FOR500 (Formerly FOR408)

Windows Forensic Analysis

GCFE Certification
Forensic Examiner

www.giac.org/gcfe

Six-Day Program
36 CPEs
Laptop Required

Who Should Attend

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

You Will Be Able To

- Perform proper Windows forensic analysis by applying key techniques focusing on Windows 7/8/10
- Use full-scale forensic tools and analysis methods to detail nearly every action a suspect accomplished on a Windows system, including who placed an artifact on the system and how, program execution, file/folder opening, geo-location, browser history, profile USB device usage, and more
- Uncover the exact time that a specific user last executed a program through Registry and Windows artifact analysis, and understand how this information can be used to prove intent in cases such as intellectual property theft, hacker-breached systems, and traditional crimes
- Determine the number of times files have been opened by a suspect through browser forensics, shortcut file analysis (LNK), e-mail analysis, and Windows Registry parsing
- Identify keywords searched by a specific user on a Windows system in order to pinpoint the files and information the suspect was interested in finding and accomplish detailed damage assessments
- Use Windows shellbags analysis tools to articulate every folder and directory that a user opened up while browsing local, removable, and network drives
- Determine each time a unique and specific USB device was attached to the Windows system, the files and folders that were accessed on it, and who plugged it in by parsing key Windows artifacts such as the Registry and log files
- Use event log analysis techniques to determine when and how users logged into a Windows system, whether via a remote session, at the keyboard, or simply by unlocking a screensaver
- Determine where a crime was committed using registry data to pinpoint the geo-location of a system by examining connected networks and wireless access points
- Use free browser forensic tools to perform detailed Web browser analysis, parse raw SQLite and ESE databases, and leverage session recovery artifacts and flash cookies to identify the Web activity of suspects, even if privacy cleaners and in-private browsing are used

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

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 such as fraud, insider threats, industrial espionage, employee misuse, and computer intrusions. Government agencies increasingly require trained media exploitation specialists to recover vital 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 experts capable of piecing together what happened on computer systems second by second.

FOR500: Windows Forensic Analysis focuses on building in-depth digital forensics knowledge of Microsoft Windows operating systems. You can't protect what you don't know about, and understanding forensic capabilities and artifacts is a core component of information security. You'll learn how to recover, analyze, and authenticate forensic data on Windows systems, track particular user activity on your network, and 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 unbelievable 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, Windows 8/8.1, Windows 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 7 systems to just-discovered Windows 10 artifacts.

FOR500: Windows Forensic Analysis will teach you to:

- **Conduct in-depth forensic analysis of Windows operating systems and media exploitation focusing on Windows 7, Windows 8/8.1, Windows 10, and Windows Server 2008/2012/2016**
- **Identify artifact and evidence locations to answer critical questions, including application execution, file access, data theft, external device usage, cloud services, geo-location, file download, anti-forensics, and detailed system usage**
- **Focus your capabilities on analysis instead of on how to use a particular tool**
- **Extract critical answers and build an in-house forensic capability via a variety of free, open-source, and commercial tools provided within the SANS Windows SIFT Workstation**

SANS
www.sans.org/FOR500

SANS Technology Institute
www.sans.edu

BUNDLE ONDEMAND
WITH THIS COURSE
www.sans.org/ondemand

500.1 HANDS ON: Windows Digital Forensics and Advanced Data Triage

The Windows forensics course starts with an examination of digital forensics in today's interconnected environments and discusses challenges associated with mobile devices, tablets, cloud storage, and modern Windows operating systems. We will discuss how modern hard drives, such as Solid State Devices (SSD), can affect the digital forensics acquisition process and how analysts need to adapt to overcome the introduction of these new technologies.

Topics: Windows Operating System Components; Core Forensic Principles; Live Response and Triage-Based Acquisition Techniques; Acquisition Review with Write Blocker; Advanced Acquisition Challenges; Windows Image Mounting and Examination; NTFS File System Overview; Document and File Metadata; File Carving; Custom Carving Signatures; Memory, Pagefile, and Unallocated Space Analysis

500.2 HANDS ON: CORE WINDOWS FORENSICS PART 1 – Windows Registry Forensics and Analysis

Our journey continues with the Windows Registry, where the digital forensic investigator will learn how to discover critical user and system information pertinent to almost any investigation. Each examiner will learn how to navigate and examine the Registry to obtain user-profile data and system data. The course teaches forensic investigators how to prove that a specific user performed key word searches, ran specific programs, opened and saved files, perused folders, and used removable devices.

Topics: Registry Basics; Profile Users and Groups; Core System Information; User Forensic Data; Tools Utilized

500.3 HANDS ON: CORE WINDOWS FORENSICS PART 2 – USB Devices, Shell Items, and Key Word Searching

Being able to show the first and last time a file was opened is a critical analysis skill. Utilizing shortcut (LNK) and jumplist databases, we are able to easily pinpoint which file was opened and when. We will demonstrate how to examine the pagefile, system memory, and unallocated space – all difficult-to-access locations that can offer the critical data for your case.

Topics: Shell Item Forensics; USB and Bring Your Own Device (BYOD) Forensic Examinations; Key Word Searching and Forensics Suites (AccessData's FTK, Guidance Software's EnCase)

500.4 HANDS ON: CORE WINDOWS FORENSICS PART 3 – Email, Key Additional Artifacts, and Event Logs

This section discusses what types of information can be relevant to an investigation, where to find email files, and how to use forensic tools to facilitate the analysis process. We will find that the analysis process is similar across different types of email stores, but the real work takes place in the preparation – finding and extracting the email files from a variety of different sources. The last part of the section will arm each investigator with the core knowledge and capability to maintain this crucial skill for many years to come.

Topics: Email Forensics; Forensicating Additional Windows OS Artifacts; Windows Event Log Analysis

500.5 HANDS ON: CORE WINDOWS FORENSICS PART 4 – Web Browser Forensics: Firefox, Internet Explorer, and Chrome

Throughout the section, investigators will use their skills in real hands-on cases, exploring evidence created by Chrome, Firefox, and Internet Explorer along with Windows Operating System artifacts.

Topics: Browser Forensics: History, Cache, Searches, Downloads, Understanding of Browser Timestamps, Internet Explorer; Firefox; Chrome; Examination of Browser Artifacts; Tools Used

500.6 HANDS ON: Windows Forensic Challenge

This complex case will involve an investigation into one of the most recent versions of the Windows Operating System. The evidence is real and provides the most realistic training opportunity currently available. Solving the case will require that students use all of the skills gained from each of the previous sections.

Topics: Digital Forensic Case; Windows 7 Forensic Challenge

SANS

FOR500 Training Formats

(subject to change)

Live Training
www.sans.org/security-training/by-location/all

Summit Events
www.sans.org/summit

Mentor Training
www.sans.org/mentor

Private Training
www.sans.org/onsite

vLive
www.sans.org/vlive

Simulcast
www.sans.org/simulcast

OnDemand
www.sans.org/ondemand

SelfStudy
www.sans.org/selfstudy