



# Global Information Assurance Certification Paper

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# **“I Am The Gatekeeper”**

**A Company Security Handbook**

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**\*\*NOTE\*\*** -- This handbook is intended as a template for security personnel who do not have such a handbook in place. The intended targeted audience is the general user community who may not be aware of security issues. Specifics may vary at your company but this will serve as a guide and covers the most common user security points.

### **Abstract (About This Handbook)**

This handbook will help all employees protect the company and themselves from business interruptions and liability caused by inappropriate use of data and information technology assets. It describes employee responsibilities for safeguarding computer equipment and information from accidental or intentional unauthorized disclosure, modification or destruction. It also describes appropriate and inappropriate use of company computers and information. Employees may be disciplined for non-compliance with these policies.

This handbook does not address every possible security issue. It is your responsibility to always use sound judgment. Should you come across an issue or situation that you feel may be a possible security issue, please report it immediately to your manager, the company help desk or a member of the Information technology department.

### **A Message to the Employee**

Information and information assets are critical resources. Security and information security is everyone's responsibility, so we must all be aware of what it takes to do this important part of our job. With rapidly changing technology and the increased use of the Internet, there is an increased potential for virus attacks, intrusion from unauthorized personnel and other security issues. It is essential for all employees to help reduce security risks, prevent unauthorized use of information assets and prevent compromise of business operations. Accordingly, you should become familiar with this handbook and incorporate these guiding principles into your daily activities. Direct any concerns about the protection of information to your manager, the company help desk, computer security management or designated members of the company's information technology department.

These efforts will ensure the confidentiality, integrity and availability of information system resources and result in increased customer confidence and ensure successful performance of organizational responsibilities

### **Internet Background <sup>(1)</sup>**

The Internet is the global network of networks, which uses the TCP/IP protocols or are able to work together and trade information and files by means of TCP/IP networks. It provides users with electronic mail, file-transferring capabilities, news, the World Wide Web and other associated services and utilities.

The Internet began in the last 1960's and was originally known as ARPANET. The initial intention was to link military installations for protected information sharing. During the 1970's and 1980's it expanded to universities and commercial organizations were seen in the 1990's. Today, the Internet, as we know it, is comprised of millions of computers.

# Computer Security: the basics

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## The Goal

The goal for computer security is to prevent the unauthorized disclosure, modification, corruption, degradation, or destruction of information and information technology assets, whether by accidental or intentional means.

## Elements of computer security <sup>(2)</sup>

Effective computer security is based on four (4) essential elements:

Confidentiality, Integrity, Availability and Authentication

**Confidentiality** means assuring information will be kept limited to users who have a business need to know. The tides have shifted and a majority of security breaches come from within organizations, whether by intentional or unintentional means and these internal events can be prevented. While working at your computer, using a password protected screen saver on your system or pressing <CTRL>-<ALT>-<DEL> keys to lock the workstation before leaving your office is recommended.

**Integrity** means ensuring that information will not be accidentally or intentionally changed or deleted. The accuracy of information is paramount to goals of the organization and a sound business practice is to have the information always accurate and available should it need to be recovered from a tape backup or other method, such as a database dump or a drive device mirror configuration. These measures sometimes take place following an accidental file or folder deletion or unauthorized breach with the intent to alter data.

**Availability** addresses access to data and applications. Through measures implemented by the Information Technology staff, a “high availability” posture has been implemented to ensure that when a user or client needs to have the most current and accurate information, that information can be delivered when it is requested.

**Authentication** allows resources such as printers, designated directories or drives in a computer system or entire systems to be restricted to specific users. The most common form of authentication is a login and password combination that verifies user information. The following are three basic examples of authentication:

|                    |   |
|--------------------|---|
| Something you have | Identification card, credit cards, ATM cards        |
| Something you know | Passwords or personal identification numbers (PINs) |
| Something you are  | Fingerprints, voiceprints or retinal scans          |

Unfortunately, these authentication items are common targets of individuals whom possess the intent of taking these from you. They are known as social engineers and will use all possible means to extract information under the guise of honesty and goodwill but have no intention of remaining that way once they have what they are after. Protect your authentication and identity items carefully and do not disclose them to anyone.

