

THE MOST TRUSTED SOURCE FOR INFORMATION SECURITY TRAINING, CERTIFICATION, AND RESEARCH

# SANS

# San Jose 2017

San Jose, CA March 6-11

PROTECT YOUR COMPANY AND ADVANCE YOUR CAREER  
WITH HANDS-ON, IMMERSION-STYLE

## INFORMATION SECURITY TRAINING

TAUGHT BY REAL-WORLD PRACTITIONERS



# SILICON VALLEY

**Six courses on**

CYBER DEFENSE

PENETRATION TESTING

DETECTION & MONITORING

SECURE DEVELOPMENT

INCIDENT RESPONSE

ETHICAL HACKING

“I was humbled, challenged,  
encouraged, and trained.  
I feel 100% more qualified  
to defend my company’s network.”

-IVAN DOMINGUEZ, NORTHWEST COMMUNITY CREDIT UNION



GIAC-Approved Training

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\$400**

Register and pay by  
Jan 11th — Use code  
**EarlyBird17**

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## SANS Instructors

SANS instructors are real-world practitioners who specialize in the subjects they teach. All instructors undergo rigorous training and testing in order to teach SANS courses. This guarantees that what you learn in class will be up to date and relevant to your job.

The SANS San Jose 2017 lineup of instructors includes:



**Adrien de Beaupre**  
Certified Instructor  
@adriendb



**Matt Edmondson**  
SANS Instructor  
@matt0177



**Paul A. Henry**  
Senior Instructor  
@phenrycissp



**Seth Misenar**  
Senior Instructor  
@sethmisenar



**Michael Murr**  
Principal Instructor  
@mikemurr



**Clay Risenhoover**  
Certified Instructor  
@AuditClay



**Bryan Simon**  
Certified Instructor  
@BryanOnSecurity

## Evening Bonus Sessions

Take advantage of these extra evening presentations and add more value to your training. Learn more on page 8.

**KEYNOTE: *Evolving Threats*** – Paul Henry

***Actionable Detects: Blue Team Cyber Defense Tactics*** – Seth Misenar

***Python for OSINT Domination*** – Matt Edmondson

***HTTPdeux*** – Adrien de Beaupre

**Save \$400 when you register and pay by Jan 11th using code *EarlyBird17***

## Courses at a Glance

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SEC642 <b>Advanced Web App Penetration Testing, Ethical Hacking, and Exploitation Techniques</b>	Page 6 <b>NEW!</b>					
DEV522 <b>Defending Web Applications Security Essentials</b>	Page 7					

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**#SANSSanJose**

# The Value of SANS Training & YOU



## EXPLORE

- Read this brochure and note the courses that will enhance your role in your organization
- Use the Career Roadmap ([www.sans.org/media/security-training/roadmap.pdf](http://www.sans.org/media/security-training/roadmap.pdf)) to plan your growth in your chosen career path

## RELATE

- Consider how security needs in your workplace will be met with the knowledge you'll gain in a SANS course
- Know the education you receive will make you an expert resource for your team

## VALIDATE

- Pursue a GIAC Certification after your training to validate your new expertise
- Add a NetWars Challenge to your SANS experience to prove your hands-on skills

## SAVE

- Register early to pay less using early-bird specials

## ADD VALUE

- Network with fellow security experts in your industry
- Prepare thoughts and questions before arriving to share with the group
- Attend SANS@Night talks and activities to gain even more knowledge and experience from instructors and peers alike

## ALTERNATIVES

- If you cannot attend a live training event in person, attend the courses virtually via SANS Simulcast
- Use SANS OnDemand or vLive to complete the same training online from anywhere in the world, at any time

## ACT

- Bring the value of SANS training to your career and organization by registering for a course today, or contact us at 301-654-SANS with further questions

## Return on Investment

SANS live training is recognized as the best resource in the world for information security education. With SANS, you gain significant returns on your InfoSec investment. Through our intensive immersion classes, our training is designed to help your staff master the practical steps necessary for defending systems and networks against the most dangerous threats – the ones being actively exploited.

