

Welcome



Welcome to the second issue of Alert. In this issue we look at how to create a more energy efficient data centre, the benefits of intelligent power distribution units and we review the implementation of a redundant parallel power protection solution. There's also tips on how to protect yourself in an electrical storm and an update on the NPS sponsored race car, the RAM RX7.

Many thanks to the readers who sent me their ideas and feedback on the first issue. If you have any questions or comments, please do not hesitate to contact me at emily@nps.com.au.

Yours, Emily Keep, Editor

Going green in the data centre



'Going green' has become one of the hottest topics in the industry. At the heart of the green focus is the amount of power consumed. In large enterprises IT departments are spending approximately five per cent of their total budgets on energy and this could rise by 2-3 times within five years.

It's now possible to pack racks with equipment that will require 30,000 or more watts to power and cool.

This compares to only 2,000-3,000 watts per rack a few years ago. It is believed it will be in excess of 50,000 watts per rack by 2011 or 2012.

TEN WAYS TO IMPROVE DATA CENTRE EFFICIENCY

- 1. Right-size the infrastructure**
Use modular, scalable power and cooling architecture that allows you to deploy as needed and avoid "just in case" oversizing.
- 2. Virtualise your servers**
By consolidating your applications
- 3. Use more efficient air conditioner architecture**
Instead of room-based cooling, deploy row-based units, which improve efficiency in high-density environments.
- 4. Use air conditioner economiser modes**
Many air conditioners have economizer options that can offer substantial energy savings.
- 5. Create an efficient floor layout**
Floor layout has a huge impact on the efficiency of a datacentre air conditioning system. Employ a hot-aisle/cold-aisle configuration with suitable air conditioner locations.
- 6. Use more efficient power equipment**
New best-in-class UPS systems significantly improve efficiency at typical operating loads. Light-load efficiency is the key parameter, not the full-load efficiency. And don't
- 7. Locate vented floor tiles correctly**
Datacentres using a raised floor often do not have the right number of vented tiles, nor are they located correctly. Locating tiles properly will also reduce hot spots.
- 8. Coordinate air conditioners**
Many datacenters have multiple air conditioners that actually undermine one another's performance. One may heat while another one cools. The result is gross waste. Do a professional assessment to diagnose and correct any such problems.
- 9. Install energy efficient lighting**
Lighting power must also be cooled, doubling its cost. Turn off some or all via time-of-day or motion settings.
- 10. Install blanking panels**
This strategy reduces hot spots and saves energy by increasing the CRAC return air temperature.



Leagues Club tackles power issues with redundant power solution

The Wests Ashfield Leagues Club, located in the inner west of Sydney, is a multi purpose entertainment venue dedicated to the delivery of excellence in hospitality and gaming services to it's members and guests.

Wests Ashfield Leagues had an extensive fleet of smaller, disparate UPS devices varying in age from one to ten years. There was no formal tracking mechanism for battery life and as such the reliability of the devices were questionable. In fact, some of the devices were failing on occasion for no apparent reason, resulting in the cessation of key services. Also, the ongoing fluctuation of the utility power supply was causing the majority of the devices to constantly switch to and from battery.

NPS consulted with Wests Ashfield Leagues to design a fully redundant, centralised UPS solution that would provide an uninterruptible supply of power for the essential IT and communication systems throughout the club.

The solution was based on two Powerware 9355 20KVa on-line UPS' supported by an onsite generator. The UPS battery time required was minimal

"I have no hesitation in recommending NPS to any organisation wishing to review their UPS requirements. Furthermore should anyone wish to inspect our installation, I am more than happy to assist."

as the generator could provide full coverage within five minutes. It was critical however that the UPS' could handle the power issues created by the generator.

The project was carefully planned prior to installation so that the club was able to operate without disruption to any services throughout the installation process, until it was required at the final cutover. NPS managed all aspects of the project including scoping, procurement, installation and inception as well as ongoing support and training.

"NPS understood our requirements and worked with us to develop a mutually desirable solution whilst taking into consideration our time, spatial and financial requirements", said Regan Stathers, Information Technology Manager, Wests Ashfield Leagues Club

With a guaranteed power supply in the form of a redundant solution, Wests Ashfield Leagues is confident that it will no longer suffer from the power issues that previously haunted them. Furthermore, the IT team now receives regular status updates from the UPS' via email and SMS so that immediate action can be taken should a problem arise.

