SANS

The Most Trusted Source for Information Security Training, Certification, and Research

NEW YORK CITY 2017

August 14-19

Protect Your Business and Advance Your Career

Six hands-on, immersion-style information security courses taught by real-world practitioners

CYBER DEFENSE
ETHICAL HACKING
PENETRATION TESTING
DIGITAL FORENSICS

GIAC CERTIFICATIONS

"In 20+ years of IT and IT training, this was by far the most informative and valuable training I've ever attended."
-Liam DeSanto, Summit Partners

SAVE $400

Register and pay by June 21st – Use code **EarlyBird17**

www.sans.org/new-york-city

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 New York City 2017 lineup of instructors includes:

Doc Blackburn
Instructor
@DocBlackburn

Adrien de Beaupre
Certified Instructor
@adriendb

Heather Mahalik
Senior Instructor
@HeatherMahalik

Jeff McJunkin
Instructor
@jeffmcjunkin

Bryan Simon
Certified Instructor
@BryanOnSecurity

Jake Williams
Certified Instructor
@MalwareJake

Evening Bonus Sessions

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

KEYNOTE: ***Emerging Threats in Cybersecurity***
Jake Williams

So, You Wanna Be a Pentester?
Adrien de Beaupre

One Tool Can't Solve All Your Problems, But You Can!
Heather Mahalik

Building Your Own Kickass Home Lab
Jeff McJunkin

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Courses at a Glance

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SEC560 Network Penetration Testing and Ethical Hacking	Page 5					
FOR500 Windows Forensic Analysis (FORMERLY FOR408)	Page 6					
FOR610 Reverse-Engineering Malware: Malware Analysis Tools and Techniques	Page 7 *NEW!*					

Securing **Approval** and **Budget** for Training

Packaging matters

Write a formal request

- All organizations are different, but because training requires a significant investment of both time and money, most successful training requests are made via a written document (short memo and/or a few Powerpoint slides) that justifies the need and benefit. Most managers will respect and value the effort.
- Provide all the necessary information in one place. In addition to your request, provide all the right context by including the summary pages on Why SANS?, the Training Roadmap, the instructor bio, and additional benefits available at our live events or online.

Clearly state the benefits

Be specific

- How does the course relate to the job you need to be doing? Are you establishing baseline skills? Transitioning to a more focused role? Decision-makers need to understand the plan and context for the decision.
- Highlight specifics of what you will be able to do afterwards. Each SANS course description includes a section titled "You Will Be Able To." Be sure to include this in your request so that you make the benefits clear. The clearer the match between the training and what you need to do at work, the better.

Set the context

Establish longer-term expectations

- Information security is a specialized career path within IT with practices that evolve as attacks change. Because of this, organizations should expect to spend 6%-10% of salaries to keep professionals current and improve their skills. Training for such a dynamic field is an annual, per-person expense—not a once-and-done item.
- Take a GIAC Certification exam to prove the training worked. Employers value the validation of skills and knowledge that a GIAC Certification provides. Exams are psychometrically designed to establish competency for related job tasks.
- Consider offering trade-offs for the investment. Many professionals build annual training expenses into their employment agreements even before joining a company. Some offer to stay for a year after they complete the training.

SEC301

Intro to Information Security

GISF Certification

Information Security Fundamentals

www.giac.org/gisf

Five-Day Program
Mon, Aug 14 - Fri, Aug 18
9:00am - 5:00pm
30 CPEs
Laptop Required
Instructor: Doc Blackburn

"Labs reinforced the security principles in a real-world scenario."
-Tyler Moore, Rockwell

"This course was the perfect blend of technical and practical information for someone new to the field, and I would recommend it!"
-Steve Mecco, Draper

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To determine if the SANS SEC301 course is right for you, ask yourself five simple questions:

- **Do you have basic computer knowledge, but are new to information security and in need of an introduction to the fundamentals?**
- **Are you bombarded with complex technical security terms that you don't understand?**
- **Are you a non-IT security manager (with some technical knowledge) who lays awake at night worrying that your company will be the next mega-breach headline story on the 6 o'clock news?**
- **Do you need to be conversant in basic security concepts, principles, and terms, even if you don't need "deep in the weeds" detail?**
- **Have you decided to make a career change to take advantage of the job opportunities in information security and need formal training/certification?**

If you answer yes to any of these questions, the **SEC301: Intro to Information Security** training course is for you. Jump-start your security knowledge by receiving insight and instruction from real-world security experts on critical introductory topics that are fundamental to information security. This completely revised five-day, comprehensive course covers everything from core terminology to the basics of computer networks, security policies, incident response, passwords, and even an introduction to cryptographic principles.