## REMEMBER

*the SANS promise:*  
***You will be able to apply  
our information security  
training the day you get  
back to the office!***

## Six-Day Program

Mon, Mar 6 - Sat, Mar 11

9:00am - 7:00pm (Days 1-5)

9:00am - 5:00pm (Day 6)

46 CPEs

Laptop Required

Instructor: Bryan Simon


[www.giac.org/gsec](http://www.giac.org/gsec)

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## ► II

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[www.sans.org/ondemand](http://www.sans.org/ondemand)

"Loved this course!

So practical.

My customer's systems  
will be more secure as  
a result of this course."

-HOWARD FOSTER,  
SCHNEIDER ELECTRIC



This course will teach you the most effective steps to prevent attacks and detect adversaries with actionable techniques that you can directly apply when you get back to work. You'll learn tips and tricks from the experts so that you can win the battle against the wide range of cyber adversaries that want to harm your environment.

Learn to build a security roadmap that can scale today and into the future!

## SEC401: Security Essentials Bootcamp Style

is focused on teaching you the essential information security skills and techniques you need to protect and secure your organization's critical information assets and business systems. This course will show you how to prevent your organization's security problems from being headline news in the *Wall Street Journal*!

With the rise of advanced persistent threats, it is almost inevitable that organizations will be targeted. Whether the attacker is successful in penetrating an organization's network depends on the effectiveness of the organization's defense. Defending against attacks is an ongoing challenge, with new threats emerging all of the time, including the next generation of threats. Organizations need to understand what really works in cybersecurity. What has worked, and will always work, is taking a risk-based approach to cyber defense. Before your organization spends a dollar of its IT budget or allocates any resources or time to anything in the name of cybersecurity, three questions must be answered:

- What is the risk?      ➤ Is it the highest priority risk?
- What is the most cost-effective way to reduce the risk?

Security is all about making sure you focus on the right areas of defense. In SEC401 you will learn the language and underlying theory of computer and information security. You will gain the essential and effective security knowledge you'll need if you are given the responsibility for securing systems and/or organizations. This course meets both of the key promises SANS makes to our students: (1) You will learn up-to-the-minute skills you can put into practice immediately upon returning to work; and (2) You will be taught by the best security instructors in the industry.

**PREVENTION IS IDEAL BUT DETECTION IS A MUST.**

## Who Should Attend

- Security professionals who want to fill the gaps in their understanding of technical information security
- Managers who want to understand information security beyond simple terminology and concepts
- Operations personnel who do not have security as their primary job function but need an understanding of security to be effective
- IT engineers and supervisors who need to know how to build a defensible network against attacks
- Administrators responsible for building and maintaining systems that are being targeted by attackers
- Forensic analysts, penetration testers, and auditors who need a solid foundation of security principles so they can be as effective as possible at their jobs
- Anyone new to information security with some background in information systems and networking

## Bryan Simon SANS Certified Instructor

Bryan Simon is an internationally recognized expert in cybersecurity and has been working in the information technology and security field since 1991. Over the course of his career, Bryan has held various technical and managerial positions in the education, environmental, accounting, and financial services sectors. Bryan speaks on a regular basis at international conferences and with the press on matters of cybersecurity. He has instructed individuals from organizations such as the FBI, NATO, and the UN in matters of cybersecurity, on two continents. Bryan has specialized expertise in defensive and offensive capabilities. He has received recognition for his work in IT security, and was most recently profiled by McAfee (part of Intel Security) as an IT Hero. Bryan holds 12 GIAC certifications including GSEC, GCWN, GCIH, GCFA, GPEN, GWAPT, GAWN, GISP, GCIA, GCED, GCUX, and GISF. Bryan's scholastic achievements have resulted in the honor of sitting as a current member of the Advisory Board for the SANS Institute, and his acceptance into the prestigious SANS Cyber Guardian program. Bryan is a SANS instructor for SEC401, SEC501, SEC505, and SEC511. @BryanOnSecurity

# Advanced Security Essentials – Enterprise Defender

Six-Day Program

Mon, Mar 6 - Sat, Mar 11

9:00am - 5:00pm

Laptop Required

36 CPEs

Instructor: Paul A. Henry


[www.giac.org/gcied](http://www.giac.org/gcied)

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"Paul Henry is an excellent instructor who presents large volumes of information effectively."

