

in this issue

1

Beware the Smart Virus

2

Tax-planning Tips for 2006

•

Band Makes Record by Releasing Mobile Single

3

Advanced ICU Offers a Virtual Eye on Patients

4

Google Searches for TV Guy

•

Yahoo Implicated in Spyware Click Fraud

Beware the Smart Virus

SAN DIEGO -- Storage Networking World -- IT managers at this week's SNW show claimed to be bracing themselves for a new breed of super virus based on complex mathematical theories that could wreak havoc on storage networks and servers.

Sasan Hamidi, CIO of Miami, Fla., travel firm Interval International and a computer scientist, warned attendees that a new super-virulent virus may be targeting their systems in the future. "It's not far-fetched. It is possible... to create a living computer program and let it have intelligence," he said during a presentation, explaining that the virus could mutate itself to avoid patches and intrusion detection technologies.

Cellular automation, which builds complex patterns using simple rules, and even game theory are just a couple of the advanced scientific methods that could be used to build these threats, according to Hamidi, a former senior project manager at the global security division of IBM Corp. (NYSE: IBM - message board) and director of enterprise architecture at General Electric.

The new type of threat, which Hamidi describes as "evolutionary computing," would differ from traditional viruses and worms in that the code, once detected, would alter itself and then attack another part of the network. "The code adapts itself to the environment. This could be a worm that learns from the environment and becomes more intelligent."

With so many computer resources, including storage, now IP-based, Hamidi explained that the virus could enter an organization's systems as "relatively harmless" TCP packets before wreaking havoc. Although examples of attacks based on "evolutionary computing" are hard to come by, IT managers at SNW compared the potential impact to the Morris worm, written

by Cornell University graduate student Robert Tappan Morris, son of the former chief scientist at the National Computer Security Center (NCSC), which brought down much of the Internet in 1988.

The worm, which is also known as the "Great Worm," replicated itself much faster than anticipated and disabled thousands of computers before it was finally brought under control.

Thankfully, few people possess this level of expertise. "The typical hacker today is not knowledgeable enough about genetic algorithms and evolutionary computing," said Hamidi.

Still, the prospect has IT pros at least concerned, particularly about their lack of protection. Hamidi confessed that he would be in trouble if someone mastered these techniques and targeted his business with a super virus tomorrow. "There's nothing that I know of that could prevent something like this."



Tor Garman, senior business systems analyst at San Diego Gas & Electric, admits to guarded trepidation. "The possibility does exist, but there's really not anything that we can do about it right now," he says. Garman concurs that a potential hacker would need both knowledge of complex scientific theory and the ability to stage a multilevel security attack to pull it off.

"It's sort of tough," agrees a storage manager from a California insurance company, who asked not to be named. "There are many people that are a lot smarter than I am out there.

It's going to happen as people get more sophisticated." ■

Tax-planning tips for 2006

Energy-saving investments may offer big rewards

Taxpayers who put their money into energy-saving home improvements and hybrid vehicles in 2006 will reap big rewards next year at tax time: new tax credits, among the tax code's most potent gifts.

Though Congress' dithering with the alternative minimum tax poses some challenges for those who like to plan their tax year in advance, there's no doubt that energy-conserving moves make smart tax sense for 2006.

Replacing the tax deduction for hybrid vehicles, which expired at the end of 2005, is a tax credit, a bigger benefit. Deductions only reduce the income against which tax is assessed, while credits are a dollar-for-dollar reduction in tax liability.

Taxpayers who buy or lease a new hybrid gas-electric car or truck in 2006 are eligible for a credit of \$250 to \$3,400 per vehicle, depending on its fuel economy and weight. Because there are long waiting lists to get such vehicles, people who ordered hybrids in 2005 can claim the credit for the 2006 tax year, as long as they did not take possession of the vehicle before Jan. 1, 2006.

