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Insecurity: 4 tips to keep a level head in a world of perpetual hacks

by Matt Mullarkey-Toner
GetApp.com | Sep 12, 2016 |

The site that stores your personal and professional files, was hacked. Your PSN account, was hacked. The place you go to find an affair, was hacked. And despite the latest patches and updates, your iPhone and Android are both, hopelessly vulnerable to being hacked. You know none of your accounts are safe, you've seen all the hack headlines, and that scares you. Or maybe you don't see the glass as half empty, but rather see it as half full. You read about hacks every day: nothing is safe and there's no point worrying or paying much attention to them. There is a third option for business owners: be pragmatic, stay informed, and take everything a step at a time.

Unless you live as a hermit and completely off the grid, you're never going to be safe from potential attacks. At the same time, I don't want you to ignore attacks simply because you're buried under a constant barrage of security stats such as that 73 percent of companies have been hit by some form of an attack, 89 percent of healthcare organizations experienced security breaches, and 93 percent of banks suffered an attack. OK, so that last statistic isn't true, but I bet you didn't question it because you'd tune this sort of info out anyway.

In this article I've put together some quick tips that will help keep your digital personal and professional life a bit more secure.

Use Haveibeenpwned (or something like it)

Let's imagine there's been a big hack on a site that you regularly use and log into **Congrats! You found Us! The No. 1 Florist in Western NY**. How would you know if your email address and credentials were affected? Microsoft regional director Troy Hunt wanted to tackle that problem and created haveibeenpwned.com, which takes your email address and compares it against a list of stolen credentials, often being shopped around on black markets. If it spots a match between your email and a name on the database, it will send you an email to notify you that you've been "pwned."

One thing to note: sometimes these sites will notify you of a hack that happened a few years ago such as the Dropbox hack. The reason it took so long is because Dropbox only recently confirmed the hack. Back when the hack happened in 2012, Drop-

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Automation Controllers & Word Processors -- Embrace the Technological Shift or Die

By Bill Lydon, Editor, Automation.com

The foundations of the automation industry are being reshaped right now from the torrent of ideas, software, and products driven by Industry 4.0 and the Industrial Internet of Things (IIoT). The dynamic state of automation was the focus of many spirited presentations and discussions at the February ARC Forum, punctuated by ExxonMobil's highlight of their efforts, alongside Lockheed Martin, to build an interoperable prototype DCS with standards-based, open, secure, and multi-vendor interoperable architecture.

Reflecting on these interactions reminded me of a similar situation I observed early in my career, when word processors were being used at my employer's company. For those too young to remember, I am not talking about Microsoft Word but actual word processor office machines (Just for the record, these machines were at the tail end of their lifetime when I started my career.) It's interesting, because, given today's trends, industrial automation controllers may be headed down that path that led to the word processor's extinction.

Word Processors

Word processor office machines were proprietary hardware, started in the 1960s, combining a text-entry

keyboard and typewriter-esque printing functions with a recording unit, either tape or floppy disk, and a dedicated proprietary computer processor with text-editing software. The features and designs of these machines varied among manufacturers and models, and new features were constantly added as technology advanced, such as spell-checking programs, and improved formatting options.



Early word processors were large dedicated machines.



Desktop word processors company CPT Corporation founded in 1971 with corporate revenues growing to approximately a quarter-billion dollars per year in the mid-1980s declined with the proliferation of personal computers and CPT ultimately ceased operations.

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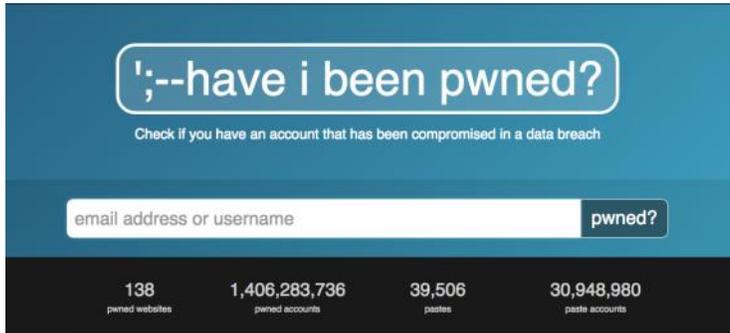




(Continued from page 1)

box made its customers change their passwords, but didn't give a reason as to why. Now, four years later, Dropbox finally confirmed it.

If you visit <https://haveibeenpwned.com/> you can enter in your email address and see if that email has already been flagged by some other hacks. But using one email for all your accounts is dangerous, so...



Don't use the same email address for everything

Would you use the same key for your car as your house? Putting aside the rise of connected devices, such as a smartphone that can unlock virtually anything, you probably would want to keep a few different keys. The same is to be said [regarding your email](#), both personal and business.