-ROWLEY MOLINA, ALTRIA



## Paul A. Henry SANS Senior Instructor

Paul is one of the world's foremost global information security and computer forensic experts, with more than 20 years' experience managing security initiatives for Global 2000 enterprises and government organizations worldwide. Paul is a principal at vNet Security, LLC and is keeping a finger on the pulse of network security as the security and forensic analyst at Lumension Security. Throughout his career, Paul has played a key strategic role in launching new network security initiatives to meet our ever-changing threat landscape. He also advises and consults on some of the world's most challenging and high-risk information security projects, including the National Banking System in Saudi Arabia, the Reserve Bank of Australia, the U.S. Department of Defense's Satellite Data Project, and both government and telecommunications projects throughout Southeast Asia. Paul is frequently cited by major publications as an expert on perimeter security, incident response, computer forensics, and general security trends, and serves as an expert commentator for network broadcast outlets such as FOX, NBC, CNN, and CNBC. In addition, Paul regularly authors thought leadership articles on technical security issues, and his expertise and insight help shape the editorial direction of key security publications such as the *Information Security Management Handbook*, to which he is a consistent contributor. Paul is a featured speaker at seminars and conferences worldwide, delivering presentations on diverse topics such as anti-forensics, network access control, cyber crime, DDoS attack risk mitigation, perimeter security, and incident response. @phenrycissp

Effective cybersecurity is more important than ever as attacks become stealthier; have a greater financial impact, and cause broad reputational damage.

### SEC501: Advanced Security Essentials

– Enterprise Defender builds on a solid foundation of core policies and practices to enable security teams to defend their enterprise.

It has been said of security that

"prevention is ideal, but detection is a must." However, detection without response has little value. Network security needs to be constantly improved to prevent as many attacks as possible and to swiftly detect and respond appropriately to any breach that does occur. This PREVENT – DETECT – RESPONSE strategy must be in place both externally and internally. As data become more portable and networks continue to be porous, there needs to be an increased focus on data protection. Critical information must be secured regardless of whether it resides on a server, in a robust network architecture, or on a portable device.

"We aren't just learning how to use the tools, we also have real-world examples to avoid possible pitfalls. There is cloud-based analysis that is so useful, but I would never have thought of using it had Paul not covered it."

-STUART LONG, BANK OF ENGLAND

Of course, despite an organization's best efforts to prevent network attacks and protect its critical data, some attacks will still be successful. Therefore, organizations need to be able to detect attacks in a timely fashion. This is accomplished by understanding the traffic that is flowing on your networks, looking for indications of an attack, and performing penetration testing and vulnerability analysis against your organization to identify problems and issues before a compromise occurs.

Finally, once an attack is detected we must react quickly and effectively and perform the forensics required. Knowledge gained by understanding how the attacker broke in can be fed back into more effective and robust prevention and detection measures, completing the security lifecycle.

### Who Should Attend

- ▶ Incident response and penetration testers
- ▶ Security Operations Center engineers and analysts
- ▶ Network security professionals
- ▶ Anyone who seeks technical in-depth knowledge about implementing comprehensive security solutions



# Hacker Tools, Techniques, Exploits, and Incident Handling

Six-Day Program

Mon, Mar 6 - Sat, Mar 11

9:00am - 7:15pm (Day 1)

9:00am - 5:00pm (Days 2-6)

37 CPEs

Laptop Required

Instructors: Michael Murr,  
Matt Edmondson
[www.giac.org/gcih](http://www.giac.org/gcih)

[www.sans.edu](http://www.sans.edu)

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**Michael Murr** SANS Principal Instructor

