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CDG

September 2007

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Introduction

The interest in saving energy may have been sparked by Al Gore's movie on the effects of global warming, but the single best way to change behavior is by rewarding businesses to do so. With all of the new technical developments and the moving to an 'always-on' society the need for (processing) power has increased dramatically. CDG has been aware of this and has identified a number of ways to save on energy consumption.

Background

The developments in the use of energy are alarming. Some factors: emerging countries with huge (growing) energy need, global flexibility with increasing demand to travel and limited insight into changing old habits. The use of processing power increases and the energy demand and prices go up. An estimation by Gartner claims that the global ICT industry is responsible for two percent of the total CO2 emission. Both vendors and users are not addressing this issue. To change this, insight into the various ICT related energy concerns is a first step. Showing how organizations can reduce their costs is the next. IT budget is increasingly consumed by energy costs, thus reducing funds for development and innovation. This will make businesses less agile and profitable, since innovation in ICT is a requirement to increase productivity.

> A moderate 'business-as-usual'-scenario of the current use of natural resources will lead to an ecological disaster in 2050

The media are placing huge emphasis on the topic of reducing energy consumption. Business leaders such as Richard Branson are changing their vision and are adopting a more environmentally friendly way of doing business. The whole ICT industry needs to take this issue seriously to prevent unpleasant intervention by government or other institutions. The next step could be that customers may consider their supplier based on their environmental awareness (their level of green…).

What is CDG doing to reduce energy consumption

CDG has been an early adopter of the server-based concept which enables businesses to consolidate and offers a choice in device and location. CDG also recognized the potential of virtualization techniques. Analysts of the Butler Group predict that virtualization will become the dominant technology in datacenters due to more efficient use of resources. This leaflet focuses on the various CDG solutions and their specific environmental benefits.

Energy management – RES Wisdom

In an average environment a lot can be gained by such simple measures as turning off machines at appropriate times. RES Wisdom enables the switching off (and on!) of machines. It becomes possible to team machines and control them as if they were one. By intelligently grouping and managing the machines it becomes possible to meet the exact needs.

Switching machines off after business hours brings a significant reduction of the total power consumption

Making exceptions where required is simple and it works for both pc's and servers. This makes it possible to group all similar machines (e.g. all Windows XP machines, all Exchange servers or all laptops) as one team, but allows for individual modifications. In a similar way servers can be included in teams or be left out. This makes it possible to switch off certain servers, where the essential servers stay available. Another option is to switch off all machines (except those necessary) after business hours.

This means that RES Wisdom helps save power and allows for detailed control over IT environments. As well as this, RES Wisdom offers a broad range of options that helps automate IT tasks, making it possible to focus on exceptions and innovation.

Optimum use of machines – Ardence (a Citrix solution)

The server based computing concept brings advantages when combined with thin-client systems. The use of (large) servers to process the applications of users brings economy of scale. But organizations using multiple terminal servers face the challenge of server under-utilization. Especially during non-business hours, the SBC environment needs to be available but will be used by less workers. This makes it possible to shut down servers (with RES Wisdom as described before), but also to use these servers for different purposes. This is where Ardence can do wonders. Ardence allows you to use HD images for all your machines. A server can be started as a terminal server and reboot as an Exchange server, all in minutes. The same functionality is also available for workstations.

Ardence software-streaming enables delivery of the required operating system and applications at the right place and time. This enables for an increasingly dynamic IT environment in a cost efficient way.

Remote locations – Expand

The IT management of an environment with multiple sites and domains can be hazardous. Management may be complex but the way to serve remote locations is simple. At remote locations users do have a need for performance and often this is supported by local servers. Businesses with multiple sites may consider the use of Expand technology to overcome this. The on-site servers are consolidated using appliances. The saving is in a ratio of consolidation: four servers will be consolidated in one appliance. This saves power, space and overhead.

If a limited number of employees starts the day working at home, traffic jams could be reduced significantly

Flexibility of employees – Citrix

A bottleneck that all companies are facing is the peak demand on their ICT infrastructure. The scaling on this peak level brings huge investments. An option to lower this peak demand is the spreading of the workforce. Allowing people/employees to work in their own time and location helps doing so. The technology that enables this is delivered by Citrix. The various options allow employees to access their data and applications on locations outside the office.

Server consolidation and virtualization – VMware & PlateSpin

The use of servers has grown steadily over the years. Due to management issues servers are limited to one function or application, the result is the underutilization of their capacities. The virtualization

of server OS' with VMware means that the same workload can be handled by less servers and less overhead. This means less energy consumption and a decrease in the need for cooling and space. PlateSpin is capable of migrating servers and offers insight in the needs and savings in the move to a virtual infrastructure.

Security – Secure Computing

Most ICT environments have a strong need for security and a lot of investments goes into this area. Webwasher integrates multiple services in one single appliance: Anti-Spam and Webfiltering. This replaces the need for multiple devices/servers.

Energy efficient workspace – Cranberry

A Smart Client uses only 5% of the energy that a full blown PC would take

The introduction of SBC has brought the choice to work with or thin clients. The best choice depends on the business requirements and these are not always predictable for the lifecycle of the device. The benefits of the Cranberry Smart Client can be summed up as all the benefits of thin client technology – such as better security and lower management and running costs – but offering the power and flexibility of a conventional PC. This includes the use of emerging technologies such as application virtualization and streaming, where software applications can be deployed and run without requiring installation.

Is that all?

Next to the solutions that CDG offers there is room for improvement on various levels. The energy consumption used by using ICT can be divided into direct use for power and cooling and the indirect use for production of hardware and space. On both levels there is room for more improvement.

Consolidation leads to less hardware and less space, saving costly resources

Hardware can be selected on effectiveness by investing in equipment that can handle 'rougher' environment variables such as higher temperatures thus reducing the need for cooling, The traditional way to lower the temperature is by using air-conditioning systems, but systems that interact with the outside air might be sufficient most of the time. Hardware vendors are developing servers that are more efficient and the use of modern equipment might be more energy efficient. Certainly for monitors the change from CRT to TFT may bring cost reductions. This change saves on direct energy consumption, but also saves floor space per workplace.

Resellers will be required to act as advisors, not only for selection and implementation, but also for costs and thus for energy consumption. The first steps towards saving costs (and possibly the planet) is in the control of everyone.

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