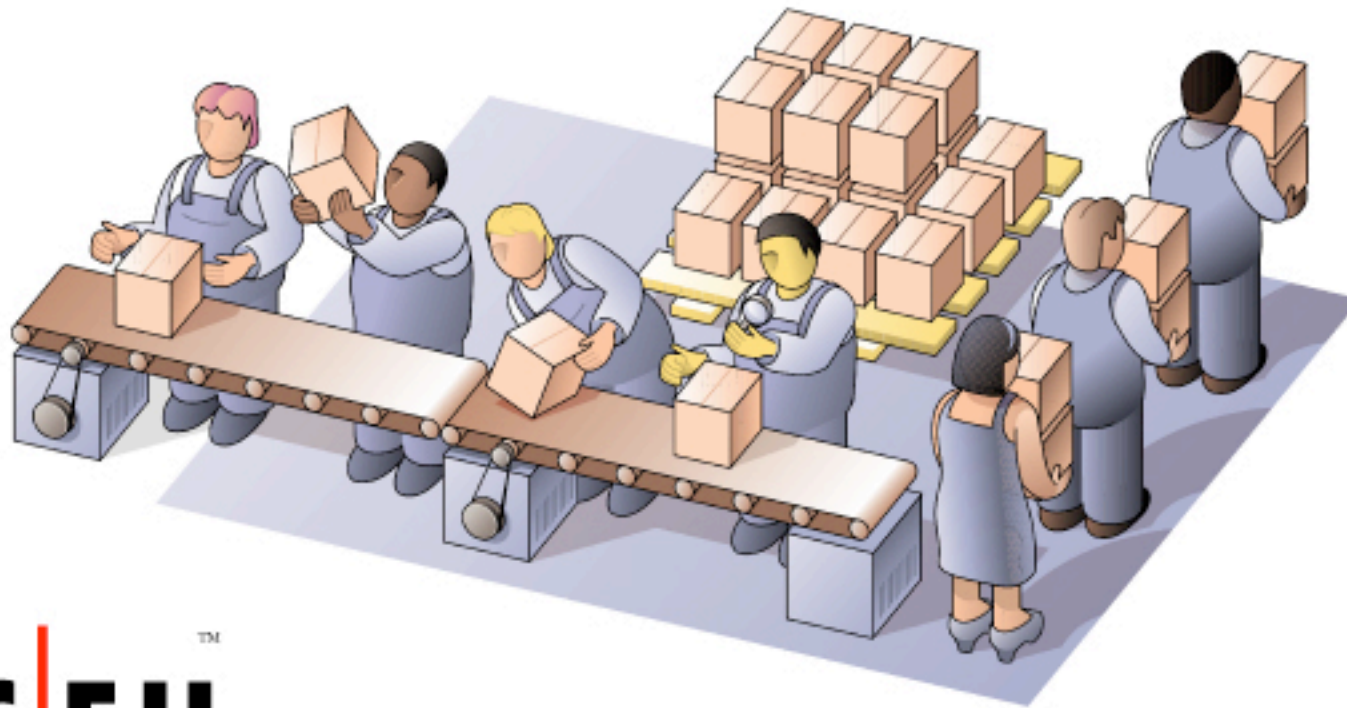


CEHv6 Classroom Lab Setup Guide



<http://www.eccouncil.org>

EC-Council

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Classroom Setup Instructions: CEHv6

This document contains setup instructions for the EC-Council Certified Ethical Hacker (CEH) course. The course requires a standard modular classroom seating configuration, one computer for each student, one computer for the instructor, one computer configured as an attack target (victim), a dedicated hub or switch (hub preferred), dedicated firewall, and Internet connection. This class teaches network attack and penetration methodologies. It is imperative that network used for this class be separated both logically and physically from any other network in the training facility to preclude students “accidentally” conducting exploits on other computers within accessible networks.

Before beginning the class, install and configure all computers using the information and instructions that follow.

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Classroom Requirements

This section describes classroom equipment required for the EC-Council Certified Ethical Hacker course.

Classroom Equipment

The following equipment is required for the general classroom setup:

- Climate control system adjustable within the classroom
- Lighting controls, adjustable within the classroom
- Whiteboard, 3 feet X 6 feet (1m X 2m) or larger
- Markers, whiteboard, assorted colors
- Eraser, whiteboard
- Cleaner, whiteboard, liquid, 3 oz minimum
- Towels, paper
- Easel with flipchart or butcher paper pad, 24 inches X 36 inches
- Felt tip pens, blue and black required, other colors optional, chisel tip (not fine-point)
- Screen, projection, 6 feet diagonal measurement (non-reflective whiteboard surface may be substituted)
- Instructor station:
 - Desk
 - Chair, ergonomic
 - Power outlet
 - Network jack
 - Projector, LCD, capable of 740 X 1280 pixels minimum w/ all connecting cables
- Student station (per student)
 - Chair, ergonomic
 - Workstation, minimum horizontal workspace 9 square feet (3 feet X 3 feet)
 - Outlet, power, one per student station
 - Network jack, one per student station

Hardware

Hardware requirements for instructor, student and victim computers are identical:

- Intel Dual Core or equivalent CPU with minimum CPU speed of 2.4 GHz
- 2 GB or greater RAM
- Hard disk, 40GB or larger, 7200 RPM or faster
- CD-ROM/DVD drive (CD R/W drive preferred)
- Network adapter, 10/100 Mb/s required, full duplex (disable any additional network adapters installed)
- Super VGA (SVGA) monitor 17 inch
- Mouse or compatible pointing device
- Sound card with amplified speakers
- Internet access
- BIOS bootup configuration set to CD-ROM, Drive A, hard disk 1 (C: drive)
- Wireless Network adapter (PCI or USB)^{1,2}

The following additional hardware is also required:

- Hub or unmanaged switch (hub preferred), with sufficient ports to allow connection of all instructor and student workstations plus at least 5 additional, unused ports for connection of additional equipment or for use as “spares.”²
- Hardware firewall appliance (Cisco PIX, ASA or equivalent)²

Software

All computers in the class require the following software:

- Windows 2003 Server (Standard or Enterprise Edition)
 - Adobe Acrobat Reader (from CEH tools CDs)
 - WinZip 8.1 (from CEH tools CDs)

¹ If wireless network adapters are not available for all classroom machines, at least the Instructor and Victim machines must be so equipped.

² Failure to provide this hardware will prevent students from conducting certain labs and degrade the learning experience. If the student machines or classroom cannot be equipped with this hardware, the training facility should notify students that it cannot meet all hardware requirements for the class and that they will be unable to perform certain labs.

- VMWare (current licensed version)³ or Microsoft Virtual PC (current licensed version)⁴
 - Windows 2003 Server (Standard or Enterprise Edition), as guest OS configured with:
 - MS SQL Server 2000
 - MS Internet Information Server (IIS)
 - SNMP Services
 - Windows 2000 Server (Standard or Enterprise Edition), without service packs as a guest OS
 - Windows XP Professional as a guest OS
 - Fedora Core (latest version) as guest OS
 - CEH BackTrack (from CEH tools CDs) running as an ISO inside a virtual machine

The instructor computer requires all software listed above AND the following additional software:

- Dynamic Host Configuration Protocol (DHCP) Server
- MS Word, PowerPoint and Excel (Office 2000, Office XP, Office 2003 or Office 2007 versions)

Classroom Connectivity

Because this class teaches network attack methodologies, it must be logically and physically separated from any other networks present in the training facility and must have its own connection to the Internet.

Configuration

This section describes the procedures for setting up the instructor, victim and student computers as well as general directions for the configuration of the firewall appliance.

This guide assumes that you will use disk-imaging software to create images of the classroom computers for future use. To that end, configuration tasks common to all computers are presented first. Perform these tasks on the computer that will

3 If your organization has not purchased VMWare Workstation, a trial copy can be downloaded from <http://www.vmware.com>. You will need to register the copy in order to use it for the class. You will need to download copies for each student in the class plus copies for the instructor and victim machines.

4 A copy of Virtual Server 2005 is provided in the Module 00-Miscellaneous folder located on the CEHv6 Labs Volume 1 DVD-ROM.

become the Instructor computer. Create a disk image after setting up a single student computer. You may then deploy this image to remaining classroom machines while completing configuration of the Instructor computer.

Because the Instructor computer is configured as a DHCP server that provides IP addresses to the student machines, the installation and configuration of the Instructor computer must be completed before final configuration of the student machines can begin. The Victim machine uses a static IP address and so can be configured at any time after the base image has been deployed.

Setup Document overview

This document provides background information for technical staff responsible for setting up a training room facility for the CEH course. This guide describes the requirements for the network equipment and computer stations that are installed and configured by the facilities personnel for the training courses.