Michael has been a forensic analyst with Code-X Technologies for over five years. He has conducted numerous investigations and computer forensic examinations, and performed specialized research and development. Michael has taught SEC504: Hacker Techniques, Exploits, and Incident Handling; FOR508: Advanced Digital Forensics, Incident Response, and Threat Hunting; and FOR610: Reverse-Engineering Malware. He has also led SANS Online Training courses, and is a member of the GIAC Advisory Board. Currently, Michael is working on an open-source framework for developing digital forensics applications. He holds the GCIH, GCFA, and GREM certifications and has a degree in computer science from California State University at Channel Islands. Michael also blogs about digital forensics on his forensic computing blog ([www.forensicblog.org](http://www.forensicblog.org)). @mikemurr



**Matt Edmondson** SANS Instructor

Matt performs technical duties for the U.S. government and is a Principal at Argelius Labs, where he performs security assessments and consulting work. Matt's extensive experience with digital forensics includes conducting numerous examinations and testifying as an expert witness on multiple occasions. Matt is a member of the SANS Advisory Board and holds 11 GIAC certifications, including GREM, GCFA, GPEN, GCIH, GWAPT, GMOB and GCIA. In addition, Matt holds the Offensive Security Certified Professional (OSCP) certification. @matt0177

## Who Should Attend

- ▶ Incident handlers
- ▶ Leaders of incident handling teams
- ▶ System administrators who are on the front lines defending their systems and responding to attacks
- ▶ Other security personnel who are first responders when systems come under attack

The Internet is full of powerful hacking tools and bad guys using them extensively. If your organization has an Internet connection or one or two disgruntled employees (and whose does not!), your computer systems will get attacked. From the five, ten, or even one hundred daily probes against your Internet infrastructure to the malicious insider slowly creeping through your most vital information assets, attackers are targeting your systems with increasing viciousness and stealth. **As defenders, it is essential we understand these hacking tools and techniques.**

**"This course prepares you for anything and everything that comes your way as a security professional." -MATTHEW NAPPI, STONY BROOK UNIVERSITY**

This course enables you to turn the tables on computer attackers by helping you to understand their tactics and strategies in detail, giving you hands-on experience in finding vulnerabilities and discovering intrusions, and equipping you with a comprehensive incident handling plan. It addresses the latest cutting-edge insidious attack vectors, the "oldie-but-goodie" attacks that are still prevalent, and everything in between. Instead of merely teaching a few hack attack tricks, this course provides a time-tested, step-by-step process for responding to computer incidents, and a detailed description of how attackers undermine systems so you can prepare for, detect, and respond to attacks. In addition, the course explores the legal issues associated with responding to computer attacks, including employee monitoring, working with law enforcement, and handling evidence. Finally, students will participate in a **hands-on** workshop that focuses on scanning, exploiting, and defending systems. This will enable you to discover the holes in your system before the bad guys do!

The course is particularly well-suited to individuals who lead or are a part of an incident handling team. **General security practitioners, system administrators, and security architects will benefit by understanding how to design, build, and operate their systems to prevent, detect, and respond to attacks.**

SEC511:

## Continuous Monitoring and Security Operations

Six-Day Program

Mon, Mar 6 - Sat, Mar 11

9:00am - 7:00pm (Days 1-5)

9:00am - 5:00pm (Day 6)

Laptop Required

46 CPEs

Laptop Required

Instructor: Seth Misenar



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"This course had great lessons that will be actionable to what I do day to day, and it will help me fill in the gaps at my current work environment."

-KEVIN SOUTH,

NAVIENT CORPORATION



### Seth Misenar SANS Senior Instructor

Seth Misenar is the founder of Jackson, Mississippi-based Context Security, where he provides information security thought leadership, independent research, and security training. Seth's background includes network and web application penetration testing, vulnerability assessment, regulatory compliance, security architecture design, and general security consulting. He has previously served as both physical and network security consultant for Fortune 100 companies and the Health Insurance Portability and Accountability Act, and as information security officer for a state government agency. Prior to becoming a security geek, Seth received a bachelor's of science degree in philosophy from Millsaps College, where he was twice selected for a Ford Teaching Fellowship. Also, Seth is no stranger to certifications and thus far has achieved credentials that include CISSP, GPEN, GWAPT, GSEC, GCIA, GCIH, GCWN, GCFA, and MCSE. @sethmisenar

New Extended  
Bootcamp Hours to  
Enhance Your Skills

# SANS

We continue to underestimate the tenacity of our adversaries! Organizations are investing a significant amount of time and financial and human resources trying to prevent and combat cyber attacks, but despite this tremendous effort organizations are still getting compromised. The traditional perimeter-focused, prevention-dominant approach to security architecture has failed to prevent intrusions. No network is impenetrable, a reality that business executives and security professionals alike have to accept.