# Employee responsibilities

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## You hold the key

Every employee is responsible for computer security. Management and the information technology organizations establish policies and guidelines but successful implementation of those guidelines are dependent on every employee. Employee responsibilities are:

- Maintaining confidentiality
- Managing your passwords
- Limiting access to shared files
- Backing up your files
- Locking your office and files
- Maintaining your equipment
- Communicating responsibly
- Protecting against viruses
- Respecting software licenses
- Monitoring security advisories

Each of these items is outlined in detail in the following sections.

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## Maintaining confidentiality

During the course of your employment, you may have access to or become familiar with confidential or proprietary information regarding business operations and those of our clients. This information may include customer lists, subscription lists, contracts, policies, financial statements, projections, plans, strategies, methods and so on. It is every employee's responsibility to not disclose any confidential information, directly or indirectly and to avoid using the information except as required in the course of your employment.

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## Managing your passwords<sup>(3)</sup>

Passwords are your personal “something you know” means of authentication. It is important that you choose appropriate passwords and change them on a regular basis. Here are some guidelines to help you:

- Use a password that is easy to remember and difficult to guess (i.e. – pokeywasthehorse) – all one word.
- Use a password with a mixture of alphabetic and non-alphabetic characters (digits and punctuation). (i.e. – X21b!u@s9)
- Use a password of at least 8 characters (i.e. – M!k1Ew@sh37e)
- Change your passwords at regular intervals. Contact your company help desk or designated Information Technology representative for the suggested interval and assistance, if required.
- Change all vendor-supplied or default passwords on a computer prior to connecting to the network. Many “hackers” will use the built-in accounts and their default passwords on operating

systems to breach computer systems. Once they have access to a computer, they have access to whatever network connections and information the user has access.

- Change your password immediately if it has been disclosed (or if you suspect it has been disclosed) to anyone.

Additionally, there are several things you should not do when managing passwords:

**Do not:**

- use your login name in any form as a password (i.e. – reversed, capitalized, doubled and so on)
- use your first or last name in any form (i.e. – Michael01)
- use other personal information that can be easily obtained. This includes license plate numbers, birth dates, names of spouses, children or pets, telephone or social security numbers, zip code, your street name and/or address.
- use a password of all digits or all the same letter (i.e. – 77777777)
- use a single word contained in English or foreign language dictionaries, spelling lists or other word lists. Password cracking programs use standard dictionary words and combinations thereof as their points of reference in attempts to uncover passwords.
- write down your password and leave it where unauthorized personnel might have access to it. The most common mistake is writing down your system password on a “post-it” note and sticking it in plain site, usually on the edge of the monitor and under the keyboard where it is “hidden” is the 2<sup>nd</sup> most common place where anyone who is in the building having the intent of breaching your system will look. If you must write it down to remember it, keep it on your person at all times.
- share your passwords with anyone. There should never be a need for an administrator to request disclosure of your password over the phone. Such requests should come on a one to one basis, where you can verify the identity of the person.

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### **Limiting access to shared files**

Microsoft Windows file sharing features allow you to share part or all of your hard drive over a network. While this facilitates collaborative work, it can also result in a significant security exposure. If you share “read access” to your entire C drive, everything on your drive is at risk of disclosure. If you share “full access” to your entire C drive everything on your drive is at risk of disclosure, modification or deletion. Additionally, software is widely available on the Internet that allows anyone with access to the LAN (local area network) to hack into password-protected files. Some recent viruses can identify unprotected, writeable shares on a network and delete the related files or infect the machine.

It is strongly encouraged that you implement the following precautions:

Password protect or limit user/group access to shared directories and files, share only directories and files that must be shared, allow read only where possible, never share your entire C drive with “full control” granted to everyone... not even for a few moments.

