



**XIONGROUP**

**Authorised Training Partner**

34 Circular Road  
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**opentext™**

# IR250 - Incident Investigation OnDemand

## Syllabus

### Day 1

Day one starts with a discussion focused on incident response considerations, including examination options. Having introduced the course scenario, instruction moves on to the use of OpenText™ EnCase™ Endpoint Investigator (EnCase) to acquire critical disk and volatile operating system data.

This is followed by an in-depth look at capturing physical memory (RAM) and network data. Students will participate in a practical assignment, allowing them to exercise and apply their newfound knowledge and skill.

#### The main areas covered on day 1 include:

- Understanding incident response considerations, including education, planning, policy implementation, training and equipment.
- Learning the benefits of capturing disk, network and RAM data.
- Learning the importance of capturing non-digital evidence.
- Understanding the consequences of pursuing different examination methodologies when weighed against the need to acquire evidential data.
- Learning how to use EnCase to preview and acquire data pertinent to your investigation and take a snapshot of volatile data.
- Learning how to acquire an image from RAM.
- Examining the concept of network sniffing, capturing network packet data and factors that can affect the process.
- Understanding the Microsoft® Windows® operating system registry.
- Learning to locate and decode registry data manually, using native EnCase functionality or programs written in the EnScript programming language.

### Day 2

Day two begins with a discussion on the types of files included in the NT File System (NTFS) and the header and structure of the NTFS Master File Table (\$MFT). Students will then learn how NTFS time-stamp information is stored and how to examine redundant time-stamp data with a view to identifying files of evidential significance.

Further instruction details how file data is stored and how NTFS alternate data streams can provide additional information regarding the provenance of files and the presence of encrypted data.

Day two concludes with the examination of two important log files associated with the NT File System.

## COURSE INFORMATION

Course duration:  
**32 Hours**

CPE Credits:  
**0**

Delivery method:  
**Group-Live**

Instructor:  
**Frank Butler**

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### The main areas covered on day 2 include:

- Understanding the nature of NTFS metadata and how it is stored, as well as the basic layout of a \$MFT record.
- Examining the contents of the \$Standard Information attribute (\$SIA) and the \$Filename attribute (\$FNA), paying particular regard to the time stamps they contain.
- Examining how the NTFS \$MFT \$Data attribute is used to either store or reference a file's data on an NTFS volume, along with the nature and potential importance of alternate data streams.
- Tackling data encrypted using the Microsoft Windows Encrypting File System (EFS) and BitLocker™.
- Extracting NTFS USN change-log journal records and subsequent analysis.
- Examining the NTFS \$Logfile and its significance.

### Day 3

Day three begins with a practical exercise that allows the students to test their knowledge of NTFS volumes and to identify recovered/deleted files and the provenance and source of certain files.

Instruction continues in a number of areas, including Windows event-log files, prefetch files, shortcut-link files and jump lists, the operation of the Windows Recycle Bin, ShellBag analysis and volume shadow copy examination. Day three concludes with a practical exercise that reinforces the day's lessons.

### The main areas covered on day 3 include:

- Learning how event-log data can be processed, searched and bookmarked using EnCase.
- Understanding how to examine event-log data using Windows, as well as the importance of prefetch file analysis.
- Operating shortcut link files and jump lists, their significance and how to examine them.
- Analyzing the Windows Recycle Bin folder and its contents.
- Studying the significance of Windows ShellBag data and its importance when determining the provenance of folders accessed by the user.
- Operating the Volume Shadow Service (VSS) and learning the importance and analysis of volume shadow copies.

### Day 4

Day four focuses on the analysis of random access memory (RAM). This is followed by an examination of some of the most widely used web-browser applications and their individual peculiarities.

The course concludes with a final practical exercise that reinforces the benefits of RAM and browser-artifact analysis.

**The main areas covered on day 4 include:**

- Understanding the operation of RAM, its analysis using the Volatility memory framework and the importance of timely analysis of volatile data, particularly where encryption and cloud-based file storage is concerned.
- Learning Internet Explorer®, Microsoft Edge®, Firefox® and Chrome™ artifact overview