Prevention is crucial, and we can't lose sight of it as the primary goal. However, a new proactive approach to security is needed to enhance the capabilities of organizations to detect threats that will inevitably slip through their defenses.

The underlying challenge for organizations victimized by an attack is timely incident detection. Industry data suggest that most security breaches typically go undiscovered for an average of seven months. Attackers simply have to find one way into most organizations, because they know that the lack of visibility and internal security controls will then allow them to methodically carry out their mission and achieve their goals.

**"Seth is an amazing teacher. His knowledge and passion for InfoSec definitely shows."**

-ERIC LUELLEN, SAS

The Defensible Security Architecture, Network Security Monitoring (NSM)/Continuous Diagnostics and Mitigation (CDM)/Continuous Security Monitoring (CSM) taught in this course will best position your organization or Security Operations Center (SOC) to analyze threats and detect anomalies that could indicate cybercriminal behavior. The payoff for this new proactive approach is early detection of an intrusion, or successfully thwarting the efforts of attackers altogether. The National Institute of Standards and Technology (NIST) developed guidelines described in NIST SP 800-137 for Continuous Monitoring (CM), and this course will greatly increase your understanding and enhance your skills in implementing CM utilizing the NIST framework.

### Who Should Attend

- ▶ Security architects
- ▶ Senior security engineers
- ▶ Technical security managers
- ▶ Security Operations Center analysts, engineers, and managers
- ▶ Individuals working to implement Continuous Diagnostics and Mitigation (CDM), Continuous Security Monitoring (CSM), or Network Security Monitoring (NSM)
- ▶ Computer Network Defense analysts

SEC642:

# Advanced Web App Penetration Testing, Ethical Hacking, and Exploitation Techniques

NEW

Six-Day Program

Mon, Mar 6 - Sat, Mar 11

9:00am - 7:15pm (Day 1)

9:00am - 5:00pm (Days 2-6)

36 CPEs

Laptop Required

Instructor:

Adrien de Beaupre

"This course is outstanding! I would highly recommend it to pen testers who already have a good grasp on SEC542's content."

-MARK GEESLIN, CITRIX

"It's the perfect course for someone who has a background in web app pen test but wants to really gain advanced skills."

-MATTHEW SULLIVAN, WEBFILINGS



## Adrien de Beaupre SANS Certified Instructor

Adrien de Beaupre works as an independent consultant in beautiful Ottawa, Ontario. His work experience includes technical instruction, vulnerability assessment, penetration testing, intrusion detection, incident response and forensic analysis. He is a member of the SANS Internet Storm Center ([isc.sans.edu](http://isc.sans.edu)). He is actively involved with the information security community, and has been working with SANS since 2000. Adrien holds a variety of certifications including the GXPn, GPEN, GWAPT, GCIH, GCIA, GSEC, CISSP, OPST, and OPSA. When not geeking out he can be found with his family, or at the dojo. @adriendb

## Can Your Web Apps Withstand the Onslaught of Modern Advanced Attack Techniques?

Modern web applications are growing more sophisticated and complex as they utilize exciting new technologies and support ever-more critical operations. Long gone are the days of basic HTML requests and responses. Even in the age of Web 2.0 and AJAX, the complexity of HTTP and modern web applications is progressing at breathtaking speed. With the demands of highly available web clusters and cloud deployments, web applications are looking to deliver more functionality in smaller packets, with a decreased strain on backend infrastructure. Welcome to an era that includes tricked-out cryptography, WebSockets, HTTP/2, and a whole lot more. Are your web application assessment and penetration testing skills ready to evaluate these impressive new technologies and make them more secure?