Training room environment

The training room environment consists primarily of the following equipment:

1. Student Computer
2. Instructor Computer
3. Victim machine

Equipment	Number (Class of 12 students)	Operating System	Minimum System Requirements
Student Workstations	12	Windows 2003 Server	Intel Dual Core PC with 40 GB free disk space, 1GB RAM (2 GB preferred), 1 NIC (disable or unplug extras), 15-inch monitor and cards to drive at 1024 x 768 (or at monitor's native resolution) and configured at 16 million colors, and compatible mouse
Instructor Station	1	Windows 2003 Server	Intel Dual Core PC with 40 GB free disk space, 1GB RAM (2 GB

			preferred), 1 NIC (disable or unplug extras), 15-inch monitor and cards to drive at 1024 x 768 (or at monitor's native resolution) and configured at 16 million colors, and compatible mouse, Wireless Card for Wi-Fi access
Victim Machine	1	Windows 2003 Server running as HOST VMWARE Virtual Machines images: <ul style="list-style-type: none"> - Windows 2000 Server w/o SP - Windows XP - RedHat Linux Fedora 	Intel Dual Core PC with 40 GB free disk space, 1GB RAM (2 GB preferred), 1 NIC (disable or unplug extras), 15-inch monitor and cards to drive at 1024 x 768 (or at monitor's native resolution) and configured at 16 million colors, and compatible mouse

Instructor's computer

The instructor's computer must:

- Be installed with Windows 2003 Server (Standard or Enterprise Edition)
- Be installed with SQL Server 2000
- Be running Microsoft Internet Information Server (IIS)
- Be running IP protocol.
- Be running SNMP services
- Contain all hacking tools from the CEH v6 Lab Files DVD-ROMs resident on the hard drive in **CEH tools** folder at the Desktop (The lab files DVD-ROMs are available from CEH v6 courseware kit)
- Contain all Windows 2003 source files in c:\i386
- Have PowerPoint, Word and Excel installed (Microsoft Office 2000, XP or 2003 version)
- Have Adobe Acrobat, WinZip installed (both can be found in Miscellaneous directory in CEH v6 Lab files DVD-ROM)
- Install "Command Prompt Here" extension (See CT Section)
- Install Juggybank demo in SQL Server 2000 (See CT Section)
- Remove the default "Internet Explorer Enhanced Security Configuration" utility in Control Panel -> Add/Remove Programs -> Windows Components
- Disable DEP in Control Panel -> System -> Advanced -> Settings -> Data Execution Prevention
- Download install Firefox browser
- Install VMWare or Microsoft Virtual PC with (Windows 2000 Server w/o SP, Windows XP, BackTrack and STD)
- Install Microsoft ISA Server on host machine with default settings
- Install Wireless card (USB or PCI)
- Have an Overhead Projector connected
- Have a DVD-ROM as part of its hardware
- Configure the logon account to username: *administrator*, password: *password* (lowercase)
- Set Windows Explorer to show all files and file types and extensions.
- Download the CEH desktop wallpaper from <http://www.eccouncil.org/classroom/background.jpg> and set up the downloaded image as Windows background wallpaper.

- The use of Ghost images is recommended to reduce setup time if computer failure occurs. If using Ghost, the Instructor's computer should have a 40 GB hard drive that consists of a 4 GB FAT partition for WINNT and at least one other partition on which to store images of the computers.

Student workstations

Student workstations must:

- Be installed with Windows 2003 Server (Standard or Enterprise Edition)
- Be installed with IIS
- Be running IP
- Contain all hacking tools from the CEH v6 Lab Files DVD-ROMs resident on the hard drive in **CEH tools** folder at the Desktop (The lab files DVD-ROMs are available from CEH v6 courseware kit)
- Contain all Windows 2003 source files in **c:\i386**
- Set Windows Explorer to show all files and file types.
- Have Adobe Acrobat, WinZip installed (both can be found in Miscellaneous directory in CEH v6 Lab files DVD-ROM)
- Remove the default “Internet Explorer Enhanced Security Configuration” utility in Control Panel -> Add/Remove Programs -> Windows Components
- Disable DEP in Control Panel -> System -> Advanced -> Settings -> Data Execution Prevention
- Download install Firefox browser
- Install “Command Prompt Here” extension
- Install VMWare or Microsoft Virtual PC with (Windows 2000 Server, Windows XP, BackTrack and NST)
- Configure the logon account to username: *administrator*, password: *password* (lowercase)
- Install **Matrix** screen saver located in CEH v6 Lab files **DVD-ROM\Miscellaneous** directory – set the time to 15 minutes.
- Download the CEH desktop wallpaper from <http://www.eccouncil.org/classroom/background.jpg> and set up the downloaded image as Windows background wallpaper.

Victim workstation

Victim workstation must:

- Be installed with Windows 2003 Server (Standard edition) w/o SP
- Be Installed with VMWare or Virtual PC with the following host images:
 - Windows XP Professional
 - Windows 2000 Server w/o SP
 - Redhat Linux Fedora
- Be installed with SQL Server 2000
- Be installed with IIS
- Be running SNMP services
- Be running IP
- Contain all hacking tools from the CEH v6 Lab Files DVD-ROMs resident on the hard drive in **CEH tools** folder at the Desktop (The lab files DVD-ROMs are available from CEH v6 courseware kit)
- Contain all Windows 2003 source files in **c:\i386**
- Configure the logon account to username: *administrator*, password: *password* (lowercase)
- Set Windows Explorer to show all files and file types.

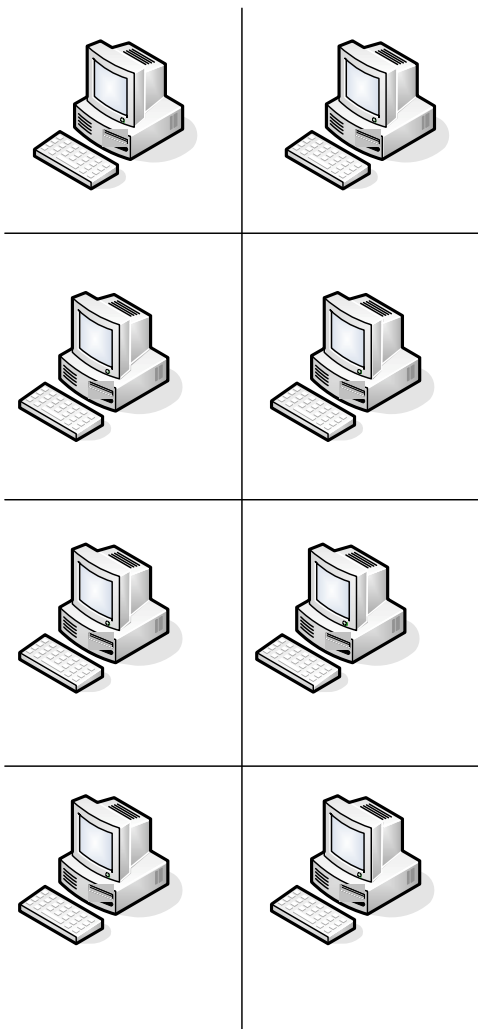
Room environment

- The room must contain a whiteboard measuring a minimum of 1 yard by 2-3 yards in length (1 meter by 2-3 meters).
- The room should contain an easel and large tablet.
- The room must be equipped with legible black and blue felt tip pens (CHISEL-Point, not fine-tip).

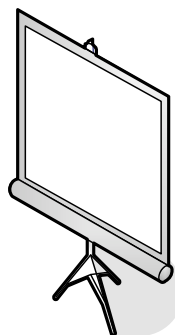
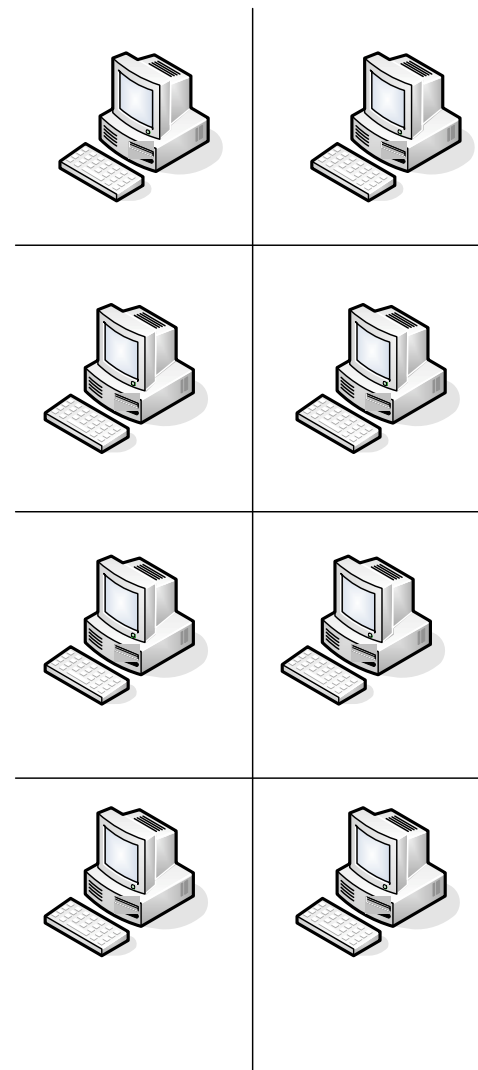
Classroom configuration

The configuration of this classroom is modular. Computers can be added or removed by either row or column, depending on the needs of the particular class. The following is a sample room setup that provides optimal support. This setup allows for ease of access to "*troublespots*" by the instructor, and allows students to break into functional small and larger teams.