Homeowners who install new energy-saving devices like solar water heaters or rooftop solar panels are eligible for an energy credit of up to \$2,000 per system. Certain insulation, heat pumps, air conditioners and furnaces can qualify for a credit of up to 10 percent of their cost, to a total maximum lifetime credit of \$500.

Saving for retirement, always a good idea, receives more favorable tax treatment in 2006, with higher contributions to qualified retirement plans permitted. Additional "catch-up" contributions for taxpayers over 50 also rise by between \$500 and \$1,000, depending on the type of plan.

That means taxpayers should try to contribute the maximum allowable this year, starting as soon as possible so that savings can build over the course of the year. Another important task for early 2006 is deciding whether the right

amount of tax is being withheld from your paycheck.

Alternative minimum tax

One of the most bedeviling tax issues is the alternative minimum tax, a tax figured separately from regular tax and originally designed to prevent the wealthy from avoiding taxation. Because the AMT was never indexed for inflation, each year more middle-class taxpayers find themselves subject to it.

Without congressional action, an estimated 15 million taxpayers could have to pay AMT in 2006 for the first time. Most are married couples with incomes over \$100,000, high state and local taxes, and multiple children they can claim as personal exemptions.

Though it's unlikely lawmakers will decline to help so many voters, taxpayers may want to hedge their bets with AMT-reduction strategies.

Those flirting with AMT should be careful about making large charitable deductions during 2006 and exercising large "incentive" stock options typically given corporate executives. Taxpayers may wish to avoid or dump "private-activity" municipal bonds that lose their tax-free status under the AMT.

Beyond staving off the AMT, there are other strategies for saving taxes in 2006. Consider giving appreciated assets or cash to children who are in lower tax brackets. The amount a taxpayer can give someone without having to pay a gift tax rises to \$12,000 this year for each recipient, up from \$11,000 in 2005.

Beginning in 2006, taxpayers who contribute to a 401(k) plan may designate some or all of those contributions as "Roth" contributions, if their employer plan permits. Such contributions are included in taxable income in the year they are made.

But Roth distributions later in life — when, presumably, they are needed — aren't taxed, so taxpayers who think they will be in a higher tax bracket at retirement may want to make Roth contributions in 2006. ■

Band Makes Record by Releasing Mobile Single

LONDON (Reuters)—An Anglo-Italian five-piece band is set to make an entirely different kind of record next month when it launches Britain's first single that can only be bought by cell phone, mobile network operator 3 said on Monday.

"Stop Me" by Planet Funk, due to be released on May 8, comes after "Crazy" by Gnarls Barclay reached the number one spot in the UK singles chart by download sales alone, before it was even available in record stores.

It is the latest attempt by bands and record companies to breathe life back into the flagging singles market as they look to capture the imagination of a new generation of music lovers who are shunning established formats such as compact discs.

Downloads are now estimated to account for around 4 percent of UK singles sales.

That number is set to soar as prices fall and more people gain access to on-line music stores such as Apple's iTunes through phones and Internet-connected mobile devices.

The single will be launched on 3. The Hutchinson Whampoa mobile network division has invested heavily in its music service and says its users have downloaded more than 16 million video and audio tracks in the last two years.

3 has also introduced call packages that include free music downloads in an attempt to give users a taste for the service.

In addition users can transfer the songs to their computer for free so they do not pay twice for tracks and can then download them to other digital music players that support the format. ■

Advanced ICU Offers a Virtual Eye on Patients

MetaVision Helps Hospital Keep a Constant Vigil on Patients

As director of critical care services at Lehigh Valley Hospital in Allentown, Pa., Dr. Steve Matchett knows that he faces a chronic manpower shortage and must marshal his resources wisely to maintain quality health care. He just marshals them virtually.

Since 2004, Lehigh has operated the Advanced ICU. Patients are monitored by machine, with software that weaves medical data into one comprehensive record, and data is transmitted to doctors at a control room several miles away. The doctors then send instructions back to nurses and other staff on-site, or even talk with family members who are present in the patient's room.