## Are You Ready to Put Your Web Apps to the Test with Cutting-Edge Skills?

This pen testing course is designed to teach you the advanced skills and techniques required to test modern web applications and next-generation technologies. The course uses a combination of lecture, real-world experiences, and hands-on exercises to teach you the techniques to test the security of tried-and-true internal enterprise web technologies, as well as cutting-edge Internet-facing applications. The final course day culminates in a Capture-the-Flag competition where you will apply the knowledge you acquired during the previous five days in a fun environment based on real-world technologies.

## Hands-on Learning of Advanced Web App Exploitation Skills

We begin by exploring advanced techniques and attacks to which all modern-day complex applications may be vulnerable. We'll learn about new web frameworks and web backends, then explore encryption as it relates to web applications, digging deep into practical cryptography used by the web, including techniques to identify the type of encryption in use within the application and methods for exploiting or abusing it. We'll look at alternative front ends to web applications and web services such as mobile applications, and examine new protocols such as HTTP/2 and WebSockets. The final portion of class will focus on how to identify and bypass web application firewalls, filtering, and other protection techniques.

## Who Should Attend

- ▶ Web penetration testers
- ▶ Red team members
- ▶ Vulnerability assessment personnel
- ▶ Network penetration testers
- ▶ Security consultants
- ▶ Developers
- ▶ QA testers
- ▶ System administrators
- ▶ IT managers
- ▶ System architects



DEV522:

## Defending Web Applications Security Essentials

Six-Day Program

Mon, Mar 6 - Sat, Mar 11

9:00am - 7:00pm (Days 1-5)

9:00am - 5:00pm (Day 6)

Laptop Required

36 CPEs

Laptop Required

Instructor: Clay Risenhoover



[www.giac.org/gweb](http://www.giac.org/gweb)



[www.sans.edu](http://www.sans.edu)



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"This course goes over security issues that every web developer and appsec employee needs."

-ALLEN OTT, BOEING

"The course helped me realize the importance of securing web applications and applying secure coding rules for development efforts."

-LERMA WINCHELL,

VYSTAR CREDIT UNION



### Clay Risenhoover SANS Certified Instructor

Clay is the president of Risenhoover Consulting, Inc., an IT management consulting firm based in Durant, Oklahoma. Founded in 2003, RCI provides IT audit and IT management consulting services to clients in multiple sectors. Clay's experience includes positions in software development, technical training, LAN and WAN operations, and IT management in both the private and public sectors. He has a master's degree in computer science and holds a number of technical and security certifications, including the GPEN, GSNA, CISA, CISM, GWEB, and CISSP. @AuditClay

### This is the course to take if you have to defend web applications!

The quantity and importance of data entrusted to web applications is growing, and defenders need to learn how to secure them. Traditional network defenses, such as firewalls, fail to secure web applications. DEV522 covers the OWASP Top 10 Risks and will help you better understand web application vulnerabilities, thus enabling you to properly defend your organization's web assets.

Mitigation strategies from an infrastructure, architecture, and coding perspective will be discussed alongside real-world applications that have been proven to work. The testing aspect of vulnerabilities will also be covered so that you can ensure your application is tested for the vulnerabilities discussed in class.

To maximize the benefit for a wider range of audiences, the discussions in this course will be programming language agnostic. Focus will be maintained on security strategies rather than coding-level implementation.

DEV522: Defending Web Applications Security Essentials is intended for anyone tasked with implementing, managing, or protecting web applications. It is particularly well suited to application security analysts, developers, application architects, pen testers, auditors who are interested in recommending proper mitigations for web security issues, and infrastructure security professionals who have an interest in better defending their web applications.

The course will also cover additional issues the authors have found to be important in their day-to-day web application development practices. The topics that will be covered include:

- > Infrastructure security
- > Server configuration
- > Authentication mechanisms
- > Application language configuration
- > Application coding errors like SQL injection and cross-site scripting
- > Cross-site request forging
- > Authentication bypass
- > Web services and related flaws
- > Web 2.0 and its use of web services
- > XPATH and XQUERY languages and injection
- > Business logic flaws
- > Protective HTTP headers

The course will make heavy use of hands-on exercises and conclude with a large defensive exercise that reinforces the lessons learned throughout the week.