Student PCs



Student PCs



Projector

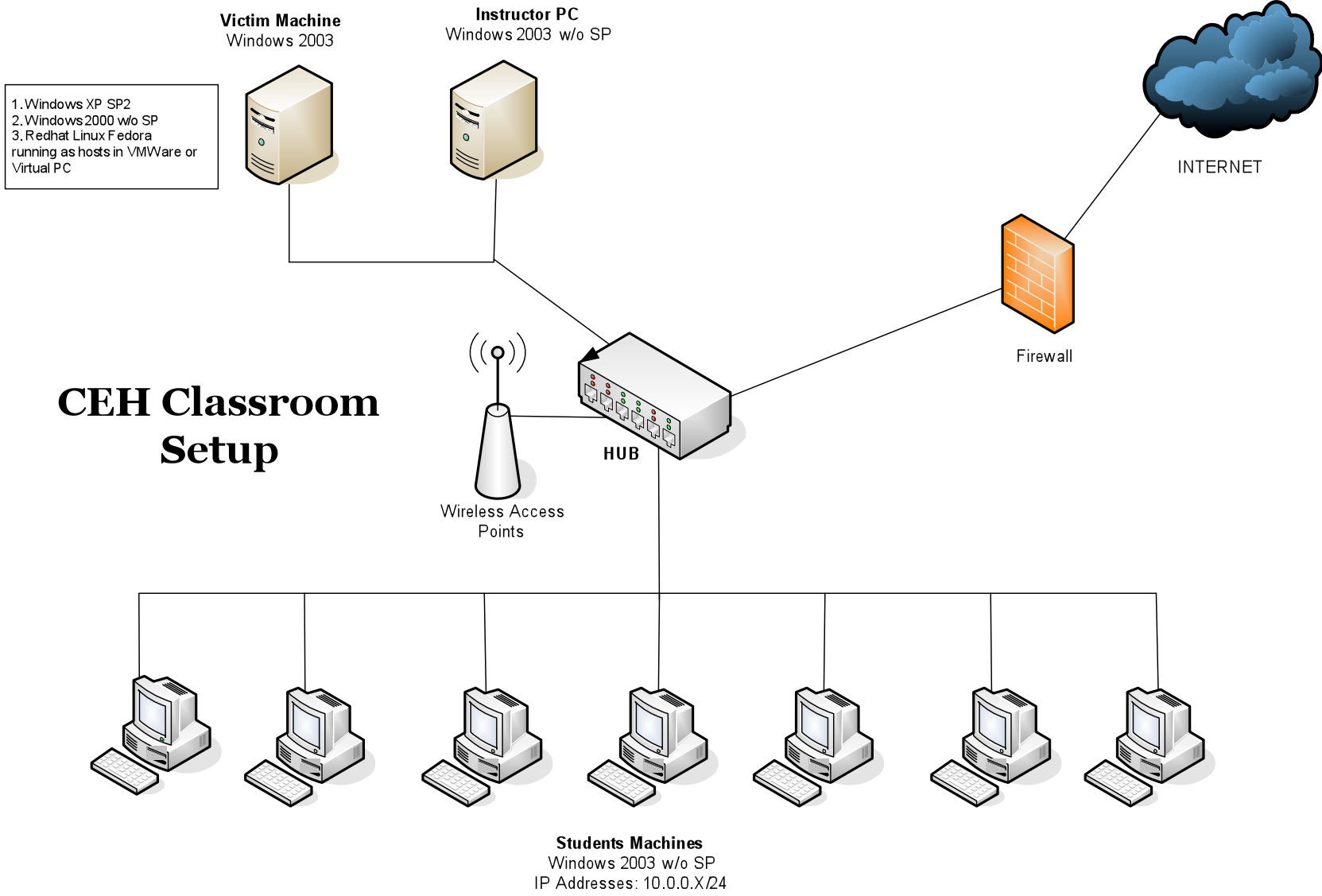
CEH Sample Classroom Setup

Victim



Instructor





CEH Classroom Setup

Set up the machines based on the classroom setup diagram. The lab exercises for the students are instructor led and they are based on the hacking tools in the trainer slides. The instructor is encouraged to demonstrate and guide the students on the usage of the hacking tools against the Victim's computer. Do not encourage live hacking on the Internet using these tools in the classroom. Please feel free to include your own exercises.

VMware and Guest OS Installation

1. Install VMWare

- a. Install VMWare Workstation software on student and instructor machines. Evaluation trial copy of VMWare is located at CD-ROM\Miscellaneous directory and VMWare's website.
- b. You will need to register with VMWare at <http://www.vmware.com> to obtain the serial number.
- c. You can also download a trial version VMWare at <http://www.vmware.com>

2. Install BackTrak Linux as Guest OS in VMWare

- a. Create a new Virtual Machine in VMWare and label it as **BackTrack Linux**.
- b. Configure VMWare Linux Virtual Machine's Network settings to use **Bridged – Connected directly to the Network**.
- c. Configure Linux Virtual Machine's CD-ROM settings to use **iso** image and point it to **backtrack3.iso** file. The BackTrack3.iso file is located in the CEH DVD-ROM. The iso file size is about 700MB.

3. Install Windows 2000 Server as Guest OS in VMWare

- a. Create a second Virtual Machine and Label it as **Windows 2000 Server**.
- b. Install Windows 2000 Server without any SP on this virtual machine. Configure the computer name as: Victim-Win2K
- c. Configure the logon account to username: *administrator*, password: *password* (lowercase)
- d. Configure VMWare Windows 2000 Server Virtual Machine's Network settings to use **Bridged – Connected directly to the Network**.

4. Install Windows XP as Guest OS in VMWare

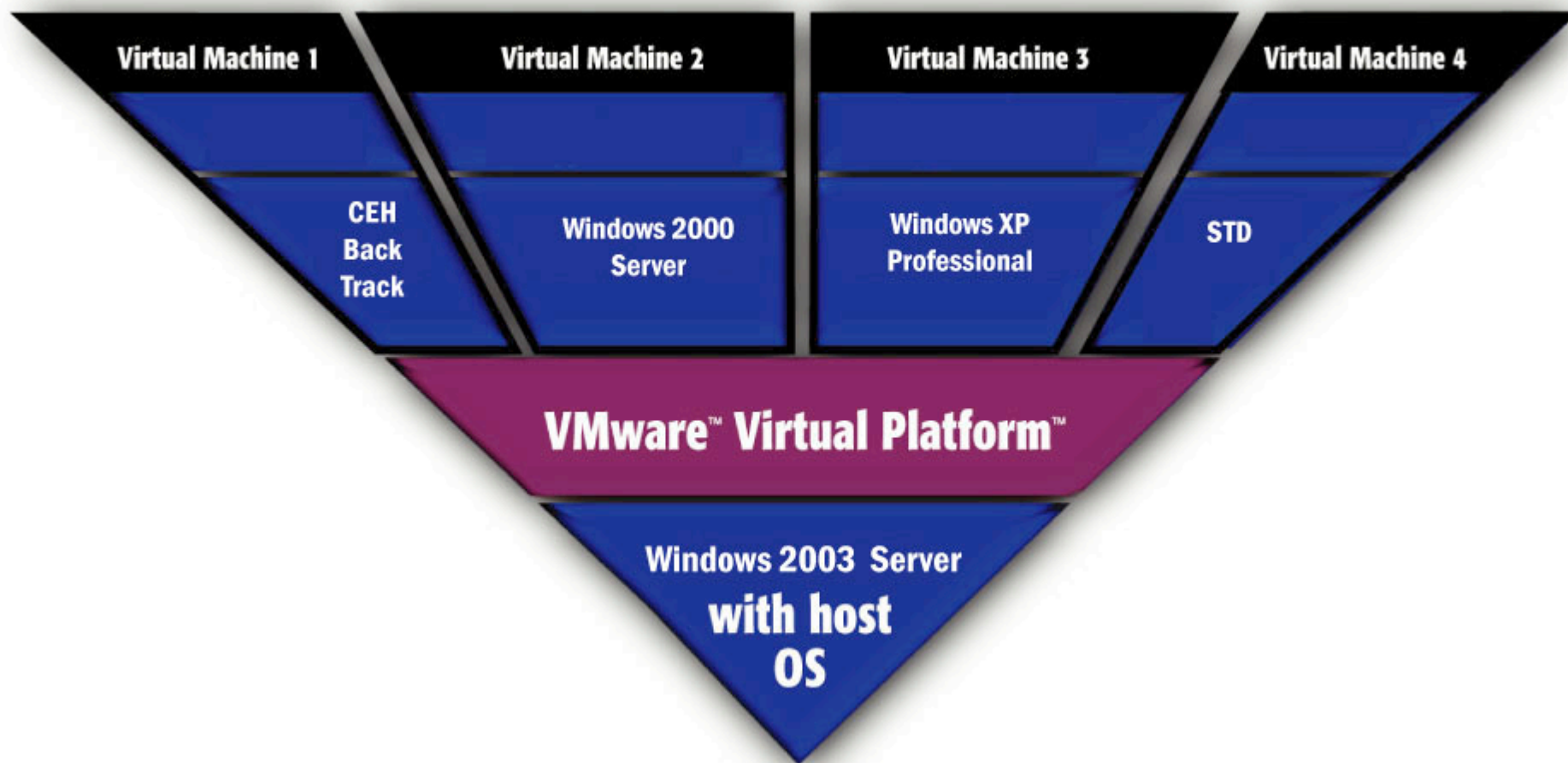
- a. Create a third Virtual Machine in VMWare and label it as **Windows XP SP2**.
- b. Install XP with any service pack on this virtual machine. Configure the computer name as: Victim-XP
- c. Configure the logon account to username: *administrator*, password: *password* (lowercase)

