

## Advanced PC Configuration, Troubleshooting and Data Recovery: Hands-On - 4 Days

### *Course 150 Overview*

- You Will Learn How To**
- Recover lost files/directories and revive nonbootable hard disks
  - Create emergency rescue disks to recover crashed Windows systems
  - Detect and remove virus and spyware programs
  - Remove unwanted start-up programs from the Registry
  - Examine system status with Windows Computer Management tools
  - Install and configure a basic TCP/IP network and firewall

**Course Benefits** Organizations can lose valuable time and resources when PC systems fail or are poorly maintained. In this advanced course, you gain the tools and techniques you need to maximize the performance of PC systems, troubleshoot the problems, and recover lost data and files. You are also introduced to Windows Registry editing and hardware configuration and troubleshooting techniques.

**Who Should Attend** All personnel involved in the daily operation, maintenance, and support of PC hardware and software. Basic PC hardware configuration experience is helpful.

**Hands-On Training** Extensive hands-on exercises provide the skills to recover lost data, manage memory and improve PC performance. Exercises include:

- Recovering erased files and directories
- Reviving nonbootable disks
- Repartitioning and "cloning" a disk partition
- Detecting and preventing virus infections
- Troubleshooting with the Windows Recovery Console
- Building a bootable WinPE emergency repair disk
- Editing the Windows Registry
- Installing and configuring a TCP/IP network
- Implementing firewall programs

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## Course 150 Outline

### Basic Data Recovery Concepts

#### An organized troubleshooting strategy

- Interpreting disk error messages
- Creating emergency rescue disks
- Disk repair tools

#### How disk drives work

- Tracks, cylinders, sectors, clusters
- Master boot record
- Partition table
- File systems (FAT16/32, ExFAT, NTFS5)

### Recovering Files and Directories

#### Useful data-recovery techniques

- Recovering erased files
- Editing disk sectors
- Rescuing data from USB flash drives
- Transferring recovered files to back up media

#### Surviving disk disasters

- Reviving nonbootable disks
- Repairing the master boot record
- Fixing a damaged partition table

#### Solving common disk problems

- Recovering from accidental reformatting
- "Invalid drive specification"
- When Windows won't start

### Fighting Malware: Viruses, Spyware and Rootkits

#### The malware epidemic

- Preventing infection
- Diagnosing virus
- Treating spyware infections
- Detecting and removing rootkits

#### Macro viruses

- Protecting key system files
- Checking for macro viruses missed by scanning programs
- Protecting against script-based viruses

### "Turbocharging" the Hard Drive

#### Optimizing disk organization

- Repartitioning disks on the fly
- Reducing wasted cluster space
- Eliminating disk fragmentation
- Managing MBR (Master Boot Record) and GPT (GUID Partition Table) Disks

#### Implementing Windows recovery strategies

- Creating complete disk images with GHOST
- Repairing damaged systems
- Creating a WinPE ISO image

- Installing and configuring Windows firewall programs for maximum protection

### The Windows Registry and Other OS Configuration Files

#### Overview of OS boot files/configuration tools

- NTLDR
- NTDETECT.COM
- NTOSKRNL.EXE
- BOOT.INI
- BCD (Boot Configuration Database)
- BCDEdit
- DISM (Deployment Image Servicing and Management)

#### Troubleshooting Registry problems

- Repairing corrupted Registry files
- Removing unwanted Registry entries
- Solving .INI/Registry conflicts

### Configuring and Troubleshooting Windows

#### Windows emergency repair tools

- Booting a "blue-screened" system with the Windows Recovery Console
- Performing emergency repairs with Microsoft Diagnostic and Recovery Tools (DaRT)
- Creating bootable Windows PE repair disks

#### Troubleshooting startup problems

- Windows Plug-and-Play architecture
- Windows boot files
- Windows 7 startup sequence
- Windows 8 startup features
- Creating Windows backups

#### Windows administrative tools

- Computer Management Console
- System tools, storage, services and applications
- Viewing event logs

#### Securing your computer

- Physical security and hardware authentication devices
- Authentication technologies: CHAP, digital certificates, Kerberos
- Controlling access with User Accounts and Group Policies