



### This Issue:

Unlike Lightning, Solar Flares Can Strike the Same Place Twice

4 Reasons Why Your System is Bugged

Happy Holidays!

People are the X Factor for a Successful Technology Strategy

How Secure Are Your Virtual Servers?



### Unlike Lightning, Solar Flares Can Strike the Same Place Twice



In 1859, our planet was hit with the largest recorded solar flare. This particular flare was known as the Carrington Event and it produced auroras that could be seen all around the world, even as far south as the Caribbean. The 1859 solar flare caused minimal damage and was seen mainly as an oddity. If such a flare struck today, however, the world would erupt into chaos.

What makes a solar flare like this so dangerous for our modern society is that, when the massive geomagnetic storm collides with the Earth's magnetosphere, an electromagnetic pulse (EMP) is created, which effectively disables all of the Earth's electronics.

Electricity-based technology was in its infancy back in 1859. Therefore, the only negative effect that society experienced from the flare was the downing of its telegraph systems, as

*(Continued on page 2)*

### 4 Reasons Why Your System is Bugged



As long as computer software has existed, it's been plagued by bugs. Like real bugs, software bugs are an infestation and can cause major problems for businesses. When assessing software bugs, one question comes to mind; "After decades of dealing with bugs, why are they still an issue?"

It's a fair question because it's the nature of technology to improve over time. With every version of tech that's released, problems with the previous version are addressed and the latest version markets these improvements. This is why "state of the art technology" is so valuable. It assumes that the latest version will have the least problem-causing bugs. Although, sometimes there's an exception to this rule—we're looking at you, Windows Vista!

Therefore, it's only natural to assume that, by now, software developers would have perfected their craft and bugs wouldn't be a problem. Sigh. Unfortunately, due to a range of reasons, this isn't the case now, and may never be.

*(Continued on page 2)*

### Happy Holidays!



We wish you and your families a Happy Holiday season and a prosperous New Year! While Total Networks' office will be closed on Christmas Day and New Year's Day, as always we will have an on-call engineer available 24/7 to take your support calls if needed, at (602) 412-5000.

Sincerely,  
Stephanie & Dave Kinsey  
Owners, Total Networks

### About Total Networks

Building on the tradition of providing industry best solutions, the Kinseys continue to invest in tools, training, recruiting, and procedures, continuing to extend our reputation as the premier IT service provider in Arizona.

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## Unlike Lightning, Solar Flares Can Strike the Same Place Twice

*(Continued from page 1)*

reported throughout both Europe and North America. In some cases, telegraph operators received electric shocks and telegraph pylons threw sparks. A first-hand account of the phenomenon from the Baltimore American and Commercial Advertiser provides us with some unique insight into the event, which lasted multiple days:

Those who happened to be out late on Thursday night had an opportunity of witnessing another magnificent display of the auroral lights. The phenomenon was very similar to the display on Sunday night, though at times the light was, if possible, more brilliant, and the prismatic hues more varied and gorgeous. The light appeared to cover the whole

firmament, apparently like a luminous cloud, through which the stars of the larger magnitude indistinctly shone. The light was greater than that of the moon at its full, but had an indescribable softness and delicacy that seemed to envelop everything upon which it rested. Between 12 and 1 o'clock, when the display was at its full brilliancy, the quiet streets of the city resting under this strange light, presented a beautiful as well as singular appearance. If a solar flare of this magnitude happened today, the newspapers would be reporting a much different story. It would be the most catastrophic event in our lifetime and it would take years to rebuild the world's devastated technology. The loss of our communications tools like in 1859 would be the least of our

worries. The loss of lives from planes falling from the sky would be horrific, and if infrastructure like nuclear power plants failed, then the world would be at risk of experiencing multiple meltdowns.

In an event like a major solar flare, the economy will grind to a halt, affecting your business along with every other organization in Phoenix. Now granted, in such an event, getting your business up and running again won't be an immediate concern, but it will become a priority once the rebuilding process is underway.



