



Masterclass:

Windows Security and Infrastructure Management

CQURE

Warsaw New York Dubai Zug

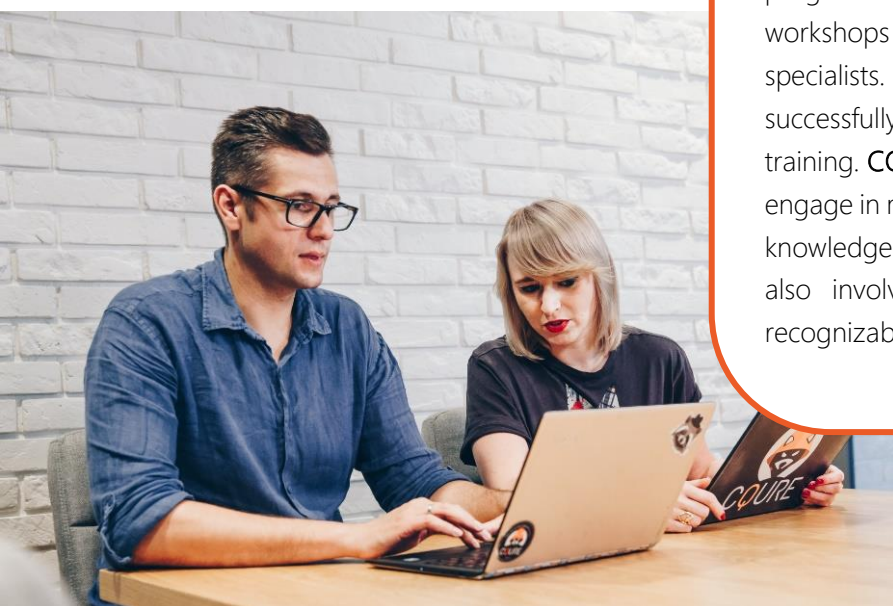
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Paula Januskiewicz is a world-renowned cybersecurity Expert, a founder of CQURE and CQURE Academy, and Microsoft Regional Director and MVP.

CQURE Academy focuses on cybersecurity training program consisting of over 20 high-quality technical workshops and seminars and providing certification to specialists. Additionally, in October 2016 CQURE has successfully launched online and subscription-based training. **CQURE Experts** speak at international events and engage in multiple cybersecurity projects – they bring their knowledge and experience to trainings. CQURE Academy also involves R&D – that is why CQURE Team is recognizable in the cybersecurity field.






About the course

The secure infrastructure configuration should be the most important line of defense in every organization. Unfortunately, people, the most valuable resource, are not always aware of the level of security in their companies, possible points of entry, how operating systems are attacked, and how to protect the infrastructure from successful attacks

which are sometimes caused by configuration mistakes. Understanding internal OS protection mechanisms and services/roles completely provides a huge impact on the whole infrastructure security level. Unfortunately, the problem is... rarely anyone has this impact!

Advanced access rights, password mechanisms, windows internals, PowerShell usage for security purposes, gaining unauthorized access, advanced DNS configuration and common configuration mistakes, Active Directory security, IIS Security, debugging, advanced monitoring and troubleshooting and much more! Topics covered during this training will help you to walk in hackers' shoes and evaluate your infrastructure from their point of view.

 **We really want you to leave the class with practical, ready-to-use knowledge of how to get into the infrastructure!**

This is a deep dive course on infrastructure services configuration, increasing their level of security and windows internals. It is a must-go for enterprise administrators, security officers and architects. Delivered by one of the best people in the market in the security field – with practical knowledge from tons of successful projects, many years of real-world experience, great teaching skills and no mercy for misconfigurations or insecure solutions.





The course is an intense workshop! During these 5 days we provide caffeine candies – this course is really intense and in order not to miss a thing you **MUST** stay awake!



All exercises are based on **Windows Server 2016 and 2019, Windows 10** and Kali Linux. This course is based on practical knowledge from tons of successful projects, many years of real-world experience and no mercy for misconfigurations or insecure solutions!

Prerequisites:

To attend this training, you should have a good hands-on experience in administering Windows infrastructure. At least 8 years in the field is recommended.

