantially affecting your bottom line and public image.

The research firm Forrester suggests computer system power management "should be on every IT professional's checklist..." Despite their advice, many companies still have not introduced any solutions out of fear power management will affect their ability to deliver quality, reliable service.

Your servers' unused cycles are waste, plain and simple. Not only is that energy costing you more and more every year, it has to come from somewhere. And for most places in the world, that means coal-fired power plants. With global public sentiment turning green, a company's stance on the environment is becoming a priority for its clients and, ultimately, its shareholders.



Energy usage before and after Granola

## This Is How It's Done

Most critical and virtualized systems waste energy while running. For example, although the disk may be busy processing requests, other devices like the CPU may be sitting idle. You want to reduce this energy waste and extra cost on every server but not at the expense of performance or availability. Granola Datacenter allows you to specify a level of performance, or SLA, for the power management to meet. Granola Datacenter considers your SLA settings when reducing the energy waste of idle devices inside each system. The result is energy savings up to 35% without affecting the critical aspects of your business.

Granola Datacenter is designed to adapt to your changing needs. Server tasks are adjusted often throughout the day, month, or year. Granola Datacenter software power management adapts automatically to the changing uses of your servers without your intervention. No matter how frequently you change usage of a system Granola always optimizes for energy use within your SLA. Additionally, the Granola Dashboard allows you to track, manage, and organize your energy savings and your SLAs by system and groups of systems.

The bottom line is this: Granola Datacenter gives you the power savings you need with the adaptability, performance and availability you expect.

## How Can We Help You?

- Track savings over thousands of systems
- Maintain and share your savings data through the cloud
- Safe, industrial-grade SSL encryption for data security
- Group your machines for easy management
- Easily generate reports with a detailed executive overview
- Create and edit power management policies from the Granola Dash
- Schedule policies to maximize savings
- Set SLAs for mission-critical systems
- Increase datacenter capacity
- Reduce cooling costs

## Don't Take Our Word For It

In a pilot with a major government agency, Granola Datacenter was deployed alongside both servers with no power management and others with BIOS-level power management. All of the servers were attached to hardware power meters. Even at high load, **Granola Datacenter saved 10-15%** power compared to the machines with no power management while remaining strictly within the bounds of its assigned SLA. Additionally, the machines with **BIOS power management experienced unpredictable performance degradation**, up to a 57% increase in time to solution for this built-in power management.

In a pilot with a large international financial group, Granola Datacenter was tested with the level and type of load typical of their datacenters. Even under **full load**, Granola Datacenter maintained the **performance guaranteed** by the SLA. Additionally, though this level of utilization would normally be untouched by power management, in some cases Granola Datacenter was able to save as much as **10%** energy.

## System Requirements

Most PCs, servers or laptops younger than five years old

x86 processor with AMD PowerNow, Intel Speedstep or DVFS capability

Microsoft Windows: Windows 7, Vista, XP, Windows Server 2003 SP2, or 2008

Linux: RHEL 4-5, Ubuntu 8.04,10.04-11.04, SLES 10, Fedora 14-15, Debian 5-6

VMWare: ESXi 4.0, 4.1 and 5.0

Granola Dashboard:

Google Chrome, Firefox 2+, Internet Explorer 7+, Safari 3+