Why do I need surge protection if I have a UPS?

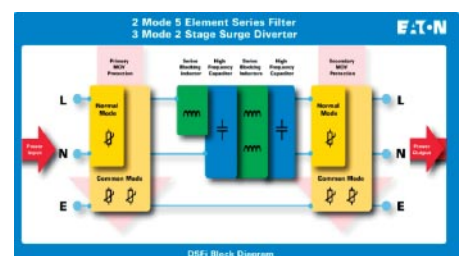
UPS do have in-built low energy surge diverters, but they can have minimal effect in a harsh electrical environment.

UPS themselves are electronic devices that are affected by severe electrical noise and can be damaged by high energy spikes. Adding a series surge filter to the supply side of the UPS is a simple and cost effective way of significantly enhancing the level of surge protection. It will protect both the UPS and its load, ultimately increasing the reliability of the UPS whilst protecting it and the load from premature failure.

Both the Powerware SSFi and DSFi Surge Filters combine several shunt and series elements to provide premium surge protection.

Above right: SSFi Portable surge filter

Below right: DSFi High performance surge filter



Intelligent PDU's minimise network downtime

PDU's (Power Distribution Units) are ideal for safely connecting the loads of multiple rack-mounted devices.

Intelligent PDU's go one step further by allowing the input current of connected devices in the rack cabinet to be individually monitored. This significantly enhances IT and network equipment uptime, ensuring maximum availability for critical applications.

By setting up the alarm threshold of the PDU input current a safety margin is provided. This will dramatically reduce the risk of upstream protection tripping due to:

- Overload, eg. installation of new servers is routinely needed but they may exceed the rated power draw
- In-rush current generated by simultaneous device start up when installed in the same cabinet.

NM (Network Managed) versions of Intelligent PDU's add remote administration and monitoring functionality. This can save time and money by allowing IT administrators to remotely reboot locked-up servers. Safety of the PDU remote operation is ensured with encryption and authentication and different administration levels allow blocking of strategic outlets.

NM models can also provide ports for the connection of temperature and humidity sensors to monitor the environment conditions in and around the rack enclosure.

Intelligent Power Distribution Units are ideal for Data Centres, Telecom Infrastructure, Remote Server Management and Enterprise Networks.



Intelligent PDU's allow the input current of connected devices in the rack cabinet to be individually monitored

LanSafe Software provides comprehensive operating system support

Eaton's LanSafe UPS Power Management software delivers comprehensive support for single-phase and three-phase UPS' via serial, USB or network connectivity.

The latest version of LanSafe, v.5.1.2, now shipping with all Powerware UPS models and downloadable free from www.powerware.com, supports an even wider range of operating systems than ever before. Good news for Linux users.

LANSAFE V.5.1.2 OPERATING SYSTEMS SUPPORT

Windows

Windows 2000 (Server, Advanced Server, Professional)

Windows XP Home

Windows XP Professional

Windows 2003 Server (Web, Small Business)

Windows 2003 Server (Standard, Enterprise)

Windows 2003 Server R2 (Standard, Enterprise)

Windows Vista (Ultimate, Home Premium, Business)

Linux-Unix-Macintosh

HP-UX v. 10.20, 11.0, 11i (11.11) for PA-RISC

v. 11i v1.6 (11.22) for Itanium

v. 11 v. 2 (11.23) for Itanium

IBM AIX v. 4.3.2 for RISC

v. 4.3.3 for RISC and PowerPC 3

v. 5.1, 5.2, 5.3 for PowerPC 3

v. 5.3 for PowerPC 5

Mac OS v. 10.2.8, 10.3.x, 10.4.x

Red Hat 7.2, 8.0, 9.0

Red Hat Enterprise Linux 3 and 4 (ES and AS)

Red Hat Enterprise Linux 4 (ES, AS, and Desktop)

