Mac OS Internals Training

Duration: **5 Day**

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Overview

This five-day expert led course provides an in-depth exploration of Apple operating systems, aligned with Jonathan Levin's OS Internals trilogy. It focuses on Darwin 25, macOS "26" (Tahoe), and iOS "26", combining theoretical insight with extensive hands-on exercises. Participants will gain a deep understanding of system internals, reverse engineering techniques, and security mechanisms across Apple platforms. The course incorporates proprietary tools, undocumented behaviours, and real-world analysis techniques used by professionals in reverse engineering and security research.

Learners will benefit from direct exposure to low level system components, gaining the ability to analyse binaries, interact with kernel interfaces, and investigate malware behaviour across macOS and iOS environments.

Prerequisites

Participants should meet the following requirements:

- User level knowledge of macOS
- Experience with user mode programming
- Familiarity with x86_64 and or ARM64 architectures strongly recommended
- Access to a Mac device and optionally a jailbroken iOS device

Target audience

This course is designed for professionals seeking advanced technical expertise in Apple operating systems:

- Reverse engineers
- Security researchers
- Malware analysts
- Forensics experts specialising in macOS and iOS

It is also suitable for individuals aiming to develop deep system level knowledge and modern reverse engineering capabilities.

What You Will Learn

By the end of this course, participants will be able to:

- Understand binary linking and loading mechanisms in Apple systems
- Reverse engineer and analyse Mach O binaries
- Deconstruct Objective C and Swift binaries
- Utilise documented and undocumented APIs for tracing and debugging
- Interface with and hook kernel system calls
- Identify and analyse macOS and iOS malware techniques
- Evaluate kernel, kext, and daemon attack surfaces

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