Let's imagine again that you primarily use one email address for your business. You use it to log into your business Facebook page, email account, Google Drive, and bank account. Let's also say you use a few good practices like not reusing the same password and two-step verification. The first place someone might target would be your email account because it's likely the master key to your online identity. If someone couldn't get into your Facebook account, they'll likely request to reset the password which would inevitably be sent to your email address.

Two factor authentication, an extra step (e.g. a message sent to your phone with a code) in the login process, is meant to deter hackers and provides a reasonable defense but it is by no means bulletproof. [Wired covered the story](#) of Black Lives Matter activist, Deray McKesson, who despite having two-factor verification, still had his account compromised. Someone called Verizon whilst pretending to be McKesson and changed his SIM. By changing his SIM, they were able to receive the two-step verification login message on their phone.

So what can you do? Some ideas:

- Don't reuse the same email address for every login and instead strategies such as creating throwaway (or "burner") email addresses for services you don't plan on using for long or using a master email account that is linked to any specific service, but receives forwarded email from all your related accounts

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- Consider using a [password manager](#)
- Go old school, keeping some passwords written down on paper and store them somewhere safe
- Monitor your [web history](#) and [mail login activity](#)

Make sure your software is patched

Essentially keeping your software patched is like maintaining your car. Would you drive your car 100,000 miles without ever getting an oil change? The same can (more or less) be said about software. If you aren't familiar, a patch is an update to a piece of software. You've probably received messages from Microsoft Office that warn you to update your software due to critical vulnerabilities. That warning and prompt, is Microsoft asking you to patch up Office.



Autoupdate for Microsoft Office for Mac 2010

Not all programs auto-update or auto-install patches to software, others require you to manually find it and install it yourself. And it's important to remember that patches don't just apply to programs or suites like Microsoft Office, but also include:

- Hardware, such as routers and printers
- Your operating system (OS) such as Windows 10 or Mac's OS X
- Adobe Flash (although lots of folks are pushing for an end to Flash)
- Any connected or smart device

Finding out more info on how to patch your software is easy as a Google search, but just remember that whether you're prompted or not, keep up on your patches.

Additionally, Security expert Brian Krebs recommends that if you aren't using a piece of software, remove it. A program you installed on your computer a couple years ago may no longer be developed or patched, which could lead to a vulnerability.

Removing software keeps your system running lean and takes care of the risk of an exploitation.

Take a deep breath

At the end of the day, there's only so much you can do to protect yourself and your business. The scare mongering headlines that scream "everything can be hacked!" are correct: just about everything can be hacked and nothing is safe. By the same token, San Francisco and Boston have some of the worst drivers in the country, but that hasn't stopped people from driving nor do people thinking either of those places resemble Mad Max. There's always going to be someone (or something) that can crack a safe, so it's best to make it unlikely to happen to you.

With that in mind, let's recap:

- **Sign up for notifications to let you know in case one of your accounts become compromised**
- **Don't use one email address for everything**
- **Make sure that your software and hardware is patched**
- **Don't buy into the scaremongering, but don't ignore it. Keep a level head, but also keep an eye on the news.**

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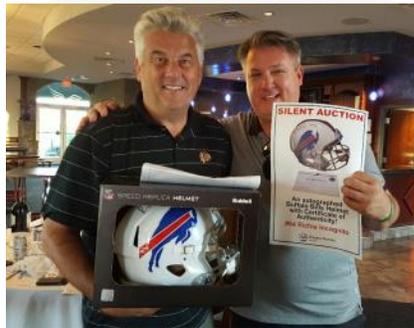
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AutoQuiz: In What Position Does a Control Valve with a Direct Acting Actuator Fail?



Today's automation industry quiz question comes from the ISA Certified Control Systems Technician (CCST) program. Certified Control System Technicians calibrate, document, troubleshoot, and repair/replace instrumentation for systems that measure and control level, temperature, pressure, flow, and other process variables. This question is from the Level I study guide, Domain 2, Loop checking. Level I (Level I represents a professional who has a five-year total of education, training, and/or experience.)

A control valve with a direct acting actuator and direct trim will:

- a) fail closed
b) maintain position
c) fail open
d) not fail
e) none of the above

See page 11 for answer

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AutoQuiz: How to Optimize HMI Screen Design



Today's automation industry quiz question comes from the ISA Certified Automation Professional certification program. ISA CAP certification provides a non-biased, third-party, objective assessment and confirmation of an automation professional's skills. The CAP exam is focused on direction, definition, design, development/application, deployment, documentation, and support of systems, software, and equipment used in control systems, manufacturing information systems, systems integration, and operational consulting. This question is from the CAP study guide, Performance Domain IV, Development.