Telemedicine itself, of course, is not a new concept; doctors have zipped digitized medical images across data lines for years. But Lehigh's ICU goes beyond that, networking various medical devices and databases into one detailed history of a patient. Doctors at the far end of the data line can explore that history as they see fit and complement that picture with fresh information from two-way cameras and microphones focused on individual beds.

"We've built our system on the medical record ... and then layered the telemedicine piece on top of it, rather than just putting the telemedicine in the ICU and letting the ICU function with whatever workflow system they had," Matchett said. "For us, this was a much more sweeping change in the way we deliver services."

The hardware for the system was straightforward, Matchett said. Lehigh purchased audiovisual equipment (including high-resolution cameras that can even depict dilation of a patient's pupils) from Vistacom Information Systems, in Exton, Pa. Medical devices—from heart monitors to urinalysis machines to thermometers—came from a variety of manufacturers.

Instead, Matchett said, the principal challenge was to find the right underlying software to interface with all those medical devices and systems and to create the virtual patient record.

A priority was to integrate that software with Lehigh's existing physician-order-entry application, LastWord, from IDX Systems, to avoid the cost of purchasing another new system.

That quickly narrowed the field to a few medical-software vendors, and Lehigh ultimately approached IMDsoft, in Needham, Mass. IMDsoft's MetaVision ICU product works by supplying device drivers for medical equipment and mapping data points against a library of events that Lehigh wants to monitor—say, tracking both blood pressure and temperature and alerting doctors when both fluctuate at once (indicating more serious trouble than if either vital sign fluctuated alone).

MetaVision's flexibility allows hospitals to integrate more pieces of equipment into the system simply by building the right data driver. Lehigh, for example, integrated its medical lab so that doctors can see the results of blood work in a patient record within 90 seconds of lab technicians finishing the job. Doctors can also create "algorithms" for each patient, stringing together scenarios that merit various levels of attention from nurses or doctors.

Software aside, the most impressive part of Lehigh's ICU is the control room: eight high-resolution monitors in a two-person workstation manned 24 hours a day by a critical-care doctor and an ICU nurse using another IMDsoft application called MVcentral.

How does it all work? Nurses and staff physicians routinely stroll the floors of Lehigh's ICU wards (the hospital has since expanded its Advanced ICU to 72 beds in three separate buildings) to monitor patients in their rooms. A PC sits at each bed, where medical staff can enter their observations. That information, along with data from a patient's medical devices, is fed into a server that compiles the virtual record for that patient.

Assuming the patient is doing well, that virtual record zips off to the ICU control room and waits for review by the critical-care technician. When the technician

pulls up the record on one of the monitors, cameras automatically queue up a real-time image of the patient that the doctor can study while reviewing the person's health. The doctor can then send further instructions to the ICU nursing station or to the PC at each Advanced ICU patient's bedside, all electronically.

More important is how MetaVision works when a patient's recovery goes wrong. When a troubling event happens, MetaVision alerts doctors in the control room to examine the patient's file immediately. Those doctors can tap into a trove of historical information all tied in to MetaVision: medication records, X-ray images as far back as 1994, notes from previous admissions and more. If necessary, they can talk with nurses in the room via a two-way microphone.

The Advanced ICU is not cheap: Capital costs were \$1.9 million, and operating costs run approximately \$1.5 million annually, Matchett said. He also said he is confident that higher patient throughput still translates into cost savings for the hospital, although an exact number hasn't yet been tallied.

More important are the improved patient outcomes. Overall patient mortality fell from 16 percent in the third quarter of 2004 to 10 percent by the first quarter of 2005, Matchett said. And because nurses now have fewer paperwork chores, they have approximately 75 minutes more free time per 12-hour shift to devote to patient care. (Lehigh deliberately decided not to cut staff once its nurses had more free time, so as not to have a negative impact on patient care.)