This course is designed for students who have a basic knowledge of computers and technology but no prior knowledge of cybersecurity. The hands-on, step-by-step teaching approach will enable you to grasp all of the information presented even if some of the topics are new to you. You'll learn the fundamentals of information security that will serve as the foundation of your InfoSec skills and knowledge for years to come.

Written by a security professional with over 30 years of experience in both the public and private sectors, SEC301 provides uncompromising real-world insight from start to finish. The course prepares you for the Global Information Security Fundamentals (GISF) certification test, as well as for the next course up the line, **SEC401: Security Essentials Bootcamp Style**. It also delivers on the ***SANS promise: You will be able to use the knowledge and skills you learn in SEC301 as soon as you return to work.***

Doc Blackburn *SANS Instructor*

Doc Blackburn has over 30 years of experience in system and software design, server and network administration and website programming. His interest in computers started in 1982 when he first started programming in DOS on a Texas Instruments TI-99 4a and continued as a dedicated computer hobbyist until he decided to make information technology a full-time career in 1998. Doc ran a successful IT consulting, hosting, and design firm for 12 years until he found his passion was in systems security and compliance. His well-rounded experience includes hardware, software, network design, project management, administration, programming, systems security, and compliance frameworks. He has vast experience at various levels of information technology from technical support to security leadership roles. He has been heavily involved in the technical design and implementation of NIH-approved FISMA compliant information systems. His current work has focused on HIPAA, FERPA, PCI DSS, and FISMA compliant systems with an emphasis on IT risk management in enterprise environments. Doc holds ITIL, CISSP, HCISPP (healthcare, HIPAA), PCI ISA (payment card industry) and GIAC GSEC, GISF, GPEN, GCPM, GCIA and GSLC certifications along with a bachelor's degree from the University of Arizona. He is currently the IT Compliance Administrator for the University of Colorado Denver | Anschutz Medical Campus. **@DocBlackburn**

SEC401

Security Essentials Bootcamp Style

GSEC Certification
Security Essentials

www.giac.org/gsec

Six-Day Program
Mon, Aug 14 - Sat, Aug 19
9:00am - 7:00pm (Days 1-5)
9:00am - 5:00pm (Day 6)
46 CPEs
Laptop Required
Instructor: Bryan Simon

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 specialists, penetration testers, and auditors who need a solid foundation of security principles to be as effective as possible at their jobs
- Anyone new to information security with some background in information systems and networking

"This training answers the 'why' of my work practices, and asks the 'why not' for the practices my company doesn't follow."
-Thomas Petro, Southern California Edison

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

STOP and ask yourself the following questions:

- **Do you fully understand why some organizations get compromised and others do not?**
- **If there were compromised systems on your network, are you confident you would be able to find them?**
- **Do you know the effectiveness of each security device and are you certain they are all configured correctly?**
- **Are proper security metrics set up and communicated to your executives to drive security decisions?**

If you do not know the answers to these questions, SEC401 will provide the information security training you need in a bootcamp-style format that is reinforced with hands-on labs.

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. Our course will show you how to prevent your organization's security problems from being headline news in the *Wall Street Journal*!

Prevention Is Ideal but Detection Is a Must

With the rise in 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 will 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.

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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**

SEC504

GCIH Certification
Incident Handler

www.giac.org/gcih

Hacker Tools, Techniques, Exploits, and Incident Handling

Six-Day Program
Mon, Aug 14 - Sat, Aug 19
9:00am - 7:15pm (Day 1)
9:00am - 5:00pm (Days 2-6)
37 CPEs
Laptop Required
(If your laptop supports only wireless, please bring a USB Ethernet adapter.)
Instructor: Adrien de Beaupre

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

"Adrien is great! Very good presenter, engaging speaker, and knowledgeable!"
-Robert Hall, Honeywell

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.**

"SEC504 is a good foundation for security incidents. It's a must-have for security incident handlers/managers." -Wu Peihui, Citibank

This course enables you to turn the tables on computer attackers by helping you 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 those 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 course 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.