5. Install Security Tools Distribution (STD) as Guest OS in VMWare

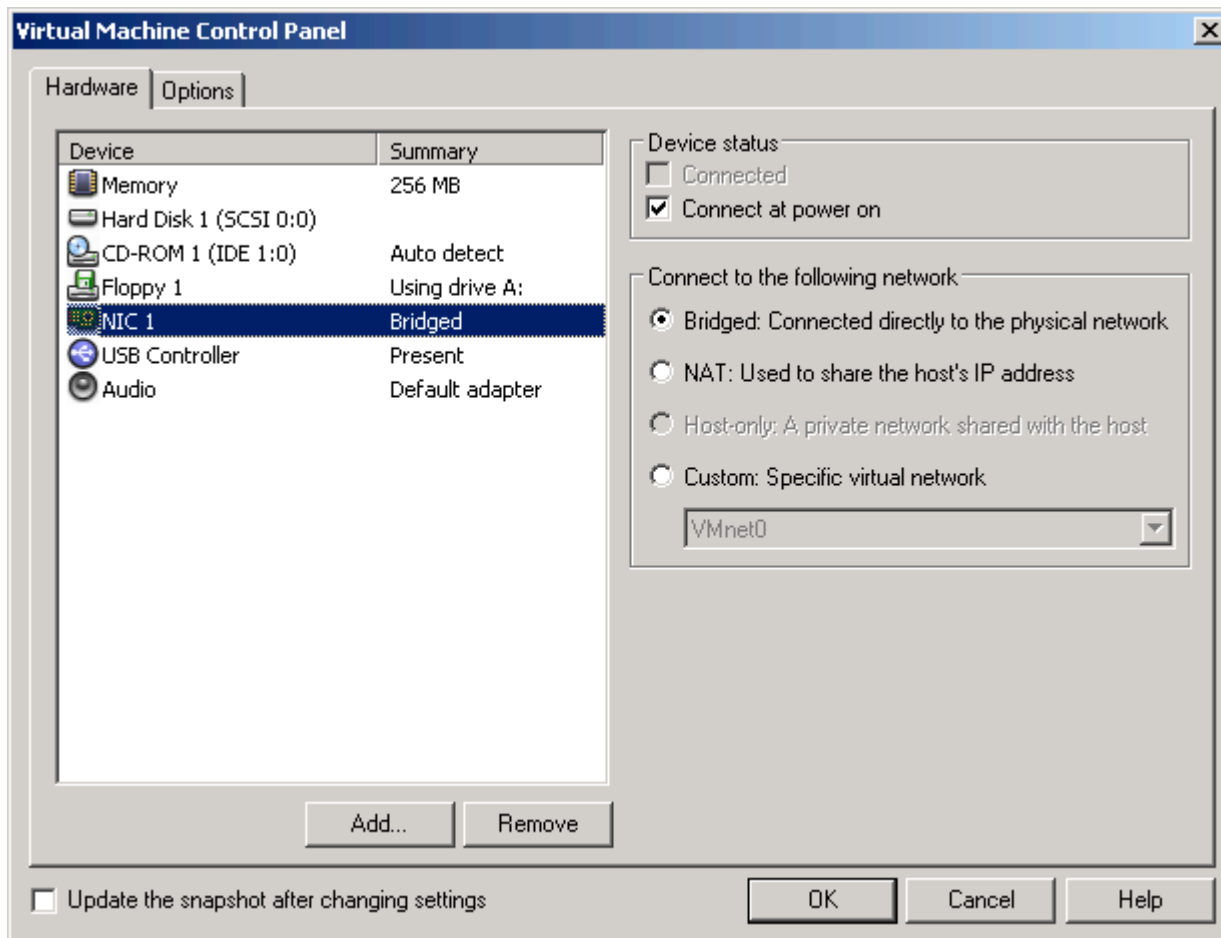
- a. Create a fourth Virtual Machine in VMWare and label it as **Security Tools Distribution**.
- b. Configure VMWare Linux Virtual Machine's Network settings to use ***Bridged – Connected directly to the Network***.
- c. Configure Linux Virtual Machine's CD-ROM settings to use **iso** image and point it to **ceh-std.iso** file. You can download the ceh-nst.iso at <http://www.eccouncil.org/classroom/ceh-std.iso>
- d. The file size of iso file is about 500MB

6. Create **Snapshot** of Windows Virtual Machine in VMWare. Students will be able to restore the virtual PC state after completing exercises.
7. Test the network by pinging the VMWare's Virtual PC guest OS from the host computer and vice versa.
8. Students can target the attacks on VMWare's virtual PC as victim.

You can also use Microsoft Virtual PC instead of VMware. Evaluation copy of Virtual PC can be downloaded from <http://www.microsoft.com/virtualpc>



Configure the network to use Bridged – Connected directly to the physical network.



Network topology

The training room must be physically isolated from any production network. Students must be able to access the Internet from their PCs. All computers are connected as one isolated network and domain. The common protocol is IP. All computers should have dynamic IP addresses using DHCP server. Configure the DHCP server scope to 10.0.0.0/24 IP addresses. This reduces potential problems when booting from BackTrack. NICs can be 10Mbit or 100Mbit (100Mbit is recommended). Hub is recommended but not required instead of a switch (helpful for demonstrating tools in *Sniffer/Session Hijacking* modules) Cables must be bundled and tied out of pathways and work areas, and of sufficient length as not to be under stress.

Computer names

Assign computer names to student machines like CEHSTUDENT1, CEHSTUDENT2, CEHSTUDENT3 and so on. Instructor machine should be named as INSTRUCTOR and victim machine as VICTIM.

NDA document

Download and print the student NDA document located at <http://www.eccouncil.org/agreements/EthicalHacking-NDA.pdf> and have them ready for students to sign before the class starts on day 1.

Note: DO NOT CONDUCT THE CLASS WITHOUT STUDENT SIGNING THIS DOCUMENT.
ATC should file the NDA document at their facility.

Instructor acceptance

Before the training class is scheduled to begin, the instructor will visit the training facility to inspect and accept the setup. The technical contact (System Administrator) for the facility must be available to answer questions and correct any setup

issues. Both the instructor and the facility technical contact will ensure completion of the following checklists before the training setup is deemed acceptable.

Firewall Settings

Do not block any ports while accessing the Internet through the firewall. You should be able to ping servers on the Internet

Blackboard

Write the following on the blackboard top left corner.

- Instructor name: <Name of the instructor>
- Victim Win2003 IP: <Type IP from VM here>
- Victim Win2000 IP: <Type IP from VM here>
- Victim Fedora Linux: <Type IP from VM here>
- The username/password to logon to the student machine.
-

At the center of the board write the following letters in bold.

Welcome to CEHv6 Class!

Instructor name: Jack Smith
Victim Win2003 IP: 10.0.0.34
Victim Win2000 IP: 10.0.0.45
Victim Fedora Linux: 10.0.0.4
The username/password to logon to the student machine.
administrator/password

Welcome to CEH v6 Class!

Setup Checklist

The arrangement of items in the setup checklists is designed to allow the process to be completed in the most efficient manner possible while still validating that the setup has been performed correctly. Before beginning the setup checklist, log off any connected users.

Tick Here	List
<input type="checkbox"/>	Open Network Neighborhood. Verify that all classroom computers are visible in Network Neighborhood.
<input type="checkbox"/>	Verify that the Windows OS source files are on the computer in c:\i386 .
<input type="checkbox"/>	Verify that the hacking tools are on the computer in CEH tools folder at the Desktop.
<input type="checkbox"/>	Verify that Internet access is available.
<input type="checkbox"/>	Visit http://www.eccouncil.org and view the page to check Internet access.
<input type="checkbox"/>	Open Command Prompt and type nslookup certifiedhacker.com and look for connection to the server.
<input type="checkbox"/>	Verify Microsoft PowerPoint, Word, Excel are installed.
<input type="checkbox"/>	Verify Acrobat and Winzip and command prompt extensions are installed.
<input type="checkbox"/>	Verify that the Instructor computer can image through the overhead projector.
<input type="checkbox"/>	Verify each computer has 10 GB or more free disk space.