And what about the added layer of distance between patient and doctor? Matchett insists that hospital visitors don't consider the technology a step toward more impersonal care. Rather, he said, both patients and families appreciate the system because they can always reach a doctor even in late hours, rather than wait (possibly for hours) for an attending physician to come by to follow up and answer questions. ■

Google Searches for TV Guy



An ad at the Google Website suggests that the search giant is ready to extend its search and advertising services into the world of television.

Google wants to hire a "Product Manager – Interactive TV." That product manager's job will be to "identify areas where use of Google's search and advertising technology can enhance this user experience and define appropriate products to deliver these user benefits," the ad reads.

"You will identify key market trends that are shaping user behavior when watching Television. These include but are not limited to the intersection of internet and Television technologies, video-on-demand, personal video recorders and emergence of next generation set-top-boxes with IP connectivity."

Google believes the new product manager's products might be sold "in the telecom and cable segments."

The winning candidate might find him or herself in the middle of a collision between the Internet and television that could yield some crazy, and exciting, results. The whole idea of channels might go out the window in favor of a classic Google interface from which the viewer "searches" for things to watch.

Of course, Google tracks the keywords used in each one of those searches. And with that data, it would likely do what telco IPTV players are just beginning to talk about - - targeting video ads to individual people, not just broad groups. Google has already begun testing video ads at certain consumer Websites.

Google media relations people did not respond to requests for comment on this story.

"This might be for their own original content," says chief strategy officer Hunter Newby of the carrier connection company telx Group Inc. "I'm sure Google will have their own Sopranos-like mafia series once their backbone goes live and they have peering with the

The service has gotten poor reviews so far, mainly due to its underdeveloped user interface and the poor picture quality of the videos.

Perhaps the biggest problem is that the site has a very limited amount of watchable content, unless you're into talk show reruns and home-made "backyard wrestling" videos. ■

Yahoo Implicated In Spyware Click Fraud

Advertisers who expect their Overture ad campaigns to run with certain Yahoo Searches may be surprised to find their ads running in syndicated spyware applications that render each impression as an ad click the advertiser must pay.

When that click is paid, according to spyware researcher Ben Edelman, Yahoo and the spyware vendor split the revenue. Edelman has followed up his August 2005 research into spyware receiving payments from Yahoo's Overture by noting an increase in this possible syndication fraud.

"In my August syndication fraud examples, an advertiser only pays Yahoo if a user clicks the advertiser's ad. Not so for three of today's examples. Here, spyware completely fakes a click -- causing Yahoo to charge an advertiser a "pay-per-click" fee, even though no user actually clicked on any pay-per-click link. This is "click fraud," Edelman wrote.

Edelman documented three examples where actual click fraud took place. He named 180solutions, Nbcsearch, and Look2me/Ad-w-a-r-e as culprits in presenting popup ads that defrauded advertisers with Yahoo.

"Spyware syndication falls within the general problem of syndication-based click fraud. Suppose X, the Yahoo partner site, hires a spyware vendor to send users to its site and to make it appear as if those users clicked X's Yahoo ads. Then advertisers will pay Yahoo, and Yahoo will pay X, even though users never actually clicked the ads," said Edelman.

His examples of this click fraud are not guesswork and assumptions. For each case, Edelman provided a full packet log, annotated screenshots, and video of the spyware-based click fraud taking place.

A fourth example of nefarious practices taking place involves the practice of inserting pay-per-click links into text without the consent of the publisher. Edelman displayed one example of this, a story about Iraq from the New York Times website that had a third-party link inserted.

Edelman believes that Overture is the sole funding source for Qklinkserver.com, which inserted the link. He diagrammed the process that took place with this insertion:

The net effect of these practices is that advertisers pay Yahoo, then Yahoo pays Intermix (Sirsearch), then Intermix pays Searchdistribution.net which pays Qklinkserver.com/Srch-results.com.

While News Corp has been publicly cleaning up MySpace, it may need to take a harder look at some of Intermix's other businesses. ■