"SEC504 helped me put many pieces of the puzzle together."
-Ian Trimble, Blue Cross Blue Shield

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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). 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

SEC560

Network Penetration Testing and Ethical Hacking

GPEN Certification
Penetration Tester

www.giac.org/gpen

Six-Day Program
Mon, Aug 14 - Sat, Aug 19
9:00am - 7:15pm (Day 1)
9:00am - 5:00pm (Days 2-6)
37 CPEs
Laptop Required
Instructor: Jeff McJunkin

Who Should Attend

- Security personnel whose jobs involve assessing networks and systems to find and remediate vulnerabilities
- Penetration testers
- Ethical hackers
- Defenders who want to better understand offensive methodologies, tools, and techniques
- Auditors who need to build deeper technical skills
- Red and blue team members
- Forensics specialists who want to better understand offensive tactics

"As someone new to offense, this course was an amazing intro to the tactics and capabilities of an attacker."

-John Hubbard, GlaxoSmithKline

As a cybersecurity professional, you have a unique responsibility to find and understand your organization's vulnerabilities, and to work diligently to mitigate them before the bad guys pounce. Are you ready? SANS SEC560, our flagship course for penetration testing, fully arms you to address this task head-on.

SEC560 is the must-have course for every well-rounded security professional.

With comprehensive coverage of tools, techniques, and methodologies for network penetration testing, SEC560 truly prepares you to conduct high-value penetration testing projects step-by-step and end-to-end. Every organization needs skilled information security personnel who can find vulnerabilities and mitigate their effects, and this entire course is specially designed to get you ready for that role. The course starts with proper planning, scoping and recon, then dives deep into scanning, target exploitation, password attacks, and web app manipulation, with more than 30 detailed hands-on labs throughout. The course is chock-full of practical, real-world tips from some of the world's best penetration testers to help you do your job safely, efficiently...and masterfully.

Learn the best ways to test your own systems before the bad guys attack.

SEC560 is designed to get you ready to conduct a full-scale, high-value penetration test – and on the last day of the course you'll do just that. After building your skills in comprehensive and challenging labs over five days, the course culminates with a final full-day, real-world penetration test scenario. You'll conduct an end-to-end pen test, applying knowledge, tools, and principles from throughout the course as you discover and exploit vulnerabilities in a realistic sample target organization, demonstrating the knowledge you've mastered in this course.

You will bring comprehensive penetration testing and ethical hacking know-how back to your organization.

You will learn how to perform detailed reconnaissance, studying a target's infrastructure by mining blogs, search engines, social networking sites, and other Internet and intranet infrastructures. Our hands-on labs will equip you to scan target networks using best-of-breed tools. We won't just cover run-of-the-mill options and configurations, we'll also go over the lesser known but super-useful capabilities of the best pen test toolsets available today. After scanning, you'll learn dozens of methods for exploiting target systems to gain access and measure real business risk. You'll dive deep into post-exploitation, password attacks, and web apps, pivoting through the target environment to model the attacks of real-world bad guys to emphasize the importance of defense in depth.

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Jeff McJunkin *SANS Instructor*

Jeff McJunkin is a senior staff member at Counter Hack Challenges with more than nine years of experience in systems and network administration and network security. His greatest strength is his breadth of experience – from network and web application penetration testing to digital/mobile forensics, and from technical training to systems architecture. Jeff is a computer security/information assurance graduate of Southern Oregon University and holds many professional certifications. He has also competed in many security competitions, including taking first place at a regional NetWars competition and a U.S. Cyber Challenge capture-the-flag competition, as well as joining the Red Team for the Pacific Rim Collegiate Cyber Defense Competition. His personal blog can be found at http://jeffmcjunkin.com/. **@jeffmcjunkin**

FOR500 (Formerly FOR408)

Windows Forensic Analysis

GCFE Certification
Forensic Examiner

www.giac.org/gcfe

Six-Day Program
Mon, Aug 14 - Sat, Aug 19
9:00am - 5:00pm
36 CPEs
Laptop Required
Instructor: Heather Mahalik

Who Should Attend

- Information security professionals
- Incident response team members
- Law enforcement officers, federal agents, and detectives
- Media exploitation analysts
- Anyone interested in a deep understanding of Windows forensics

"The course content was excellent and well presented. From start to finish, there were many different pieces of information that went into solving the main timeline of events. I will absolutely be able to apply these practices and techniques at work."
-Chris Then, Morris County NJ Prosecutor's Office

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Bundle OnDemand
WITH THIS COURSE
www.sans.org/ondemand

All organizations must prepare for cyber crime occurring on their computer systems and within their networks. Demand has never been greater for analysts who can investigate crimes like fraud, insider threats, industrial espionage, employee misuse, and computer intrusions. Government agencies increasingly require trained media exploitation specialists to recover key intelligence from Windows systems. To help solve these cases, SANS is training a new cadre of the world's best digital forensic professionals, incident responders, and media exploitation masters capable of piecing together what happened on computer systems second by second.