**Read the Rest Online!**  
<http://bit.ly/1sDqCLI>

## 4 Reasons Why Your System is Bugged

*(Continued from page 1)*

### **Imperfect Creations Make Imperfect Creations**

When it comes down to it, computer software is made by people, and people are flawed. The term "nobody's perfect" means that it's impossible for a person, much less a team of people, to make software that's perfect. Programmers are the people that make software by creating code—thousands, if not millions of lines of complex code. That's a lot of room for error. Making it harder to achieve coding perfection, is the fact that programmers use imperfect software to write code for new imperfect software—so they're at a disadvantage from the get-go.

### **Deadlines Create a Rushed Product**

If you were able to give a programmer all the time they needed in order to create a perfect product, they might be able to come up with an offering that's bug free, but time and deadlines are another factor that adds to the bug problem. Essentially, most software used is made for the purpose of profits. This means that programmers have to meet the deadlines of software manufacturers,

which may translate to a few cut corners. Bugs brought about by cut corners are one reason why software manufacturers continue to provide support and updates for their product well after it's released.

### **New Software is Designed to Do More**

In a perfect world, we would keep improving a single version of a software until every bug is worked out and the code is perfect. Instead, a software is completely overhauled after a few years with new and more complex features. More complicated software means even more lines of code.

InfoWorld puts the increasing complexity of error-prone software into perspective:

People who count such items say that if you only have one mistake per every 50 lines of code, you're doing pretty well. Most programmers veer closer to a mistake for every five to 15 lines of code. Consider, say, that the Linux kernel has more than 15 million of lines of code ... you do the math.

### **We Can't Forget about Hackers**

You are well aware of hackers and all the damage they can do to your system. If a software bug is like a wound, then hackers make it worse by pouring salt on it. They have a specialty for finding and exploiting software bugs to make them worse. As long as hackers are actively trying to exploit lapses in network security and software bugs, it will always be an uphill battle to have error-free software.

Software bugs are bad. They can't be totally eliminated from the technology picture, but their effects can be managed. Like a virtual exterminator, Total Networks can remotely manage and maintain your company's IT infrastructure to prevent software bugs from causing your business downtime. Call us at (602)412-5025 and stop bugging out over computer errors.



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## People are the X Factor for a Successful Technology Strategy



Businesses look to technology to solve their problems and make operations more efficient, and rightfully so, after all, tech-

nology is synonymous with “solution.” Although, just purchasing new technology isn’t enough to automatically see the desired results. New technology must be accompanied by intentional implementation efforts, which includes adapting it to your company’s culture. In other words, working with people.

### You Can’t Have One Without the Other

After studying new research about digital transformation among companies investing in the digital customer experience, Brian Solis, principal analyst for the Altimeter Group, made this observation to CIO.com:

That’s the irony about digital transformation, it doesn’t work when in and of itself technology is the solution. Technol-

ogy has to be an enabler and that enabler needs to be aligned with a bigger mission. We already found that companies that lead digital transformation from a more human center actually bring people together in the organization faster and with greater results.

### The Need for CIOs to Work on Their People Skills

Solis goes on to say that whoever’s job it is to implement the new technology within a company (typically it’s the CIO), has their work cut out for them. “The CIO is more important than ever before. Instead of working against a technology roadmap, CIOs are now focusing on organizational processes and objectives that matter more to different types of customers and employees.” In other words, “CIO” should now include a “P” for “Chief Information and Personnel Officer.”

This shift may be a challenge for many long-term CIOs. Chances are, they got into IT because of their love for technology, not because they enjoyed working with people. Technology has reached a

level where it needs to find a supportive cultural environment for proper implementation. This means talking with and organizing people. Many of us are well aware that working with technology is much easier than working with people. Technology is predictable and its solutions are straightforward, whereas humans are highly unpredictable and often have attitudes that are difficult to manage.

### How a Technology Person can Motivate the Team

Getting people on board with the new solution being implemented is absolutely the key to its success. For example, if users prefer the older technology, and they don’t want to invest the time into learning a new system, then they may give the new tech a half-hearted go at it, intending that their negative feedback will get the CIO to revert back to the old ways; or an employee may simply dislike the CIO for a petty reason and choose to make the implementation of the new tech difficult out of spite. A poor attitude like this would make the entire endeavor

*(Continued on page 4)*

## How Secure Are Your Virtual Servers?



In today’s technology world, a lot of businesses are opting to take advantage of virtualized servers. These offer various

benefits, including the ability to consolidate your servers into a neat, controlled package. But according to a recent study by Symantec, virtual servers might not be as secure as once thought. In fact, they might not be any more secure than a physical server.