(Contact your user support group for directions and/or assistance)

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## **Backing up your files**

Any file that contains business information should be backed up. If your files are saved to a file server then it is likely that they are already being backed up. If you save to your local hard drive, you should also save to your network home directory. Files can also be backed up onto floppy disk or other removable media backup, which should then be locked in your desk drawer or overhead cabinet. (See the following section)

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## **Locking your office and files**

Physical security measures play an important part in the overall information security scheme. Diskettes and other removable media containing sensitive information should never be left on your desk or anywhere in the open. All removable media should be secured behind a locked drawer or cabinet. Do not leave this key in the office, take it home with you. A copy of the key may also be left with your manager. Sensitive information should be secured anytime you leave the office, not just when you go home.

Locking your computer when leaving the office is another practice that should become habit. In Windows NT, 2000 and XP press the <CTRL> <ALT> <DEL> keys to display the windows security dialogue box and select "Lock Workstation" or "Lock Computer". You can now leave your area knowing the system is secure. On Windows 95 and 98 machines, you can set a password lock on your screensaver and adjust the activation time for a few minutes.

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## **Maintaining your equipment**

It is very important to keep your computer in good working condition. Do not leave liquid near your keyboard or computer even if it is in a sealed or spill-proof container. Do not eat close to your keyboard or mouse... crumbs can be as damaging as liquids.

Diskettes that you use on a regular basis should be retired after six months. Copy the information, verify the copy was successful and then erase and discard the old floppy. Any diskette that begins to show errors in reading should be immediately copied verified and destroyed. Under no circumstances should you discard a diskette that contains data in the trash. CDs that are being discarded should be snapped in half before being discarded.

If your hard drive begins to give you trouble, immediately report the trouble to your company help desk or user support group and then back up your data to your network home directory.



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## Communicating responsibly

### Email guidelines

E-mail has rapidly become the principal means of communication, is a strategic company resource and should be treated as such. E-mail servers are normally backed up on a regular basis however if you save or archive messages locally, such as to an offline folder, you should back up the folder in the same manner as any other sensitive information (see “Backing up your files” on page 7).

E-mail is also a tactical resource and, as such, produces many documents of limited life span (project related e-mail). Periodically, you should go through your inbox and remove messages that have exceeded their usefulness. Some can be simply deleted; others may have historical importance, in which case you should archive them.

E-mail may sometimes be used as a personal resource... this is recognized. A certain amount of personal (non-business related) e-mail may be acceptable in accordance with local company policies. Please use good judgment on this, keeping in mind that your computer is a company resource, not a personal one, you are on company time and correspondence may be subject to monitoring and review.

E-mail can also be time consuming. There is a tool available to help you deal with email efficiency – filtering. Filtering lets you set up rules and the system will automatically filter messages according to those rules. Example: “spam” (unsolicited email messages) can be deleted before you ever see it. Messages can be sorted by sender or other criteria and place specific messages into various folders that you can read based upon your own priorities.

### Appropriate Use

Employees are expected to use electronic and telephonic communications equipment and facilities for legitimate business purposes in a manner that is consistent with company policies and procedures. While respecting your privacy and understanding that employees should have a reasonable expectation of privacy, communications may, from time to time, be monitored or intercepted and a review of the use of electronic communications may follow to ensure that usage is consistent with legitimate business interests.

### Inappropriate use <sup>(4)</sup>

All users are expected to conduct themselves professionally and are to refrain from using office equipment, the Internet and e-mail systems for activities that are inappropriate, which includes, but not limited to: Use that could cause congestion, delay, or disruption of service to any system or equipment, i.e. -- Greeting cards, videos or other large file attachments can degrade the performance of the network. Continuous data streams (i.e. – Internet radio and ticker tape banners such as weather and stock information) can also degrade network performance.

Creating, transmitting or forwarding chain letters or other unauthorized mass mailings, regardless of subject matter.

Any illegal or offensive activity that is offensive to fellow employees, clients, contractors or the public. This includes any messages that deride others on the basis of race, creed, religion, color, sex, disability, national origin, or sexual orientation.

Creating, downloading, viewing, saving or transmitting sexually explicit or sexually oriented materials.