FOR500: Windows Forensic Analysis (Formerly FOR408) focuses on building in-depth digital forensics knowledge of the Microsoft Windows operating systems. You can't protect what you don't understand, and understanding forensic capabilities and artifacts is a core component of information security. You'll learn to recover, analyze, and authenticate forensic data on Windows systems. You'll understand how to track detailed user activity on your network and how to organize findings for use in incident response, internal investigations, and civil/criminal litigation. You'll be able to use your new skills to validate security tools, enhance vulnerability assessments, identify insider threats, track hackers, and improve security policies. Whether you know it or not, Windows is silently recording an unimaginable amount of data about you and your users. FOR500 teaches you how to mine this mountain of data.

Proper analysis requires real data for students to examine. The completely updated FOR500 course trains digital forensic analysts through a series of new hands-on laboratory exercises that incorporate evidence found on the latest Microsoft technologies (Windows 7/8/10, Office and Office365, cloud storage, Sharepoint, Exchange, Outlook). Students leave the course armed with the latest tools and techniques and prepared to investigate even the most complicated systems they might encounter. Nothing is left out – attendees learn to analyze everything from legacy Windows XP systems to just-discovered Windows 10 artifacts.

FOR500 is continually updated. This course utilizes a brand-new intellectual property theft and corporate espionage case that took over six months to create. You work in the real world and your training should include real practice data. Our development team used incidents from their own experiences and investigations and created an incredibly rich and detailed scenario designed to immerse students in a true investigation. The case demonstrates the latest artifacts and technologies an investigator might encounter while analyzing Windows systems. The incredibly detailed step-by-step workbook details the tools and techniques that each investigator should follow to solve a forensic case.

MASTER WINDOWS FORENSICS –
YOU CAN'T PROTECT WHAT YOU DON'T KNOW ABOUT

Heather Mahalik *SANS Senior Instructor*

Heather Mahalik is a project manager for Ocean's Edge, where she uses her experience to manage projects focused on wireless cybersecurity and mobile application development. Heather has over 12 years of experience in digital forensics, vulnerability discovery of mobile devices, application reverse engineering and manual decoding. She is currently the course lead for FOR585: Advanced Smartphone Forensics. Previously, Heather headed the mobile device team for Basis Technology, where she led the mobile device exploitation efforts in support of the U.S. government. She also worked as a forensic examiner at Stroz Friedberg and the U.S. State Department Computer Investigations and Forensics Lab, where she focused on high-profile cases. Heather co-authored *Practical Mobile Forensics* and various white papers, and has presented at leading conferences and instructed classes focused on Mac forensics, mobile device forensics, and computer forensics to practitioners in the field. Heather blogs and hosts work from the digital forensics community at www.smarterforensics.com. **@HeatherMahalik**

FOR610

GREM Certification
Reverse Engineering Malware

www.giac.org/grem

Reverse-Engineering Malware: Malware Analysis Tools and Techniques *NEW!*

Six-Day Program
Mon, Aug 14 - Sat, Aug 19
9:00am - 5:00pm
36 CPEs
Laptop Required
Instructor: Jake Williams

Who Should Attend

- Individuals who have dealt with incidents involving malware and want to learn how to understand key aspects of malicious programs
- Technologists who have informally experimented with aspects of malware analysis prior to the course and are looking to formalize and expand their expertise in this area
- Forensic investigators and IT practitioners looking to expand their skillsets and learn how to play a pivotal role in the incident response process

"This material is something you can use to build or enhance your company's playbook in terms of incident response and detection."
-Chris Bailey, California Lottery

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Learn to turn malware inside out! This popular course explores malware analysis tools and techniques in depth. FOR610 training has helped forensic investigators, incident responders, security engineers, and IT administrators acquire the practical skills to examine malicious programs that target and infect Windows systems.

Understanding the capabilities of malware is critical to an organization's ability to derive threat intelligence, respond to information security incidents, and fortify defenses. This course builds a strong foundation for reverse-engineering malicious software using a variety of system and network monitoring utilities, a disassembler, a debugger, and many other freely available tools.