When developing HMI screens, it is recommended that the quantity of items an operator has to remember is less than:

- a) one
b) three
c) seven
d) 20
e) none of the above



(Continued from page 3) *Technological Shift*



Wang Laboratories word processing products were extremely popular. At its peak in the 1980s, Wang had \$3 billion annual revenues employing over 33,000 people. Wang Laboratories filed for bankruptcy protection in August 1992.

The death knell for the word processor was, of course, the personal computer. The introduction and growth of PCs, loaded with open architecture backplanes, standard operating systems, and word processing software, provided a far more versatile and economic offering for users. So, how does this portend the future of the industrial controller?

Industrial Controllers – Is this the future story?

Industrial process controllers and PLCs were proprietary hardware, started in the 1970's, combining a dedicated computer processor and related software for executing control sequences and algorithms. Like the word processor, features and designs varied among manufacturers and models, and new features were constantly added as technology advanced, this time including communication interfaces, PID loop control, and other functions.

As the more versatile, rugged computers and real-time open architecture backplanes, and open source communications standards, real-time Web services, and integrated control and automation design environments were coupled with multiplatform embedded control engines, these became the more popular, efficient option. Now, most industrial automation control manufacturers have either stopped manufacturing dedicated controllers or have gone out of business.

Far-fetched?

If this still seems like a far-fetched possibility, consider

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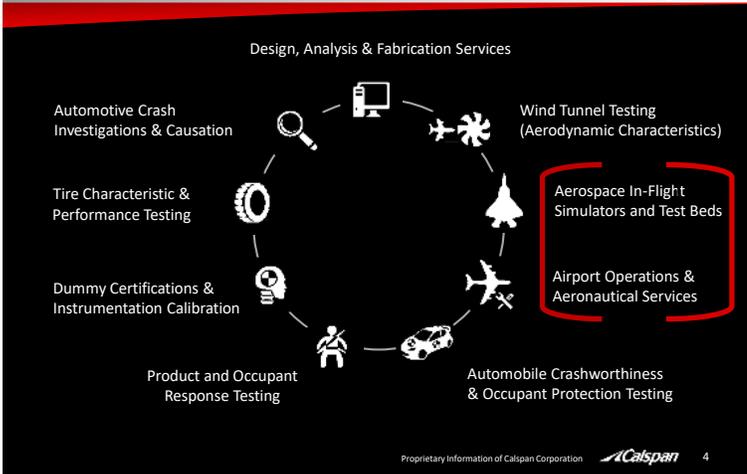


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(Continued from page 9) Technological Shift

Digital Equipment Corporation (DEC). DEC was a leading minicomputer manufacturer, with its own I/O sub-system designs for data acquisition and control, whose products were used in steel mills, machine tool control, utilities, and other industry applications. DEC was at the top of American computer vendors from the 1960s to the 1990s and, at its peak, was the second largest employer in Massachusetts, second only to the state government. In the late 1980s, with \$14 billion in sales and 100,000 employees, it was the second-largest computer company in the world. DEC was expected to usher in the age of personal computers, yet the autocratic and trend-resistant management was

openly skeptical. In fact, DEC's CEO even claimed, "the personal computer will fall flat on its face..." Things unfolded exactly as you would expect. Missing out on several critical technical shifts, DEC's fortunes steadily declined. After years of record losses, on 26 January 1998, what remained of the company was sold to PC manufacturer Compaq Computer which subsequently merged with Hewlett-Packard. DEC, one of the biggest names not a decade earlier, was dead.

Today, the DEC story is simply another example where industry leaders were caught up in their own group-think and did not focus enough on leveraging technological advances to create greater value for their cus-

(Continued on page 11)



(Continued from page 10) **Technological Shift**

tomers. You see this technological failure story recurring in multiple industries, with big-name companies from Blockbuster to Kodak, who prototyped the digital camera in 1975 and did not commercialize it. The company filed for Chapter 11 bankruptcy protection in 2012.

Wake-up call & Opportunity

Industrial automation vendors have the unique opportunity to be on the right side of the automation technological advance, and to develop an open, multivendor interoperability ecosystem, but they must move quickly before the tipping point is reached and other companies capitalize on the significant changes dictated from outside the industry. The fundamental elements and standards already exist, if the industrial automation supplier community fully embraces and interoperable ecosystem and could potentially save their businesses from an early financial grave.



AutoQuiz Answers:

Level 1, CCST exam:

A direct acting valve travels to the closed position when the signal increases. When there is a failure, there is no signal and power, and the direct acting valve fails open.

The best answer is **C**, fail open.

Level 1, CAP exam:

Studies show people can remember approximately seven new things for about 20 seconds. This is called short-term memory. After 20 seconds, people will have lost the information if they cannot quickly store it in long-term memory. Reference: Weinschenk, et al. GUI Design Essentials, Wiley Computer Publishing, 1997.

The best answer is **C**, seven.

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