Target audience

Enterprise administrators, infrastructure architects, security professionals, systems engineers, network administrators, IT professionals, security consultants and other people responsible for implementing network and perimeter security.

Materials

Author's unique tools, over 100 pages of exercises, presentations slides with notes.

Agenda

Module 1: Windows Internals & System Architecture

- a) Introduction to the Windows 10 and Windows Server 2016 security concepts
- b) Architecture overview and terms
- c) Key System Components
 - i. Processes, Threads and Jobs
 - ii. Services, Functions and Routines
 - iii. Sessions
 - iv. Objects and Handles
 - v. Registry
- d) Advanced Local Procedure Call
- e) Information gathering techniques
 - i. Windows Debugging
 - ii. Performance Monitor
 - iii. Windows Driver Kit
 - iv. Other useful tools

Module 2: Process and Thread Management

- a) Process and thread internals
- b) Protected processes
- c) Process priority management
- d) Examining Thread Activity
- e) Process and thread monitoring and troubleshooting techniques (advanced usage of Process Explorer, Process Monitor, and other tools)

Module 3: System Security Mechanisms

- a) Integrity Levels
- b) Session Zero
- c) Privileges, permissions and rights
- d) Passwords security (techniques for getting and cracking passwords)
- e) Registry Internals
- f) Monitoring Registry Activity
- g) Driver signing (Windows Driver Foundation)
- h) User Account Control Virtualization
- i) System Accounts and their functions
- j) Boot configuration
- k) Services architecture
- l) Access tokens
- m) Biometric framework for user authentication

Module 4: Debugging & Auditing

- a) Available debuggers
- b) Working with symbols
- c) Windows Global Flags
- d) Process debugging
- e) Kernel-mode debugging
- f) User-mode debugging
- g) Setting up kernel debugging with a virtual machine as the target
- h) Debugging the boot process
- i) Crash dump analysis

- j) Direct Kernel Object Manipulation
- k) Finding hidden processes
- l) Rootkit Detection

Module 5: Memory Analysis

- a) Memory acquisition techniques
- b) Finding data and activities in memory
- c) Step-by-step memory analysis techniques
- d) Tools and techniques to perform memory forensic

Module 6: Storage Management

- a) Securing and monitoring Files and Folders
- b) Protecting Shared Files and Folders by Using Shadow Copies
- c) Implementing Storage Spaces
- d) Implementing iSCSI
- e) Implementing FSRM, managing Quotas, File Screens, and Storage Reports
- f) Implementing Classification and File Management Tasks, Dynamic Access Control
- g) Configuring and troubleshooting Distributed File System

Module 7: Startup and Shutdown

- a) Boot Process overview
- b) BIOS Boot Sector and Bootmgr vs. the UEFI Boot Process
- c) Booting from iSCSI
- d) Smss, Csrss, and Wininit

- e) Last Known Good configuration
- f) Safe Mode capabilities
- g) Windows Recovery Environment (WinRE)
- h) Troubleshooting Boot and Startup Problems

Module 8: Infrastructure Security Solutions

- a) Windows Server Core Improvements in Windows Server 2016
- b) AppLocker implementation scenarios
- c) Advanced BitLocker implementation techniques (provisioning, Standard User Rights and Network Unlock)
- d) Advanced Security Configuration Wizard
- e) IPSec
- f) Advanced GPO Management
- g) Practicing Diagnostic and Recovery Toolkit
- h) Tools

Module 9: Layered Network Services

- a) Network sniffing techniques
- b) Fingerprinting techniques
- c) Enumeration techniques
- d) Networking Services Security (DNS, DHCP, SNMP, SMTP and other)
- e) Direct Access
- f) High Availability features: cluster improvements and SMB (Scale – Out File Server)
- g) Network Load Balancing

Module 10: Monitoring and Event Tracing

- a) Windows Diagnostic Infrastructure
- b) Building auditing
- c) Expression-based audit policies
- d) Logging Activity for Accounts and processes
- e) Auditing tools, techniques and improvements
- f) Auditing removable storage devices

Module 11: Points of Entry Analysis

- h) Offline access
- i) Linux BackTrack /other tools vs. Windows Security
- j) Unpatched Windows and assigned attacks
- k) Domain Controller attacks
- l) Man-in-the Middle attacks
- m) Services security