The course begins by establishing the foundation for analyzing malware in a way that dramatically expands upon the findings of automated analysis tools. You will learn how to set up a flexible laboratory to examine the inner workings of malicious software, and how to use the lab to uncover characteristics of real-world malware samples. You will also learn how to redirect and intercept network traffic in the lab to explore the specimen's capabilities by interacting with the malicious program.

Malware is often obfuscated to hinder analysis efforts, so the course will equip you with the skills to unpack executable files. You will learn how to dump such programs from memory with the help of a debugger and additional specialized tools, and how to rebuild the files' structure to bypass the packer's protection. You will also learn how to examine malware that exhibits rootkit functionality to conceal its presence on the system, employing code analysis and memory forensics approaches to examining these characteristics.

FOR610 malware analysis training also teaches how to handle malicious software that attempts to safeguard itself from analysis. You will learn how to recognize and bypass common self-defensive measures, including code injection, sandbox evasion, flow misdirection, and other measures.

Hands-on workshop exercises are a critical aspect of this course. They enable you to apply malware analysis techniques by examining malicious software in a controlled and systemic manner. When performing the exercises, you will study the supplied specimens' behavioral patterns and examine key portions of their code. To support these activities, you will receive pre-built Windows and Linux virtual machines that include tools for examining and interacting with malware.

Jake Williams *SANS Certified Instructor*

Jake Williams is a Principal Consultant at Rendition Infosec. He has more than a decade of experience in secure network design, penetration testing, incident response, forensics, and malware reverse engineering. Before founding Rendition Infosec, Jake worked with various cleared government agencies in information security roles. He is well versed in cloud forensics and previously developed a cloud forensics course for a U.S. government client. Jake regularly responds to cyber intrusions by state-sponsored actors in the financial, defense, aerospace, and healthcare sectors using cutting-edge forensics and incident response techniques. He often develops custom tools to deal with specific incidents and malware-reversing challenges. Additionally, Jake performs exploit development and has privately disclosed a multitude of zero day exploits to vendors and clients. He found vulnerabilities in one of the state counterparts to healthcare.gov and recently exploited antivirus software to perform privilege escalation. Jake developed Dropsmack, a pentesting tool (okay, malware) that performs command and control and data exfiltration over cloud file sharing services. Jake also developed an anti-forensics tool for memory forensics, Attention Deficit Disorder (ADD). This tool demonstrated weaknesses in memory forensics techniques. **@MalwareJake**

Bonus Sessions

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.

Emerging Threats in Cybersecurity

Jake Williams

In this session Jake will walk you through a number of cybersecurity issues from the last few months as well as a few that are hot off the presses and help you dissect how these will impact your business. We'll discuss how recent court decisions on data locality impact systems architecture. We'll also address server security in the cloud and how to prepare to investigate issues in the cloud. The instances of leaked government hacking tools will also be addressed – how did the compromise of Hacking Team and the Shadow Brokers dumps impact your security? We'll also address vendor backdoors, security snake oil, and how recently disclosed vulnerabilities will change your security posture.

So, You Wanna Be a Pentester?

Adrien de Beaupre

This presentation will discuss the things that you will actually need to become a penetration tester. Be prepared for a no-fluff honest discussion. Do you really want to be a penetration tester? Here's a few questions we get all the time:

- What is penetration testing?
- What are the top 10 coolest and most important hacking tools for penetration testers?
- How do I become the world's greatest hacker? Answer: Make up lots of lies, plagiarize, and write a book!
- How do I become the "bestest" cyber hacker?
- Can you hack my buddies' hotmail for me?
- Do I need a cool hacker handle?
- Do I really need to learn all that stuff to be a cool hacker?
- Do I really have to work hard for many years to be a pentester?
- I have a $CERT or degree so that makes me an expert!

The answer to these questions is simple: To become a great penetration tester you will need the right attitude, aptitude, initiative, desire, dedication, discipline, integrity, ethics, experience, knowledge, and tools.

One Tool Can't Solve All Your Problems, But You Can!

Heather Mahalik

There are many tools that do a great job supporting mobile device forensics, but it's impossible for one tool to do everything for you and your examination. As forensic examiners, we are forced to leverage many tools to answer investigative questions and uncover the correct data. It is our job to learn where our tools excel and where they lag. In addition, we have to sometimes "teach" our tools to parse data they are not designed to support. It's time to learn how the data are stored on common smartphones and how the tools present the data. Whether the data are correct or not falls on you. Are you ready to defend your smartphone findings? Let us teach you the best methods by giving you a glimpse of the FOR585 Advanced Smartphone Forensics course.