Gambling, weapons, terrorist activities and any other illegal activities.  
Use for profit or outside employment or outside business activity.  
Any outside fundraising activity without authorization or endorsing any product or service.  
Posting company information to newsgroups or other public forum without authority.  
On-line games, false self-representation, interfering with any employee's duties or the operation of Internet gateways and any type of personal solicitation.

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### **Protecting against viruses**

You are connected to the Internet. You can exchange documents with others. You have e-mail. Therefore, you are vulnerable to viruses. You are required to run the company standard anti-virus program on any machine that contains company documents, email and that connects to the network, whether locally or remote. (Further detail on this will be provided in an upcoming section).

Viruses are becoming more prevalent and virulent every day. While technology can do a great deal to keep resources safe, it is still up to you to follow a few simple best practices:

Do not download software from questionable sites. This particularly applies to games, screensavers, backgrounds, icons and other “cool stuff” that is widely available.

Never open e-mail attachments from someone you do not know. Additionally, do not open an attachment from someone you DO know if you cannot verify that the person intended to send you that attachment and that it is work related. Be suspicious of attachments that will show you something cute, funny or exciting and spicy.

Never double click the attachment. This has been known to be the easiest way to unwittingly infect your own workstation system and spread malicious code from your machine. Instead, save the attachment to a known local location (your hard drive), open the program that is normally associated with the type of file and then open the attachment through the program.

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### **Respecting software licenses**

It may be the policy of your company to not accept or use hardware, software, data or other information belonging to another company without that company's written consent. Additionally, software that is not properly licensed may not be allowed nor copying of software for use at home except as expressly stated in the license agreement and your company's software usage policy.

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### **Monitoring security advisories**

Most likely, there is a method of posting security and virus advisories and practices. You should monitor these posting on a regular basis to avoid a potential unnecessary threat and protect your computer.

# Security outside of the office

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## Telecommuting

Before you telecommute, you must make your computer secure from other who may have access to that system. Any time you are connected to the Internet, you are vulnerable to attacks by hackers attempting to take over your machine for their own purposes or a greater cause.

If you are dialing into a company modem pool, you are most likely protected. If you are connecting via a cable modem or a DSL connection or dialing into a public Internet Service Provider (ISP), you will require a firewall. This is either hardware or software that filters out attacks, blocking them before they can harm your computer or hijack your secure session. Any computer-to-computer communication over the network must conform to individual company security requirements. This may include connecting via a Virtual Private Network (VPN) connection. User support, security administration or network administration personnel should have information on the company requirement.

Backup procedures are as important at home as they are in the office. Make sure you have duplicate copies of any work ... one on your hard drive and one on floppy or other removable media option.

Approved anti-virus programs and updated virii pattern files must be run on any home system that will be connecting to the network.

## Traveling

Always hand-carry your laptop. Pay strict attention when passing through airport security scanners, especially when you have to put your laptop, PDA or other device o the x-ray scanner. Thieves often work in pairs... while one stalls you, the other is scooping up your equipment. Remain alert. Similarly, always carry your laptop yourself. Never let anyone else carry it for you, even if the seem to be airport employees. This has changed a bit since 9/11 but again, remain alert. Use the security features on PDA's and laptops so unauthorized use may be prevented if they are lost or stolen and report losses and thefts immediately.

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# Awareness and ongoing training <sup>(5)</sup>

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## Delivery of awareness programs

It only takes a single lapse to put the organization's data and information resources at risk. Therefore, ideally, staff would develop their awareness of Information Security risks so that it almost becomes second nature. The task of developing the awareness program and providing ongoing training to the user community is part of the responsibilities of the information security staff and designated information technology personnel.

Through the implementation of this program, the potential for critical impact on data and information assets is lessened by the following actions as part of an overall comprehensive awareness program.

As part of an overall comprehensive security awareness package, the information security staff will ensure that a focus on information security issues is maintained by providing the distribution of regular security notifications, appropriate 'change of function' training prior to commencing new duties, a mandatory receipt of Information Security Education for you to initial, Information Security awareness training products and programs to ensure that information security issues are in mind. Further attention will be presented by briefing all personnel and contractors who will have access to sensitive company systems, information, or assets, training using available multi-media (classes, web pages, on-line documents and video), <sup>(6)</sup> regular training intervals and as part of your new employee orientation program, training to support staff, users and managers, on appropriate levels. Additionally, the IS staff will review its security training procedures regularly to ensure they are up to date and relevant.