<input type="checkbox"/>	Verify Windows Explorer is set to show all files and file type including hidden files and extensions.
<input type="checkbox"/>	Verify if you can successfully boot using Windows 2000, Windows XP, BackTrack, STD in VMware/Virtual PC.
<input type="checkbox"/>	Cable Wiring organized and labeled.
<input type="checkbox"/>	Student Workstations and chair placement satisfactory.
<input type="checkbox"/>	Placement of LCD (overhead) projector appropriate.
<input type="checkbox"/>	Whiteboard and dry erase markers and eraser are available.
<input type="checkbox"/>	Instructor station properly organized and oriented.
<input type="checkbox"/>	Computers are labeled with client number.
<input type="checkbox"/>	EC-Council courseware's (Official EC-Council CEHv6 Box) available for students.
<input type="checkbox"/>	Student NDA agreement downloaded and printed for every student in the class and placed on each student desk.
<input type="checkbox"/>	Write down the facility's technical contact person's hand phone number. Contact him in case of network problem.
<input type="checkbox"/>	Verify the configuration of <i>CEH wallpaper</i> on the desktop – black background with CEH logo at the center.
<input type="checkbox"/>	Test the " Matrix " screen saver.
<input type="checkbox"/>	Verify DEP in Control Panel is disabled

<input type="checkbox"/>	Verify that IE Security Configuration is removed from Add/Remove programs
<input type="checkbox"/>	Verify “Command Prompt Here” extension is installed
<input type="checkbox"/>	Verify Firefox Web Browser is installed

Notes

- You might want to ghost the instructor, victim and student machine images so that future installations become easier
- You can always replace corrupted systems files (exe and .dll) files from the c:\i386 directory during the class. Many Trojans and rootkits replace the systems files and you will need to restore them from this directory
- Just have one additional student machine available as standby. If a student complains that he cannot boot up the computer because of virus/trojan infection, then you will be able to replace the student machine with this backup

Instructor Acceptance

The technical contact (System Administrator) for the facility must be available to answer questions and correct any setup issues.

The Instructor will inspect both the classroom and the items covered in the setup checklist(s) to ensure that the classroom and setup meet EC Council standards. Any deficiencies discovered by the Instructor must be corrected before the scheduled start time for the class.

Assistance

If you have problems or require assistance in setting up the Lab for your CEH class, please e-mail haja@eccouncil.org

Detailed Setup Instructions - Configuration Tasks (CT)

CT#1: Set up hardware

1. Install the wireless network adapters according to manufacturer's instructions.
2. Set the computer's BIOS to start first from the CD-ROM drive then hard drive (Drive C:).
3. Configure the hard disk as a single active primary partition formatted as FAT.

CT#2: Install Windows 2003 Server

1. Insert the Windows 2003 Server STD compact disc into the CD-ROM drive.
NOTE: If your computer can start from the CD-ROM drive, restart the computer. If the "Press any key to boot from CD" message appears, press SPACEBAR and then proceed to step 5.
2. Start the computer using an MS-DOS system disk.
3. At the command prompt, type: **x:\i386\winnt /s:x:\i386** (where x is the letter assigned to the CD-ROM drive), and press **ENTER**.
4. When Setup indicates that the MS_DOS portion of Setup is complete, remove any disk from the floppy disk drive, and then press **ENTER**.
5. On the Setup Notification screen, press **ENTER**.
6. When the Windows 2003 Licensing Agreement appears, press **F8** to accept the licensing terms.
7. Setup displays a list of existing partitions and unpartitioned space.
8. In the list of existing partitions, select C: Partition1 [FAT32] and press **ENTER**.
9. If Setup notifies you that converting the partition to NTFS will make the drive unusable by other operating systems, press **C** to convert the partition to NTFS.
10. Setup examines the hard disk and then copies files to the Windows 2000 installation folders.
11. When Setup prompts you to restart the computer, leave the compact disc in the CD-ROM drive.

12. The computer restarts. Setup converts drive C: to NTFS, and then the computer restarts a second time.
14. After the computer restarts, the Windows 2000 Server Setup wizard appears and begins the GUI installation process.
15. On the **Regional Settings** page, click **Next**.
16. On the **Personalize Your Software** page, in the **Name** box, type **CEH**.
17. In the **Organization** box, type **EC Council** and then click **Next**.
18. On the **Your Product Key** page, type the Product Key for your organization's copy of Windows 2003 Server (STD), and then click **Next**.
19. On the **Licensing Modes** page, in the **Number of concurrent connections** box, type **50** and then click **Next**.
20. On the **Computer Name and Administrator Password** page, in the **Computer Name** box:
 - if you are configuring the **physical machine**, type **CEHINSTRUCTOR**
 - if you are configuring the **Windows 2003 Server virtual machine**, type **Instructor**.
21. In the **Administrator password** and **Confirm password** boxes, type **password** and then click **Next**.
22. When the **Windows Setup** dialog box appears, informing you that you have specified a password for the Administrator account that does not meet the criteria for strong passwords, click **Yes**.
23. On the **Date and Time Settings** page, adjust the date, time, and time zone on your computer to conform to that of the local area, and then click **Next**.
24. The **Networking Settings** page appears, informing you that Windows 2003 Server is installing networking components and then prompting you to choose typical or custom network settings.
25. Click **Typical Settings** and click **Next**.
26. On the **Workgroup or Computer Domain** page, click **Next** to join the default workgroup.
27. Windows 2003 Server finishes the installation and the computer restarts.
28. Once the restart has completed, log on as Administrator with a password of **password**.

29. The **Display Settings** balloon appears informing you that the screen resolution and depth should be adjusted. **Click** the balloon.
30. In the **Display Settings** dialog, click **Yes**.
31. In the **Monitor Settings** dialog, click **Yes**.
32. In the **Manage Your Server** dialog, maximize the window and then enable the **Don't display this page at logon** box.
33. Close the **Manage Your Server** window.
NOTE: If you are installing Windows 2003 Server on a physical machine, or installing Windows 2003 Server as a guest operating system in Virtual PC, proceed to CT#3, Copy operating system files. If you are installing Windows 2003 Server as a guest operating system inside VMWare, perform the following additional steps before proceeding to CT#3:
34. Press <**CTRL**>+<**ALT**> to release cursor.
35. In the VMWare menu, click **VM** and select **Install VMWare tools** from the popup menu.
36. In the **W2K3 – Virtual Machine** dialog box, click **Install**.
37. In the **Welcome to the installation wizard for VMWare Tools** window, click **Next**.
38. In the **Setup Type** window, click **Next** as Typical is already selected.
39. In the **Ready to Install the Program** window, click **Install**.
40. If the VMWare Tools Installation dialog appears informing you that hardware acceleration is not enabled, click **Yes** and follow the directions provided in HWAccel.txt to modify the hardware acceleration settings.
41. In the **Installation Wizard Completed** window, click **Finish**.
42. In the VMWare **Tools** window, click **Yes** to restart the VM.
43. After the VM has restarted, log on as Administrator with a password of password.
44. Continue with CT#3, Copy operating system files below.

CT#3: Copy operating system files

1. Copy the i386 folder from the Windows 2003 Server CD to the root of drive C: (C:\).
2. When completed, close all windows to return to the Desktop.

CT#4a: Install VMWare

Note: This setup guide shows how to install VMWare v5.5. Installation of other versions will be similar.

1. Double click on the VMWare-workstation executable.
2. In the **Welcome to the installation wizard for VMWare Workstation** window, click **Next**.
3. In the License agreement window, select **Yes, I accept the terms in the license agreement** and click **Next**.
4. In the **Destination Folder** window, click **Next** to install VMWare in C:\Program Files\VMWare\VMWare Workstation.
5. In the **Configure Shortcuts** window, click **Next**.
6. In the **Configure Product** window, click **Next** to disable autorun.
7. In The wizard is ready to begin installation window, click **Install**.
8. In the **Registration Information** window, click **Skip**.
9. In the **Installation Wizard Completed** window, click **Finish**.

CT#4b: Install Microsoft Virtual PC

Note: This setup guide shows how to install Virtual PC 2004. Installation of other versions will be similar.

1. Insert the Microsoft Virtual PC 2004 CD into the CD-ROM drive.
2. If the installation does not start automatically, open Windows Explorer, navigate to the root of the CD-ROM drive, and double click on the setup.exe executable.

3. In the **Welcome to the InstallShield Wizard for Microsoft Virtual PC 2004** window, click **Next**.
4. In the License Agreement window, select **I accept the terms in the license agreement** and click **Next**.
5. In the **Customer Information** window, enter your **Product ID Key** and then click **Next** as the User Name and Organization boxes are already populated and the install will be configured for anyone who uses this computer (All Users).
6. In the **Ready to Install the Program** window, click **Install** to install Virtual PC in C:\Program Files\Microsoft Virtual PC.
7. In the **Installation Wizard Completed** window, click **Finish**.

CT#5a: Install a Guest Operating System in VMWare↑

NOTE: Steps 1-3 are performed only for the first virtual machine created. When creating the second and subsequent virtual machines, begin with step 4.

NOTE: Fedora Core Linux has special requirements for VMWare installation and is not included in this CT. When ready to install Fedora Core Linux, perform CT#18.

7. Double click on the VMWare Workstation shortcut on the Desktop.
8. In the **Tip of the Day** window, deselect **Show tips at startup** and click **Close**.
9. If the VMWare **Web Check** window appears indicating that there is an update to the installed version of VMWare workstation, click **Cancel**.
10. On the VMWare **Menu**, click **File**▸**New**▸**Virtual Machine**.
11. In the **Welcome to the New Virtual Machine Wizard**, click **Next**.
12. In the **Select the Appropriate Configuration** window, click **Next** as **Typical** is already selected.
13. In the **Select a Guest Operating System** window:

If configuring	Choose
Windows Server	Microsoft Windows

2003	
Windows 2000 Server	Microsoft Windows
Windows XP	Microsoft Windows
Live CD	Linux

14. In the **Select a Guest Operating System** window, **version** drop down box:

If configuring	Choose
Windows Server 2003	Windows Server 2003 Standard Edition
Windows 2000 Server	Windows 2000 Server
Windows XP	Windows XP Professional
Live CD	Other Linux

and then click **Next**.