Building Your Own Kickass Home Lab

Jeff McJunkin

Building your own home lab is a great way to keep up with the ever-changing IT world. Well, how does one actually go about building a home lab? That's the part that gets more complicated. Do you really need a whole rack full of off-lease servers and some enterprise-grade switches? No! New-ish high-end servers and workstations are surprisingly powerful, capable of mocking up a pretty complicated network, including attacker systems and even incorporating wireless communications. In this talk, Jeff will walk through both the hardware and software stacks he uses and recommends, including a number of ways to incorporate Microsoft software without paying exorbitant licensing fees. Jeff will also outline a basic lab design that can be used for a number of scenarios.

Enhance Your Training Experience

Add an
OnDemand Bundle & GIAC Certification Attempt* to your course within seven days of this event for just $689 each.

SPECIAL PRICING

Extend Your Training Experience with an OnDemand Bundle

- Four months of supplemental online review
- 24/7 online access to your course lectures, materials, quizzes, and labs
- Subject-matter-expert support to help you increase your retention of course material

"The course content and OnDemand delivery method have both exceeded my expectations."
-Robert Jones, Team Jones, Inc.

Get Certified with GIAC Certifications

- Distinguish yourself as an information security leader
- 30+ GIAC cybersecurity certifications available
- Two practice exams included
- Four months of access to complete the attempt

"GIAC is the only certification that proves you have hands-on technical skills."
-Christina Ford, Department of Commerce

MORE INFORMATION

www.sans.org/ondemand/bundles www.giac.org

*GIAC and OnDemand Bundles are only available for certain courses.

SANS SECURITY AWARENESS

Security Awareness Training by the Most Trusted Source

Protect Your Employees

Keep your organization safe with flexible computer-based training.

End User
CIP
ICS Engineers
Developers
Healthcare

- Train employees on their own schedule
- Modify modules to address specific audiences
- Increase comprehension – courses translated into many languages
- Test learner comprehension through module quizzes
- Track training completion for compliance reporting purposes

Learn more about SANS Security Awareness at:
securingthehuman.sans.org

Change Human Behavior | Manage Risk | Maintain Compliance | Protect Your Brand

SANS Technology Institute

The best. Made better.

The SANS Technology Institute transforms the world's best cybersecurity training and certifications into a comprehensive, rigorous, graduate education experience.

"Joining the SANS Master's Program was probably one of the best decisions I've ever made."

– John Hally, MSISE,
EBSCO Information Services

MASTER OF SCIENCE DEGREES

- Information Security Engineering: MSISE
- Information Security Management: MSISM

GRADUATE CERTIFICATE PROGRAMS

- Cybersecurity Engineering (Core)
- Cyber Defense Operations
- Penetration Testing and Ethical Hacking
- Incident Response

GIAC CERTIFICATIONS

Students earn industry-recognized GIAC certifications during most technical courses.

Tuition Reimbursement

GI Bill.

Regional accreditation enables students to use most corporate tuition reimbursement plans.

The SANS Technology Institute is also approved to accept and/or certify Veterans for education benefits.

WWW.SANS.EDU | INFO@SANS.EDU

The SANS Technology Institute is accredited by The Middle States Commission on Higher Education (3624 Market Street, Philadelphia, PA 19104 – 267-284-5000), an institutional accrediting agency recognized by the U.S. Secretary of Education and the Council for Higher Education Accreditation.

GI Bill® is a registered trademark of the U.S. Department of Veterans Affairs (VA). More information about education benefits offered by VA is available at the official U.S. government Web site at www.benefits.va.gov/gibill.

SANS Training Formats

Whether you choose to attend a training class live or online, the entire SANS team is dedicated to ensuring your training experience exceeds expectations.

Live Classroom Instruction

Premier Training Events

Our most recommended format, live SANS training events feature SANS' top instructors teaching multiple courses at a single time and location. This allows for:

- Focused, immersive learning without the distractions of your office environment
- Direct access to SANS Certified Instructors
- Interacting with and learning from other professionals
- Attending SANS@Night events, NetWars tournaments, vendor presentations, industry receptions, and many other activities

Our premier live training events in North America, serving thousands of students, are held in Orlando, Washington DC, Las Vegas, New Orleans, and San Diego. Regional events with hundreds of students are held in most major metropolitan areas during the year. See page 12 for upcoming training events in North America.