All associates will be scheduled for the mandatory annual security training. Upon conclusion of this instruction, managers will make certain that the proper documentation indicating the completion of the training is sent to HR for insertion in the individual's personnel file. <sup>(7)</sup>

These measures are an element of the information security training you will receive and at unannounced intervals, periodic testing of security issues and standards will be conducted to maintain the level of focus and awareness of current issues and best practices.

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# Contacts and resources

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## If you need help...

The following is a template for your use and presents some of the resources through which you can get more information or solve specific security related issues. Maintaining this list and knowing who to contact can reduce the impact of a possible breach of security.

| <u>Resource</u>                    | <u>Contact Information</u>  | <u>Description</u>   |
|------------------------------------|---|--|
| Your Manager                       | Name _____<br>Phone _____<br>E-mail _____                                 | Immediate Supervisor   |
| Company help desk                  | Phone _____<br>E-mail _____<br>URL _____                                  | To report potential security issues, acquire software, hardware and technical assistance |
| Information Technology Personnel   | Networking _____<br>E-mail Admin _____<br>Backups _____<br>Security _____ | Possible escalation point for security events if help desk personnel are not available   |
| Computer Security Management Staff | Name _____<br>Phone _____<br>E-mail _____                                 | Designated security staff personnel  |
| Security Director                  | Name _____<br>Phone _____<br>E-mail _____                                 | Director or Manager of Security  |

# References

## (1) - Internet Background

Internet Security Policy: A Technical Guide – 1. Introduction

<http://secinf.net/info/policy/isptg.en/ISPTG-1.html#Heading5>

## (2) - Elements of Computer Security

Excerpts and definitions based upon and extracted from:

Information Security Policy and Standards Information Systems and Technology

University of Waterloo

<http://dcs.uwaterloo.ca/security/bcp/info.html>

## (3) - Managing passwords - Concepts based upon:

“Managing Windows NT Logons” By Kathy Ivens 1st Edition January 2000 ISBN# 1-56592-637-4

Chapter 2 – Password Problems

<http://www.oreilly.com/catalog/ntlogon/chapter/ch02.html>

## (4) - Inappropriate Use

Excerpts from:

United States Department of Agriculture – Natural Resources Conservation Service

National Information Security Handbook

PART 602 - INTERNET USAGE AND E-MAIL GUIDELINES

Section 602.5 – Inappropriate Usage

[http://public.nrcs.usda.gov/scripts/lpsiis.dll/H/h\\_270\\_602.htm](http://public.nrcs.usda.gov/scripts/lpsiis.dll/H/h_270_602.htm)

(Information and items used as a template. Portions changed to reflect non-government terminology)

## (5) - Awareness and ongoing training

Concepts and excerpts from:

RUSecure Evaluation Security Online Support Evaluation

[Information Security Policies](#) .... full policy evaluation copy

## (6) - Portions excerpted from SANS Institute Network Security Roadmap Poster:

<http://www.sans.org/newlook/publications/roadmap.htm>

## (7) - Information Security Policy Manual

by Edmond D. Jones ISBN# 1-931-332-09-6

Published by The Rothstein Catalog On Disaster Recovery

EXCERPT - SAMPLE POLICY: SECURITY AWARENESS AND TRAINING PROGRAM

<http://www.disastercenter.com/Rothstein/cd524a.htm>

# Upcoming Training

Click Here to  
**{Get CERTIFIED!}**



|  |                             |                             |                |
|--|-----------------------------|-----------------------------|----------------|
| Community SANS New York SEC401*                                  | New York, NY                | Sep 25, 2017 - Sep 30, 2017 | Community SANS |
| Rocky Mountain Fall 2017   | Denver, CO                  | Sep 25, 2017 - Sep 30, 2017 | Live Event     |
| SANS Copenhagen 2017   | Copenhagen, Denmark         | Sep 25, 2017 - Sep 30, 2017 | Live Event     |
| SANS Baltimore Fall 2017   | Baltimore, MD               | Sep 25, 2017 - Sep 30, 2017 | Live Event     |
| Community SANS Sacramento SEC401                                 | Sacramento, CA              | Oct 02, 2017 - Oct 07, 2017 | Community SANS |
| SANS DFIR Prague 2017  | Prague, Czech Republic      | Oct 02, 2017 - Oct 08, 2017 | Live Event     |
| Mentor Session - SEC401  | Minneapolis, MN             | Oct 03, 2017 - Nov 14, 2017 | Mentor         |
| SANS October Singapore 2017                                      | Singapore, Singapore        | Oct 09, 2017 - Oct 28, 2017 | Live Event     |
| SANS Phoenix-Mesa 2017   | Mesa, AZ                    | Oct 09, 2017 - Oct 14, 2017 | Live Event     |
| SANS Tysons Corner Fall 2017                                     | McLean, VA                  | Oct 14, 2017 - Oct 21, 2017 | Live Event     |
| SANS Tokyo Autumn 2017   | Tokyo, Japan                | Oct 16, 2017 - Oct 28, 2017 | Live Event     |
| CCB Private SEC401 Oct 17  | Brussels, Belgium           | Oct 16, 2017 - Oct 21, 2017 |                |
| SANS vLive - SEC401: Security Essentials Bootcamp Style          | SEC401 - 201710,            | Oct 23, 2017 - Nov 29, 2017 | vLive          |
| Community SANS Omaha SEC401                                      | Omaha, NE                   | Oct 23, 2017 - Oct 28, 2017 | Community SANS |
| SANS Seattle 2017  | Seattle, WA                 | Oct 30, 2017 - Nov 04, 2017 | Live Event     |
| San Diego Fall 2017 - SEC401: Security Essentials Bootcamp Style | San Diego, CA               | Oct 30, 2017 - Nov 04, 2017 | vLive          |
| SANS San Diego 2017  | San Diego, CA               | Oct 30, 2017 - Nov 04, 2017 | Live Event     |
| SANS Gulf Region 2017  | Dubai, United Arab Emirates | Nov 04, 2017 - Nov 16, 2017 | Live Event     |
| SANS Miami 2017  | Miami, FL                   | Nov 06, 2017 - Nov 11, 2017 | Live Event     |
| Community SANS Vancouver SEC401*                                 | Vancouver, BC               | Nov 06, 2017 - Nov 11, 2017 | Community SANS |
| Community SANS Colorado Springs SEC401**                         | Colorado Springs, CO        | Nov 06, 2017 - Nov 11, 2017 | Community SANS |
| SANS Sydney 2017   | Sydney, Australia           | Nov 13, 2017 - Nov 25, 2017 | Live Event     |
| SANS Paris November 2017   | Paris, France               | Nov 13, 2017 - Nov 18, 2017 | Live Event     |
| Community SANS Portland SEC401                                   | Portland, OR                | Nov 27, 2017 - Dec 02, 2017 | Community SANS |
| SANS London November 2017  | London, United Kingdom      | Nov 27, 2017 - Dec 02, 2017 | Live Event     |
| SANS San Francisco Winter 2017                                   | San Francisco, CA           | Nov 27, 2017 - Dec 02, 2017 | Live Event     |
| Community SANS St. Louis SEC401                                  | St Louis, MO                | Nov 27, 2017 - Dec 02, 2017 | Community SANS |
| SANS Khobar 2017   | Khobar, Saudi Arabia        | Dec 02, 2017 - Dec 07, 2017 | Live Event     |
| SANS Munich December 2017  | Munich, Germany             | Dec 04, 2017 - Dec 09, 2017 | Live Event     |
| SANS Austin Winter 2017  | Austin, TX                  | Dec 04, 2017 - Dec 09, 2017 | Live Event     |
| Community SANS Ottawa SEC401                                     | Ottawa, ON                  | Dec 04, 2017 - Dec 09, 2017 | Community SANS |