### Who Should Attend

- > Application developers
- > Application security analysts or managers
- > Application architects
- > Penetration testers who are interested in learning about defensive strategies
- > Security professionals who are interested in learning about web application security
- > Auditors who need to understand defensive mechanisms in web applications
- > Employees of PCI compliant organizations who need to be trained to comply with PCI requirements

# SANS@NIGHT EVENING TALKS

## Enrich your SANS training experience!

**Evening talks by our instructors and selected subject-matter experts help you broaden your knowledge, hear from the voices that matter in computer security, and get the most for your training dollar.**

KEYNOTE:

### Evolving Threats

*Paul Henry*

For nearly two decades, defenders have fallen into the “Crowd Mentality Trap.” They have simply settled on doing the same thing everyone else was doing, while at the same time attackers have clearly evolved both in terms of malware delivery vectors and attack methodology. Today our defenses focus primarily on the gateway and upon attempting to outwit attacker’s delivery methods. This leaves us woefully exposed and according to a recent Data Breach Report has resulted in 3,765 incidents, 806 million records exposed, and \$157 billion in data breach costs in only the past six years.

### Actionable Detects: Blue Team Cyber Defense Tactics

*Seth Misenar*

Organizations relying on third parties to detect breaches can go almost a full year before finding out they have been compromised. Detect the breach yourself, and on average you will find it within about a month of the initial occurrence. Considering detection and defense against modern adversaries too costly to perform yourself can be a very expensive miscalculation if you take into account the substantially increased price of response when a breach drags on. This constantly updated presentation provides you with thoughts, tactics, techniques, and procedures to once again take pride in your Blue Team cyber capabilities. Not applying these lessons learned could prove costly in the face of threat actors that are constantly adapting. Dig in and learn to hold your head high when talking about your defensive cyber operations capabilities.

### Python for OSINT Domination

*Matt Edmondson*

In just about every engagement, the first step is reconnaissance and information gathering. There can be an overwhelming amount of information out there and anything you can do to automate the process of acquiring and analyzing it will make your life a lot easier. This presentation will start with simple data mining techniques where APIs and basic scraping can be used. We then address possible challenges to an automated approach, such as sites that require user interaction to log in, click buttons, scroll down, etc. Working proof of concept code will be provided for all of the topics discussed.

### HTTPdeux

*Adrien de Beaupre*

The presentation will discuss the relatively new HTTP2 protocol that has recently been widely adopted as a standard. Most browsers and web servers can support it, but relatively little security research has been done on the new protocol. There are very few tools to perform security testing, and penetration testing is challenging. There will be a demo of a HTTP2 vulnerability being exploited.

# Employers need good talent. Veterans need good jobs. SANS VetSuccess Immersion Academy delivers both.

Introducing the SANS VetSuccess Immersion Academy, an intensive, accelerated program that provides the real-world training and certifications needed to fill critical jobs in cybersecurity.

**For employers**, the academy is a faster, more reliable, and less expensive way to find, train, certify, and employ highly qualified cybersecurity talent.

**For transitioning veterans**, the academy provides free accelerated training and certifications to quickly and effectively launch careers in cybersecurity.

Find out how your organization can benefit from hiring graduates or sponsoring an academy to meet your specific talent needs.