Summits

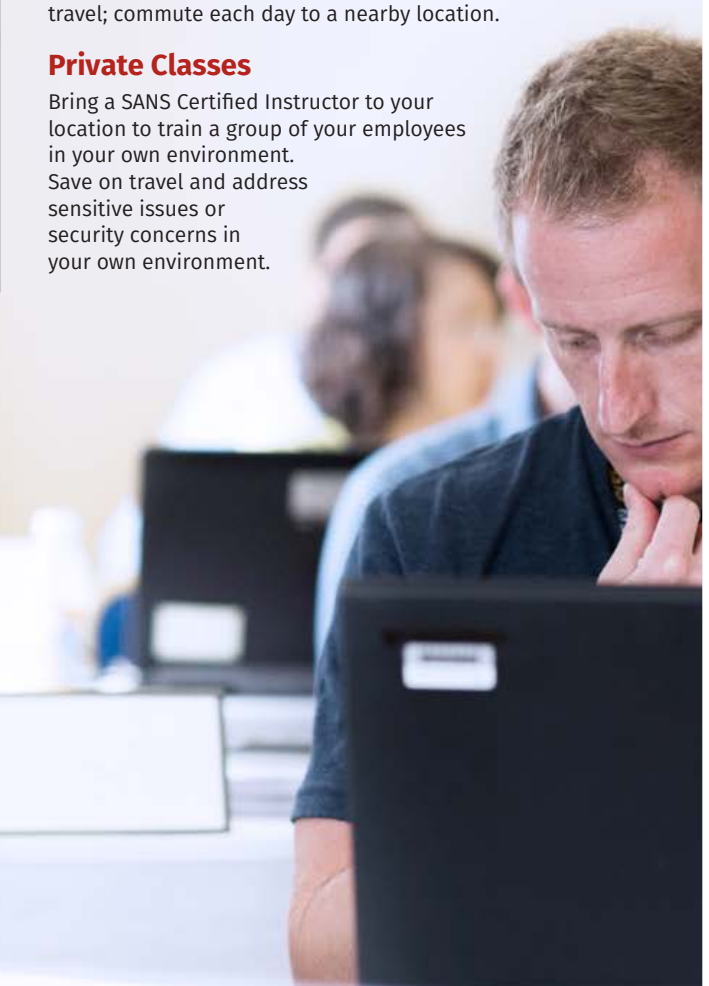
SANS Summits focus one or two days on a single topic of particular interest to the community. Speakers and talks are curated to ensure the greatest applicability to participants.

Community SANS Courses

Same SANS courses, courseware, and labs, taught by up-and-coming instructors in a regional area. Smaller classes allow for more extensive instructor interaction. No need to travel; commute each day to a nearby location.

Private Classes

Bring a SANS Certified Instructor to your location to train a group of your employees in your own environment. Save on travel and address sensitive issues or security concerns in your own environment.



Online Training

SANS Online successfully delivers the same measured learning outcomes to students at a distance that we deliver live in classrooms. More than 30 courses are available for you to take whenever or wherever you want. Thousands of students take our courses online and achieve certifications each year.

Top reasons to take SANS courses online:

- Learn at your own pace, over four months
- Spend extra time on complex topics
- Repeat labs to ensure proficiency with skills
- Save on travel costs
- Study at home or in your office

Our SANS OnDemand, vLive, Simulcast, and SelfStudy formats are backed by nearly 100 professionals who ensure we deliver the same quality instruction online (including support) as we do at live training events.

> "I am thoroughly pleased with the OnDemand modality. From a learning standpoint, I lose nothing. In fact, the advantage of setting my own pace with respect to balancing work, family, and training is significant, not to mention the ability to review anything that I might have missed the first time."
>
> -Kevin E., U.S. Army

> "The decision to take five days away from the office is never easy, but so rarely have I come to the end of a course and had no regret whatsoever. This was one of the most useful weeks of my professional life."
>
> -Dan Trueman, Novae PLC

Future Training Events

Houston	Houston, TX	June 5-10
San Francisco Summer	San Francisco, CA	June 5-10
Rocky Mountain	Denver, CO	June 12-17
Charlotte	Charlotte, NC	June 12-17
Minneapolis	Minneapolis, MN	June 19-24
Columbia	Columbia, MD	June 26 - July 1
Los Angeles – Long Beach	Long Beach, CA	July 10-15