Fedora Core 5

SCO Unix OpenServer v. 5.0.6, 5.0.7

SGI Irix (MIPS) v. 6.5.2.x

Sun Solaris v. 7, 8, 9, 10 for SPARC

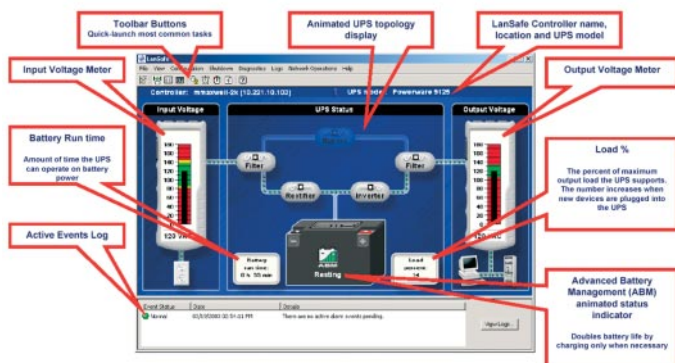
v. 7, 8, 9, 10 for Intel

SuSE Linux v. 7.2,8.0,8.2,9.0,9.3,10.0

SuSE Enterprise Linux Server 8 & 9 (must upgrade to latest SP)

Novell Netware

Novell NetWare v. 5.0, 5.1, 6.0, 6.5 (must upgrade to latest SP)



LanSafe Powerscope screen

RAM Electrical Racing Team scores top ten finish



The NPS-sponsored RAM Racing Team recently ventured down to Wakehurst Park to contest Round Five of the NSW Improved Production Championship.

It was driver Roy Anderson's 40th birthday and the team surprised him with a special birthday banner in the garage and a note on the steering wheel with some key points for him to focus on:

- Three timed laps (a requirement to qualify)
- Bed brakes
- Happy 40th birthday!

There were three races to compete in and the team goals were to finish all three, do a lap time of 1:09 and finish in the top ten.

The results were:

- Race 1 – finished 10th, best lap time 1:10:4741
- Race 2 – finished 9th, best lap time 1:09:9456
- Race 3 – finished 9th, best lap time 1:09:1882

The team is now looking forward to Round Six of the NSW Improved Production Championship on 22–23 September at Eastern Creek.

RAM assists NPS with electrical installations and NPS provide RAM with UPS and surge equipment.

“NPS have been an immense help to our business as their level of product knowledge, technical support and ability to deliver on time is second to none.”

Roy Anderson, owner, RAM Electrical Services

Protecting yourself in an electrical storm

If you are caught outdoors:

- Seek shelter in a hard top metal bodied vehicle or shelter – not a fabric structure such as a tent or soft top vehicle.
- Don't shelter under small groups of or single trees
- If far from shelter, crouch down, preferably in a hollow. Remove all metal objects from your head and body.
- Don't fly kites or model airplanes with control wires.
- Don't handle fishing rods, umbrellas or golf clubs
- Stay away from metal poles, fences and clothes lines
- If swimming or surfing, leave the water immediately.

YOUR FEEDBACK

We value your feedback. The first ten people to email any ideas or suggestions for future issues will receive a free Powersmart 100 Surge Protection Board valued at \$65.00. Email: feedback@nps.com.au



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NPS WA
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Wangara WA 6065
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Fax (08) 6210 5915

STAFF PROFILE

Joy Shui, financial controller



How long have you worked at NPS?
Six years.

What does your job involve?
Dealing with money and numbers.

What do you like to do in your spare time?
Reading.

Where is your favourite place in the world and why?
My home city, Ningbo in China – great people, culture and scenery.

What's your favourite movie and why?
Gone with the Wind, it's very moving.

What's your favourite book?
The Thorn Birds.

What car do you drive?
A black Toyota Kluger.

Do you have a favourite joke and what is it?
Budget: an orderly system for living beyond your means.

What's your favourite colour?
Black and purple.

What's your favourite song?
Listen to your heart.

What's your favourite food?
Seafood.

Do you live your life by any motto?
'Always do your best.'

STAFF NEWS

Mark and Holly's wedding

Congratulations to Mark Sewell and Holly Howison who tied the knot in a beautiful ceremony at the Gunners Barracks Tea Room on Saturday July 14th.

The stunning location provided guests with panoramic views of Sydney Harbour from the bridge to the heads. Mark, who is one of the co-founders of Natural Power Solutions, couldn't resist reminding everyone of his passion for lightning by including a lightning bolt on the wedding cake.

New staff member: Lisa Noy

We are pleased to welcome Lisa Noy to the NPS Vic team. Lisa will be working in Sales/Administration.