15. In the **Name the Virtual Machine window**, Virtual machine name box:

If configuring	Type
Windows Server 2003	W2K3
Windows Server 2000	W2K
Windows XP	XP
Live CD	Live

and then click **Next**.

16. In the **Network Type** window, click **Next** as **Use bridged networking** is already selected.

17. In the **Specify Disk Capacity** window, click **Finish** as the **default disk size** of **8.0 GB** is already selected.

18. In the virtual machine tab, **Commands** section, click **Edit virtual machine settings**.

19. Click the **Options** tab.

20. In the **Options** tab, **Settings** window, click on **Snapshots**.

21. In the **Options** tab, **When powering off** section, click **Ask me** and then click **OK**.

22. In the virtual machine tab, **Commands** section, click **Start this virtual machine**.

23. Immediately after the virtual machine's window turns black and the VMWare logo appears in the window, **click** on the VMWare **logo** to set the cursor focus inside the virtual machine and then press **F2** to enter the BIOS setup options.

24. In the **PhoenixBIOS Setup Utility**, use the arrow keys on the keyboard to move to the **Boot** section of the utility.

25. Use the **down arrow key** on the keyboard to select **CD-ROM** drive.

26. Press the plus (+) key on the keyboard **to move CD-ROM to the top of the list** and then press the **F10** key.

Note: If you are configuring the “Live CD” VMWare machine, no further configuration is necessary. Shut down the virtual machine and save a snapshot if asked to do so. If configuring any other VMWare image, continue with step 21 below.

27. Insert an MS-DOS startup disk, Windows 9x Startup disk or partitioning utility into the floppy or CD-ROM drive.

28. In the **Setup Confirmation** window, press **ENTER** as the **Yes** entry is **already selected** to save the new configuration.

29. Create a single primary active partition within the virtual machine using the entire capacity of the virtual hard drive and format the partition with FAT 32.

30. Install the guest operating system by using the appropriate CT below:

If installing:	Use:
Windows Server 2003	CT#2
Windows 2000 Server	CT#16
Windows XP	CT#17
Fedora Core	CT#18

31. Repeat steps 4-24 for each additional Windows-based guest operating system to be installed. To install Fedora Core Linux, perform CT#18 instead of steps 2-24 above.

CT#5b: Install Windows 2003 Server as a Guest Operating System in Virtual PC

1. If other virtual machines are installed on the host, the Virtual PC Console appears. Click **New**.
2. In the **Welcome to the New Virtual Machine Wizard**, click **Next**.
3. In the **Options** window, click **Next** as the Create a virtual machine option is already selected.
4. In the **Virtual Machine Name and Location** window, name and location: box, name the guest operating system Windows 2003 Server and then click **Next**.
5. In the **Operating System** window, click on the drop down arrow in the **Operating system:** box and select **Windows 2003 Server**, then click **Next**.
6. In the **Memory** window, click **Next** as the selection for using the recommended RAM is already selected.

7. In the **Virtual Hard Disk Options** window, select **A new virtual hard disk** and then click **Next**.
8. In the **Virtual Hard Disk Location** window, click **Next**.
9. In the Completing the **New Virtual Machine Wizard**, click **Finish**.
10. In the **Virtual PC Console**, click **Settings**.
11. In the **Settings** window, click **Undo Disks**.
12. In the **Undo Disks** pane, click **Enable undo disks** to enable this feature and then click **OK**.
13. In the **Virtual PC Console**, click **Windows 2003 Server** if it is not already selected and click **Start**.
14. In the Windows 2003 Server Microsoft Virtual PC 2004 window Menu, click CD.
15. From the drop down menu, select Use Physical Drive D:
16. Insert an MS-DOS startup disk, Windows 9x Startup disk or partitioning utility into the floppy or CD-ROM drive.
17. Create a single primary active partition within the virtual machine using the entire capacity of the virtual hard drive and format the partition with FAT 32.
18. **Install Windows 2003 Server** (Standard Edition) as described in CT#2.

CT#6: Copy courseware files

1. Create a folder on the Desktop named CEH_Tools.
2. Insert the CEH v6 Labs Volume 1 DVD discs into the DVD-ROM drive, and then copy the contents of the compact disc to the CEH_Tools folder.
3. Repeat this procedure for CEH v1 Labs Volume 2-4.

Note: When copying these additional CDs, if you are informed that files already exist at the destination, choose to overwrite any existing files.

CT#7: Install and Configure Simple Network Management Protocol (SNMP) Services

Note: This task takes place inside the Windows 2003 Server Virtual Machine.

1. Start|Control Panel|Add or Remove Programs.
2. In the **Add or Remove Programs** window, click on **Add/Remove Windows Components**.
3. In the Windows Components Wizard, **Components** window, scroll to and select **Management and Monitoring Tools** and then click **Details**. Do not click the check box to the left of management and Monitoring Tools.
4. In the Management and Monitoring Tools window, **Subcomponents** window, click the check box to the left of **Simple Network Management Protocol** and click **OK**.
5. In the **Windows Components** window, click **Next**.
6. If the **Insert Disk** dialog appears, asking you to insert the Windows Server 2003 Compact Disc, click **OK**.
7. In the **Files Needed** window, Copy files from: drop down, change the displayed location to C:\i386 and click **OK**.
8. In the Completing the Windows Components Wizard window, click **Finish**.
9. Close the Add or Remove Programs window.
10. Start|Programs|Administrative Tools|Computer Management.
11. In the **Computer Management Console**, expand **Services and Applications**.
12. Click on **Services**.
13. In the right pane of the Console, scroll to **SNMP Service**.
14. Right click on **SNMP Service** and select **Properties** from the pop up menu.
15. Click on **Security** Tab.
16. In the **Accepted Community Names** section, click **Add**.

17. In the **SNMP Service Configuration** window, type **Public** in the Community Name box for Community Rights: **READ ONLY** and click **Add**.
18. In the **Accepted Community Names** section, click **Add**.
19. In the **SNMP Service Configuration** window, click the drop down arrow in the **Community Rights** box and select **READ WRITE**.
20. In the Community Name box, type **Private** and then click **Add**.
21. Select **Accept SNMP packets from any host** and then click **Apply** and **OK**.
22. Close Computer Management Console.

CT#8: Install Internet Information Services (IIS)

1. Click on Start|Control Panel|Add or Remove Programs.
2. In the **Add or Remove Programs** window, click on **Add/Remove Windows Components**.
3. In the **Windows Components** window, click the check box to the left of **Application Server**. This will install the Application Server Console, Enable network COM+ access and install IIS Common Files, Internet Information Services Manager and World Wide Web Service.
4. In the Windows Components Wizard window, unselect **Internet Explorer Enhanced Security Configuration** and click **Next**.
23. If the **Insert Disk** dialog appears, asking you to insert the Windows Server 2003 Compact Disc, click **OK**.
24. In the **Files Needed** window, Copy files from: drop down, change the displayed location to C:\i386 and click **OK**.
5. When the **Completing the Windows Components Wizard** window appears, click **Finish**.
6. **Close** the **Add or Remove Programs** Window.

CT#9: Install MS SQL Server 2000

1. Insert the MS SQL Server 2000 (Enterprise Edition) CD into the CD-ROM drive.
2. When the **Microsoft SQL Server 2000 Enterprise Edition** splash page appears, click **SQL Server 2000 Components**.
3. In the **Install Components** splashscreen, click **Install Database Server**.
4. In the **SQL Server 2000 SP2 and below** window, click **Continue**.
5. In the **Microsoft SQL Server Installation Wizard Welcome** screen, click **Next**.
6. In the **Computer Name** window, click **Next** to install SQL server on the local computer.
7. In the **Installation Selection** window, click **Next** to **create a new instance of SQL Server or install Client Tools**.
8. In the **User information** window, click **Next** as the Name: Instructor and Company: EC Council should already appear in the respective boxes. If this information is missing, type the appropriate entry in the appropriate boxes and then click Next.
9. In the **Software License Agreement** window, click **Yes**.
10. In the **Installation Definition** window, select **Server and Client Tools** and then click **Next**.
11. In the **Instance Name** window, click **Next**.
12. In the **Setup Type** window, select **Typical** and click **Next**.
13. In the **Services Accounts** window:
 14. Select **Use the same account for each service. Auto start SQL Server Service**.
 15. Under Service Settings, select **Use the Local System account** and then click **Next**.
 16. In the **Authentication Mode** window, select **Mixed Mode (Windows Authentication and SQL Server Authentication)**
17. Select **Blank password (not recommended)** and click **Next**.
18. In the **Start Copying Files** window, click **Next**.
19. In the **Choose Licensing Mode** window, select **Per seat for:** and type **50** in the processors box. Click **Continue**.