SANSFIRE Washington, DC July 22-29

San Antonio	San Antonio, TX	Aug 6-11
Boston	Boston, MA	Aug 7-12
New York City	New York, NY	Aug 14-19
Salt Lake City	Salt Lake City, UT	Aug 14-19
Chicago	Chicago, IL	Aug 21-26
Virginia Beach	Virginia Beach, VA	Aug 21 - Sep 1
Tampa – Clearwater	Clearwater, FL	Sep 5-10
San Francisco Fall	San Francisco, CA	Sep 5-10

Network Security Las Vegas, NV Sep 10-17

Baltimore	Baltimore, MD	Sep 25-30
Rocky Mountain Fall	Denver, CO	Sep 25-30
Phoenix-Mesa	Mesa, AZ	Oct 9-14
Tysons Corner Fall	McLean, VA	Oct 16-21
San Diego Fall	San Diego, CA	Oct 30 - Nov 4
Seattle	Seattle, WA	Oct 30 - Nov 4
Miami	Miami, FL	Nov 6-11

Future Summit Events

Security Operations Center	Washington, DC	June 5-12
Digital Forensics	Austin, TX	June 22-29
ICS & Energy	Houston, TX	July 10-15
Security Awareness	Nashville, TN	July 31 - Aug 9
Data Breach	Chicago, IL	Sep 25 - Oct 2
Secure DevOps	Denver, CO	Oct 10-17
SIEM & Tactical Analytics	Scottsdale, AZ	Nov 28 - Dec 5

Future Community SANS Events

Local, single-course events are also offered throughout the year via SANS Community. Visit **www.sans.org/community** for up-to-date Community course information.

Hotel Information

Millennium Broadway Hotel NYC
145 West 44th Street
New York, NY 10036
Phone: 212-768-4400
www.sans.org/event/new-york-city-2017/location

New York is the city that never sleeps. In the center of it all, Millennium Broadway Hotel NYC is located in the heart of Times Square giving guests a front row seat to all of the endless action and constant excitement. We boast a welcoming, multi-lingual cast and crew, 626 thoughtfully appointed rooms, and a 24/7 fitness center. In addition, our meeting and event facilities are second to none. Featuring 64,000 sq ft (5,945 sq m) of flexible meeting space, we are the only hotel in the city accredited by the International Association of Conference Centers. Discover our world and experience an iconic visit to NYC.

Special Hotel Rates Available

A special discounted rate of $204.00 S/D will be honored based on space availability.

At this time, the group rate is lower than the government per diem rate. If this changes, the new government per diem rate will be offered with proper ID. These rates include high-speed Internet in your room and are only available through **July 24, 2017**.

Top 5 reasons to stay at the Millennium Broadway Hotel NYC

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 the Millennium Broadway Hotel NYC, 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 the Millennium Broadway Hotel NYC that you won't want to miss!
5. Everything is in one convenient location!

Registration Information

Register online at **www.sans.org/new-york-city**

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

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*

Use code **EarlyBird17** when registering early

	DATE	DISCOUNT	DATE	DISCOUNT
Pay & enter code by	**6-21-17**	**$400.00**	**7-12-17**	**$200.00**

*Some restrictions apply. Early bird discounts do not apply to Hosted courses.

SANS Voucher Program

Expand your training budget!

Extend your fiscal year. The SANS Voucher Program provides flexibility and may earn you bonus funds for training.

www.sans.org/vouchers

Cancellation & Access Policy

If an attendee must cancel, a substitute may attend instead. Substitution requests can be made at any time prior to the event start date. Processing fees will apply. All substitution requests must be submitted by email to **registration@sans.org**. If an attendee must cancel and no substitute is available, a refund can be issued for any received payments by **July 26, 2017**. A credit memo can be requested up to the event start date. All cancellation requests must be submitted in writing by mail or fax and received by the stated deadlines. Payments will be refunded by the method that they were submitted. Processing fees will apply.

Open a **SANS Account** today to enjoy these FREE resources:

WEBCASTS

Ask The Expert Webcasts – SANS experts bring current and timely information on relevant topics in IT Security.

Analyst Webcasts – A follow-on to the SANS Analyst Program, Analyst Webcasts provide key information from our whitepapers and surveys.

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