**Read the Pilot Program Results Report**  
**Visit [sans.org/vetsuccess](https://sans.org/vetsuccess)**



*Read the Pilot Program  
Results Report*  
**Visit [sans.org/vetsuccess](https://sans.org/vetsuccess)**

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## MORE INFORMATION

[www.sans.org/ondemand/bundles](http://www.sans.org/ondemand/bundles)

[www.giac.org](http://www.giac.org)



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- |                      |   |
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# SANS TRAINING FORMATS

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# FUTURE SANS TRAINING EVENTS

### Security East 2017

New Orleans, LA | Jan 9-14

### Las Vegas 2017

Las Vegas, NV | Jan 23-30

### Cyber Threat Intelligence

SUMMIT & TRAINING 2017

Arlington, VA | Jan 25 - Feb 1

SOUTHERN CALIFORNIA

### Anaheim 2017

Anaheim, CA | Feb 6-11

### Scottsdale 2017

Scottsdale, AZ | Feb 20-25

### Dallas 2017

Dallas, TX | Feb 27 - Mar 4

### Tysons Corner Spring 2017

McLean, VA | Mar 20-25

### ICS Security

SUMMIT & TRAINING 2017

Orlando, FL | Mar 20-27

### Pen Test Austin 2017

Austin, TX | Mar 27 - Apr 1

### SANS 2017

Orlando, FL | Apr 7-14

### Threat Hunting and IR

SUMMIT & TRAINING 2017

Orlando, FL | Apr 18-25

### Baltimore Spring 2017

Baltimore, MD | Apr 24-29

### Automotive Cybersecurity

SUMMIT & TRAINING 2017

Detroit, MI | May 1-8

### Security West 2017

San Diego, CA | May 9-18

Information on all events can be found at

[www.sans.org/security-training/by-location/all](http://www.sans.org/security-training/by-location/all)



**SANS SAN JOSE 2017**

# Hotel Information

*Training Campus*  
**Crowne Plaza San Jose Silicon Valley**  
 777 Bellew Drive  
 Milpitas, CA 95035  
 408-321-9500  
[www.sans.org/event/san-jose-2017/location](http://www.sans.org/event/san-jose-2017/location)

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- 1 All SANS attendees receive complimentary high-speed Internet when booking in the SANS block.
- 2 No need to factor in daily cab fees and the time associated with travel to alternate hotels.
- 3 By staying at Crowne Plaza San Jose Silicon Valley, you gain the opportunity to further network with your industry peers and remain in the center of the activity surrounding the training event.
- 4 SANS schedules morning and evening events at Crowne Plaza San Jose Silicon Valley that you won't want to miss!
- 5 Everything is in one convenient location!

**SANS SAN JOSE 2017**

## Registration Information

*We recommend you register early to ensure you get your first choice of courses.*



**Register online at [www.sans.org/san-jose](http://www.sans.org/san-jose)**

Select your course and indicate whether you plan to test for GIAC certification.

If the course is still open, the secure, online registration server will accept your registration. Sold-out courses will be removed from the online registration. Everyone with Internet access must complete the online registration form. We do not take registrations by phone.

### Pay Early and Save

	DATE	DISCOUNT	DATE	DISCOUNT
Pay & enter code before	1-11-17	\$400.00	2-1-17	\$200.00

Some restrictions apply.

Use code  
**EarlyBird17**  
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[www.sans.org/vouchers](http://www.sans.org/vouchers)

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**WhatWorks Webcasts** — The SANS WhatWorks webcasts bring powerful customer experiences showing how end users resolved specific IT Security issues.



**Tool Talks** — Tool Talks are designed to give you a solid understanding of a problem, and to show how a vendor's commercial tool can be used to solve or mitigate that problem.

## NEWSLETTERS



**NewsBites** — Twice-weekly high-level executive summary of the most important news relevant to cybersecurity professionals



**OUCH!** — The world's leading monthly free security-awareness newsletter designed for the common computer user



**@RISK: The Consensus Security Alert** — A reliable weekly summary of (1) newly discovered attack vectors, (2) vulnerabilities with active new exploits, (3) how recent attacks worked, and (4) other valuable data

## OTHER FREE RESOURCES

■ InfoSec Reading Room

■ Top 25 Software Errors

■ 20 Critical Controls

■ Security Policies

■ Intrusion Detection FAQs

■ Tip of the Day

■ Security Posters

■ Thought Leaders

■ 20 Coolest Careers

■ Security Glossary

■ SCORE (Security Consensus Operational Readiness Evaluation)

**[www.sans.org/account](http://www.sans.org/account)**