20. In the Setup Complete window, click **Finish**.

CT#10: Configure the JuggyBank Website

1. Open the **CEH_Tools** folder on the Desktop.
2. Open the **Module 19 – SQL Injection** folder.
3. **Copy** the **Sql demo scripts** folder to the root of drive C: (C:\).
4. **Rename** the Sql demo scripts folder to **sql**.
5. Right click on the **sql** folder and select **Sharing and Security** from the pop up menu.
6. Click on the **Security** tab.
7. Beneath the Group or user names box, click **Add**.
8. In the **Select User or Groups** window, click **Advanced**.
9. Click the **Find Now** button to the right of the Common Queries section.
10. In the **Search results** window scroll to the **IUSR_INSTRUCTOR** account and select it.
11. Click the **OK** button above the Search results window.
12. In the **Select Users or Groups** window, click **OK**.
13. In the sql **Properties** window, click **OK**.
14. Right click on the **sql** folder and select **Sharing and Security** from the pop up menu.
15. Click on the **Web Sharing** tab.
16. In the **Web Sharing** tab, ensure that the **sql** folder appears in the **Aliases** window, that the **Share this folder** option is selected and that the **Share on** drop down lists the **Default Web Site**.
17. Click on **sql** in the Aliases window and then click **Edit Properties**.
18. In the **Edit Alias** window, **Access permissions** section, ensure that **Directory browsing** is enabled and then click **OK**.

19. In the sql **Properties** window, click **OK**.
20. Close Windows Explorer to return to the Desktop.
21. **Start|Administrative Tools|Internet Information Service (IIS) Manager**.
22. Expand Instructor (Local Computer).
23. Click **Web Service Extensions** in the left pane of the Console Root.
24. Select **Active Server Pages** in the right pane of the Console Root and click **Allow**.
25. Expand **Web Sites** in the left pane of the Console Root.
26. Right click on the **Default Web Site** and choose **Properties** from the pop up menu.
27. In the **Default Web Site Properties** window, click on the **Home Directory** tab.
28. Click the **Browse** button next to the Local Path: box.
29. In the Browse for folder window, select C:\sql and click OK and then click OK again to close the Default Web Site Properties.
30. Expand **Default Web Site**.
31. Right click on the **sql icon** beneath Default Web Site and select **Properties** from the pop up menu.
32. In the **sql Properties** window, click on the **Directory Security** tab.
33. On the **Directory Security** tab, in the **Authentication and access control** section, click **Edit**.
34. In the **Authentication Methods** window, Select **Enable anonymous access** , click **OK** and then click **OK** again to close the sql Properties window.
35. Close Internet Information Services (IIS) Manager window.
36. In the **sql Properties** window, click on the **Web Sharing** tab.
37. Navigate to Start|All Programs|Microsoft SQL Server|Enterprise Manager.
38. In the Console Root\Microsoft SQL Servers window, expand Microsoft SQL Servers.
39. Expand Microsoft SQL Servers.

40. If there are no SQL servers listed in the group, perform the following steps, else go to step 15.
 - (a) Right click **SQL Server Group** and select **New SQL Server Registration** from the pop up menu.
 - (b) In the **Welcome to the Register SQL Server Wizard** window, click **Next**.
 - (c) In the **Select a SQL Server** window, Available servers: section, **INSTRUCTOR** is listed as an available server. Click **Add** and then click **Next**.
 - (d) In the **Select an Authentication Mode** window, click **Next** as “The Windows account information I use to log on to my computer (Windows Authentication) is already selected” and click **Next**.
 - (e) In the **Select SQL Server Group** window, click **Next** as “Add the SQL Server(s) to an existing SQL Server group is already selected and “SQL Server Group” already appears in the Group name: box.
 - (f) In the **Completing the Register SQL Server Wizard** window, click **Finish**.
 - (g) In the **Register SQL Server Messages** window, when the status shows “INSTRUCTOR – Registered successfully”, click **Close**.
41. Right click on **INSTRUCTOR (Windows NT)** and select **Properties** from the pop up menu.
42. In the SQL Server Properties (configure) window, click the **Security** tab.
43. In the Security tab, Security section, Authentication option, ensure that **SQL Server and Windows** is selected and then click **OK**.
44. Expand **INSTRUCTOR (Windows NT)**.
45. Expand **Databases**.
46. In the **SQL Enterprise Manager Menu**, click **Tools** and select **SQL Query Analyzer** from the drop down menu.
47. In the **Connect to SQL Server** window, SQL Server drop down, if **INSTRUCTOR** does not appear, select it from the drop down box or use the navigate button to locate **INSTRUCTOR** or (local).
48. In the **Connect using** section, select **SQL Server authentication** and click **OK**.

49. Maximize the **Query – INSTRUCTOR.master.sa – Untitled1** window.
50. Close the **Object Browser**.
51. In the **SQL Query Analyzer Menu**, click **File** and select **Open** from the drop down menu.
52. In the Open Query File window, navigate to **C:\sql\Data** and open **juggybank.sql**.
53. In the **SQL Query Analyzer Menu**, click **Query** and select **Execute** from the drop down menu.
54. After the query has executed successfully, close the SQL Query Analyzer window.
55. In the **SQL Server Enterprise Manager Console Root**, right click on the **Databases** folder and select **Refresh** from the pop up menu.
56. Right click on the **juggybank** database and select All Tasks|Import Data from the pop up menu.
57. In the **Data Transformation Services Import/Export Wizard**, click **Next**.
58. In the **Choose a Data Source** window, Data Source drop down, select **Text File**.
59. To the right of the File name: entry box, click the **navigation button**.
60. Navigate to **C:\sql\Data** and open the **juggybank-userinfo-data.txt** file.
61. In the **Choose a Data Source** window, click **Next**.
62. In the **Select file format** window, click **Next**.
63. In the **Specify Column Delimiter** window, click **Next**.
64. In the **Choose a destination** window, **Database** drop down, select **juggybank** and then click **Next**.
65. In the **Select Source Tables and Views** window, **Destination** column, click on **[juggybank].[dbo].[jugg..]** entry to select it.
66. From the drop down box, select **[juggybank].[dbo].[userinfo]** and then click **Next**.
67. In the **Save, schedule, and replicate package** window, click **Next**.
68. In the **Completing the DTS Import/Export Wizard**, click **Finish**.
69. In the **DTS Import/Export Wizard** notification window, click **OK**.

70. In the **DTS Import/Export Wizard** notification window, click **OK**.
71. In the **Executing Package** window, click **Done**.
72. Right click on the **juggybank** database and select All Tasks|Import Data from the pop up menu.
73. In the **Data Transformation Services Import/Export Wizard**, click **Next**.
74. In the **Choose a Data Source** window, Data Source drop down, select **Text File**.
75. To the right of the File name: entry box, click the **navigation button**.
76. Navigate to **C:\sql\Data** and open the **juggybank-creditcard-data.txt** file.
77. In the **Choose a Data Source** window, click **Next**.
78. In the **Select file format** window, click **Next**.
79. In the **Specify Column Delimiter** window, click **Next**.
80. In the **Choose a destination** window, **Database** drop down, select **juggybank** and then click **Next**.
81. In the **Select Source Tables and Views** window, **Destination** column, click on **[juggybank].[dbo].[jugg..]** entry to select it.
82. From the drop down box, select **[juggybank].[dbo].[CreditCard]** and then click **Next**.
83. In the **Save, schedule, and replicate package** window, click **Next**.
84. In the **Completing the DTS Import/Export Wizard**, click **Finish**.
85. In the **DTS Import/Export Wizard** notification window, click **OK**.
86. In the **DTS Import/Export Wizard** notification window, click **OK**.
87. In the **Executing Package** window, click **Done**.
88. Expand the **juggybank** database and click on the **Tables** object.
89. Right click on the **CreditCard** table and select Open Table|Return All Rows from the pop up menu.
90. Ensure that the table has been populated and then close the table.
91. Right click on the userinfo table and select Open Table|Return All Rows from the pop up menu.

92. Ensure that the table has been populated and then close the table.
93. Close SQL Server Enterprise Manager.
94. Start|Administrative Tools|Data Sources (ODBC)
95. In the **ODBC Data Source Administrator**, click the **System DSN** tab.
96. In the ODBC Data Source Administrator System DSN tab, a System Data Source for the LocalServer using SQL Server should be displayed. If not, click Add, select SQL Server from the drivers list, and click Finish.
97. In the **Create a New Data Source to SQL Server** window, in the **Name:** entry box, type **juggybank**.
98. In the **Create a New Data Source to SQL Server** window, in the **Which SQL server do you want to connect to:** entry box, use the drop down to select **INSTRUCTOR** and then click **Next**.
99. In the **Create a New Data Source to SQL Server** window, in the “**How should SQL server verify the authenticity of the login ID?**”, select “**With SQL server authentication using a login ID and password entered by the user.**”
100. In the **Create a New Data Source to SQL Server** window, in the **Login ID** entry box, remove any entry, type **sa** and then click **Next**.
101. In the **Create a New Data Source to SQL Server** window, in the **Change the default database to** drop down, select **juggybank** from the list and then click **Next**.
102. In the **Create a New Data Source to SQL Server** window, click **Finish**.
103. In the **ODBC Microsoft SQL Server Setup** window, click on **Test Data Source**.
104. In the **SQL Server ODBC Data Source Test** window, click **OK**.
105. In the **ODBC Microsoft SQL Server Setup** window, click **OK**.
106. In the **ODBC Data Source Administrator** window, click **OK**.
107. Open Internet Explorer.
108. In the Internet Explorer Address Bar, type **//localhost/sql** and press **ENTER**.
109. On the **http://localhost/sql** directory page, click on **client.htm**.
110. On the JuggyBank website page, scroll down until the Login and Password entry boxes are visible.

