Monitoring your computer environments

John Deans

One of the only things I miss from Houston is large dedicated server rooms. The biggest one was at Compaq (now Hewlett Packard) which housed hundreds of servers and you actually had to have a map to find your way around.

These server rooms have raised floors with about two feet clearance so all the cabling can be concealed and easily run between the computer cabinets. Twenty years ago when I had to run new computer networking cable under our server room raised floor I had a special technique for making those long pulls without pulling up dozens of heavy floor tiles.

Since my son Dustin was 3 years old back then and quite adventurous I would open one tile at each end of the run, tie the coax cable to him and have him crawl under the floor for the 50 or so feet to the other open tile. He would come out the other end smiling and a bit dusty but it worked great.

Dustin enjoyed doing it and we got cables ran fast using this child cable pulling method.

Some things we had to deal with in those computer rooms were environmental problems with power, air conditioning and fire prevention. There were usually large buttons at the primary exit door of the server room with one being red and the other yellow. The red button was an emergency power shutdown switch that cut power to whole room in case of fire or electrocution.

The yellow button was the override for the Halon fire suppression system. Halon is a gas when automatically deployed takes the oxygen out of the air which puts out a fire. These buttons became problems when "Take Your Kid to Work Day" started back in the 1990s.

At Amoco where my team managed the network, we had some yahoo's kid hit the red button one year which shutdown dozens of servers in split second. The next year my guys were trying to disable a Halon system before the kids got there and accidently set it off. They called me looking for the yellow shutdown button as the 30-second countdown alarm rang in background.

The next thing I heard over the cell phone was a big whoosh sound and then screaming. My guys ran out of the server room as $10,000 worth of compressed Halon filled up the room, knocking ceiling tiles down and turning everything white.

I later showed them the huge yellow abort button they had missed while running out of the room so fast.

One major environmental factor we had to deal with was the air conditioning system which kept the dozens of large computer servers from overheating. They ran 24 hours a day keeping the temperature around 70 degrees with a low humidity level. We usually had multiple units running in parallel configured in a load balancing setup.

This was done both for redundancy and scaled for backup in case one failed the other could perform the majority of the cooling requirements for a limited time. Information and notification was the key element in effectively managing computer server room environment.

Back at the Amoco server room we installed a temperature probe to the serial port of one of our network management computers. We then purchased software to record and monitor the server room temperature.

This program enabled us to set thresholds that if were exceeded would generate alarm conditions. From there we had it send us messages via pagers and e-mail if something happened to one of the AC units and the temperature was rising above safe levels.

One summer just such an event happened with a compressor dying during a weekend. We got text messages on our alphanumeric pagers telling us the primary server room temperature had surpassed the threshold of 80 degrees.

Since it resends the messages after every degree higher it rises after the initial threshold is exceeded, we were getting messages every minute as the room heating up quickly.

By the time we drove 80 miles an hour down I-45 to get there, the server room was over 100 degrees, forcing us to immediately shut down all the servers to prevent them from overheating failures.

After the AC guy got there and resolved the problem later that Sunday afternoon, we booted everything back up and were ready to go that Monday morning with all systems operational.

That temperature monitor we had installed just weeks before saved hundreds of thousands of dollars in complex computer servers from frying. After that proactive proof of concept we rolled those same computer room temperature monitoring systems out to all our other large clients and I got a good raise.

Even though there are not many large computer rooms in Washington County the concept remains the same. If you even have a small room dedicated to your office phone switch and a server then it needs temperature monitoring. These devices are now inexpensive and easy to configure.

The main goal is for you to be notified when the environment gets hostile by temperature or humidity conditions threatening your computer systems.

Five years ago we installed network based temperature monitoring devices at a power company client of mine in their remote office microwave rooms. These were critical areas and if power or air conditioning were to fail there would be serious consequences.

Gregg Appel of Appel Motors monitors his server room with an inexpensive device called the "Weather Duck," which sells for $199 from www.ITWatchDogs.com. This little jewel plugs into the computer's serial port and monitors not only temperature, but humidity, airflow and even light.

It e-mails Gregg notifications if any user-managed thresholds are exceeded enabling him to save the day.

Bottom line: Large or small computer rooms need monitoring to keep the environment friendly to the servers that continuously require dry cool air.

Next week's column: Layoff IT precautions.

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