real life

A STORY FROM THE FRONT LINES OF POWER PROTECTION

All too often when installing networks, companies focus all their attention on hardware and software. But no matter how perfectly designed that system is, if the power that feeds it is faulty, it won't perform reliably if at all.

Wild goose chase!

Not recognizing that can lead to a great deal of time and money lost searching for the cause of random system crashes and other mysterious occurrences in all the wrong places. Here is an example that happened to a major national IS consultancy firm.

A well known insurance company hired the firm to help develop a risk management system that would automate their underwriting approval process for new policy applications. This Automated Risk Management System project called for implementation on a Windows-based client running on a NetWare server platform. Choices that were a radical departure for a company who, until then, had been completely "Big Blue."

In this case the system was being implemented on NetWare 3.11 running on IBM's model 8595 server. The prototype system was scheduled to rollout over the next six months. But before further development could occur, it was necessary to verify the systems' stability. The problem was the system simply wouldn't work. A series of seemingly random hardware interrupt errors kept bringing the network down.

The frustrated systems development team spent countless hours going over their work and could find nothing wrong. Of course. There wasn't anything wrong with their work. The development team was simply looking in the wrong place! They never dreamed the problem was power related because they believed they had taken every precaution against power problems. After all, the electrical supply in the developmental lab came from dedicated isolated ground circuits with surge suppressed outlets.The server was powered by a 900 Va SmartUPS from American Power Conversion. What else could they have done?

With the amount of money already spent and, it was felt, jobs on the line, failure was something nobody in the loop wanted to even think about. The client's MIS manager had a sinking feeling she had stuck her neck out too far departing from company tradition.

With a big stake in the project's success, Novell had by this time become involved and assigned a team of engineers to attack the problem. "Could it be possible," they asked, " for these 'spurious hardware interrupts' to be power related?" A simple question that provided the key to the ultimate solution.

Having consulted with ONEAC in the past on issues of power impacting network reliability, they called them in again. When ONEAC saw that the client was using an APC SmartUPS to protect their server, they knew that contaminated power could very likely be the culprit. Because the filters APC and most other popular UPSs employ to condition power, are incapable of preventing all harmful power line contaminants from passing on through to the system.

The first step was to place an ONEGraph power monitor on the line to make a historical recording of what was passing through the UPS to the server. The tape readout allowed a comparison between the incidence of each high energy spike with the time recorded for every system crash. What was discovered was that every time the server experienced a spurious hardware interrupt, its power supply was being jolted by a 70 to 80 volt common mode (N-G) impulse! That the two coincided almost perfectly, confirmed bad power as the culprit.

It was precisely this type of problem ONEAC's full output isolation transformer-based power conditioning was designed to solve. So their UPS protection was upgraded from APC UPSs to ONEAC ON Series UPSs and ONEAC power conditioners installed on the peripherals in the server room. And the problem was never heard from again.

The ONEAC difference.

It's well established that power problems are the leading cause of network downtime and data loss. Lightning and outages are the most visible of these. And most UPSs protect against them to some degree. But fast edged transients and other conducted noise can be just as dangerous. ONEAC's low impedance, full output isolation transformers eliminate them completely. While UPSs with filter-based power conditioning are only capable of protecting against a portion. That difference can have a major impact on reliability.

The evidence is that switching from standard filter-based UPSs to ONEAC Premium Grade Power UPSs leads to an average 35% reduction in hard failures, 80% reduction in "no trouble found" service calls, and equally dramatic reductions in a host of other mysterious system ills.

The cost of a UPS is a small fraction of your total investment in network systems and supports. Doesn't it make more sense to specify the UPS that offers you the complete power protection?

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