The well-known security company stated in its most recent report, entitled “Threats to Virtual Environments,” that “virtual machine hosting servers are not

any [more] secure than any other type of server. They are just as vulnerable to malware and targeted attacks.” Additionally, there are a number of cloud-based threats that are exclusive to virtual servers. While some security companies beg to differ, hypervisor attacks can potentially occur. The hypervisor is what creates and runs the virtual machine.

While it is certainly possible, the payoff for hackers isn’t the best incentive, considering the level of expertise it takes to perform such a feat.

Other threats, however, are very real. Malware and targeted attacks against virtual servers are just as effective as they are against physical servers. Malware can potentially attack virtual server snapshots during the data backup process, and the infection can spread

through a virtual network. To make matters worse, these attacks have happened and can continue to occur. One example is the Crisis malware, which can steal information from a system in a variety of ways (it was initially thought to be created for law enforcement and espionage).

In order to keep your virtual servers as secure as possible, Symantec offers some tips. Total Networks has picked the ones we feel are most important:

- **Crack down on security.** Only allow trusted applications access to your network and systems. Total Networks can help your business put together a blacklist and whitelist of apps that can or cannot access your

*(Continued on page 4)*



## People are the X Factor for a Successful Technology Strategy

*(Continued from page 3)*

a huge waste of company time and money.

As the cultural curator for your company, it's your responsibility to get employees motivated to appreciate new technology, or at least understand the value of it so they will use it without too much whining. This isn't an impossible task. Think about the reasons why you value new solutions, reasons like how new tech makes your business more secure and more com-

petitive. All you have to do is communicate these benefits to your team. Feel free to let your passion for technology show when you're explaining things, and if you happen to not be charismatic enough to "rally the troops," then you probably know someone with this ability.

In fact, Total Networks can be the technology ambassador your team needs. We can talk to your employees about the benefits of fully adopting new solutions, and we can provide

your organization with the educational resources needed to influence your company culture about the value of new technology. Implementing new technology can be difficult (especially when people are involved), but we're here to make the process easy. Call us at (602)412-5025 to learn about the best ways to make technology work for you, and not the other way around.



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We work together with our IT Managed Services clients to jointly create and maintain an up-to-date, effective written technology plan and budget.

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## How Secure Are Your Virtual Servers?

*(Continued from page 3)*

network. This keeps untrusted entities from accessing your precious data.

- **Use advanced security tactics.** Against particularly nasty threats, you need particularly strong antivirus and malware protection. You need an advanced solution that can protect you from most variants of threats out there. A powerful solution like a Unified Threat Management device (UTM) from Total Networks is a comprehensive combination of firewalls, antivirus, web filtering, and much more,

that keeps your network as safe as can be.

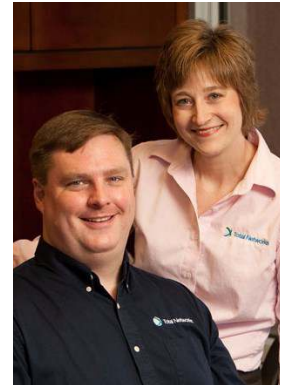
- **Take control.** Administrators need to take proper measures to keep unauthorized users from accessing the virtual server interface. Integrate two-factor authentication and log both successful and failed attempts to access the system. Ask Total Networks for further details on how to integrate more powerful security solutions into your business technology.
- **Have a disaster recovery plan intact.** This goes without saying, but every business should have a solid backup and recov-

ery solution in case the worst happens. You don't want to be caught unprepared in the face of disaster. Total Networks offers a powerful Backup and Disaster Recovery (BDR) solution which keeps your information backed up safe and secure off-site. In the event of a disaster, you can recover your data quickly and efficiently with minimum downtime.

Total Networks offers managed IT services for...



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