111. In the **Login entry** box, type **baduser**
112. In the **Password entry** box, type **password** and click on the **Submit** button.
113. If the AutoComplete dialog appears asking you if you want Windows to remember this password, click in the check box to the left of “**Don't offer to remember any more passwords**” and click **No**.
114. You are redirected to <http://localhost/sql/badlogin.asp> and informed that Access is Denied.
115. Click the Back button in Internet Explorer to return to the JuggyBank Login page.
116. In the Login entry box, type **joker**
117. In the Password entry box, type **joker** and click on the Submit button.
118. You are redirected to <http://localhost/sql/ebanking.asp> and the account information for Francis Q. Demo is displayed.
119. Close the JuggyBank web page to return to the Desktop.

CT#11: Install Adobe Acrobat Reader

1. Open the CEH folder on the Desktop.
2. Open the Module 00 – Miscellaneous folder.
3. Open the Adobe Reader folder.
4. Double click on AcroReader51_ENU.exe to begin the installation.
5. Complete the install by choosing defaults throughout the installation process.
6. Alternatively, you can also install the latest Acrobat Reader from Adobe website.

CT#12: Install WinZip v8.1

1. Open the CEH folder on the Desktop.
2. Open the Module 00 – Miscellaneous folder.

3. Double click on winzip81.exe to begin the installation.
4. In the WinZip 8.1 SR-1 Setup window, click **Setup**.
5. Complete the install by choosing defaults throughout the installation process. Note: Choose “Classic” when asked which interface you want to use as the default.
6. After completing the install, the **WinZip Tip of the Day** window automatically opens. From the drop down box in the lower left corner of the window, select **Never show tips at startup** and then click **Close**.
7. Close the WinZip application.

CT#13 Install Command Prompt Here shell extension

1. Open the CEH folder on the Desktop.
2. Open the Module 00 – Miscellaneous folder.
3. Right click on **DOSHERE.inf**
4. Select **Install** from the pop up menu.

CT#14: Configure Windows Explorer

1. Start|Windows Explorer.
2. In the Windows Explorer Menu, click **Tools** and select **Folder Options** from the drop down menu.
3. In the Folder Options window, click the **View** tab.
4. In the **Advanced Settings** window, under Hidden files and folders, select **Show hidden files and folders**, unselect Hide extensions for known file types and unselect Hide protected operating system files (Recommended) and then click **OK**.

CT#15: Install CEH Wallpaper

1. Open Internet Explorer and point to <http://www.eccouncil.org/classroom/background.jpg>
2. Right click on the image and select **Save Picture As** from the pop up menu.
3. In the **Save Picture** window, click **Save**.
4. Close Internet Explorer.
5. On the Desktop, right click and select properties from the pop up menu.
6. In the Display Properties window, click on the Desktop tab.
7. On the Desktop tab, click the **Browse** button.
8. In the Browse window, select **background.jpg** and click **Open**.
9. In the **Display Properties** window, click **Apply** and then **OK**.

CT#16: Install Windows 2000 Server as a guest operating system

1. Insert the Windows 2000 Server STD compact disc into the CD-ROM drive.
NOTE: If your computer can start from the CD-ROM drive, restart the computer. If the “Press any key to boot from CD” message appears, press SPACEBAR and then proceed to step 5.
2. Start the computer using an MS-DOS system disk.
3. At the command prompt, type: **x:\i386\winnt /s:x:\i386** (where x is the letter assigned to the CD-ROM drive), and press **ENTER**.
4. When Setup indicates that the MS_DOS portion of Setup is complete, remove any disk from the floppy disk drive, and then press **ENTER**.
5. On the Setup Notification screen, press **ENTER**.
6. When the Windows 2000 Licensing Agreement appears, press **F8** to accept the licensing terms.
7. Setup displays a list of existing partitions and unpartitioned space.
8. In the list of existing partitions, select C: FAT32 and press **ENTER**.
9. In the Windows 2000 Server Setup screen, choose to **convert the partition to NTFS** and press **ENTER**.

10. If Setup notifies you that converting the partition to NTFS will make the drive unusable by other operating systems, press **C** to convert the drive to NTFS.
11. Setup examines the hard disk and then copies files to the Windows 2000 installation folders.
12. When Setup prompts you to restart the computer, leave the compact disc in the CD-ROM drive.
13. The computer restarts. Setup converts drive C: to NTFS, and then the computer restarts a second time.
14. After the computer restarts, the Windows 2000 Server Setup wizard appears and begins the GUI installation process.
15. On the **Regional Settings** page, click **Next**.
16. On the **Personalize Your Software** page, in the **Name** box, type **CEH**.
17. In the **Organization** box, type **EC Council** and then click **Next**.
18. On the **Your Product Key** page, type the Product Key for your organization's copy of Windows 2000 Server (STD), and then click **Next**.
19. On the **Licensing Modes** page, in the **Number of concurrent connections** box, type **50** and then click **Next**.
20. On the **Computer Name and Administrator Password** page, in the **Computer Name** box, type **W2KI**.
21. In the **Administrator password** and **Confirm password** boxes, type **password** and then click **Next**.
22. In the **Windows 2000 Components** page, click **Next**.
23. On the **Date and Time Settings** page, adjust the date, time, and time zone on your computer to conform to that of the local area, and then click **Next**.
24. The **Networking Settings** page appears, informing you that Windows 2000 Server is installing networking components and then prompting you to choose typical or custom network settings.
25. Click **Typical Settings** and click **Next**.
26. On the **Workgroup or Computer Domain** page, click **Next** to join the default workgroup.
27. When the **Completing Windows 2000 Setup** page appears, click **Finish**.

28. Once the restart has completed, log on as Administrator with a password of **password**.
29. In the **Windows 2000 Configure Your Server** dialog, select **I will configure this server later**, and then click **Next**.
30. In the **Configure Your Server** dialog, unselect **Show this screen at startup and** then **close** the Configure Your Server window.
31. Close the **Manage Your Server** window.
32. Press <**CTRL**>+<**ALT**> to release cursor.
33. In the VMWare menu, click **VM** and select **Install VMWare tools** from the pop up menu.
34. In the **W2K – Virtual Machine** dialog box, click **Install**.
35. In the **Welcome to the installation wizard for VMWare Tools** window, click **Next**.
36. In the **Setup Type** window, click **Next** as Typical is already selected.
37. In the **Ready to Install the Program** window, click **Install**.
38. If the VMWare Tools Installation dialog appears informing you that hardware acceleration is not enabled, click **Yes** and follow the directions provided in HWAccel.txt to modify the hardware acceleration settings.
39. In the **Installation Wizard Completed** window, click **Finish**.
40. In the VMWare **Tools** window, click **Yes** to restart the VM.
41. After the VM has restarted, log on as Administrator with a password of password.
42. Right click on the **Desktop** and choose **Properties** from the pop up menu.
43. In the **Display Properties** window, click the **Settings** tab.
44. In the **Display Properties** window, **Settings** tab, **screen area** section, move the slider until the screen area is **600 x 800** pixels, then click **Apply**.
45. If the **Display Properties** dialog opens, informing you that your display settings are about to be applied, click **OK**.
46. In the **Monitor Settings** dialog, click **OK**.

47. If the **Monitor Settings** dialog opens, asking if the settings are correct, click **OK**.
48. In the **Display Properties** window, click **OK**.
49. Click **Start** and select **Shut Down** from the menu.
50. In the **Shutdown Windows** window, select **Shut Down** from the drop down box and then click **OK**.
51. If the **W2K – Virtual Machine** dialog appears asking if you want to Just Power Off or Take a Snapshot, choose **Take a Snapshot**.
52. Installation and configuration of the Windows 2000 Server VMWare guest operating system is now complete. Return to CT#5a to install additional VMWare guest operating systems.

CT#17: Install Windows XP as a guest operating system

1. Insert the Windows XP Professional compact disc into the CD-ROM drive.
NOTE: If your computer can start from the CD-ROM drive, restart the computer. If the “Press any key to boot from CD” message appears, press SPACEBAR and then proceed to step 5.
2. Start the computer using an MS-DOS system disk.
3. At the command prompt, type: **x:\i386\winnt /s:x:\i386** (where x is the letter assigned to the CD-ROM drive), and press **ENTER**.
4. When Setup indicates that the MS_DOS portion of Setup is complete, remove any disk from the floppy disk drive, and then press **ENTER**.
5. On the Setup Notification screen, press **ENTER**.
6. When the Windows XP Professional Licensing Agreement appears, press **F8** to accept the licensing terms.
7. Setup displays a list of existing partitions and unpartitioned space.
8. In the list of existing partitions, select C: FAT32 and press **ENTER**.
9. In the Windows XP Professional Setup screen, choose to **convert the partition to NTFS** and press **ENTER**.

10. If Setup notifies you that converting the partition to NTFS will make the drive unusable by other operating systems, press **C** to convert the drive to NTFS.
11. Setup examines the hard disk and then copies files to the Windows 2000 installation folders.
12. When Setup prompts you to restart the computer, leave the compact disc in the CD-ROM drive.
13. The computer restarts. Setup converts drive C: to NTFS, and then the computer restarts a second time.
14. After the computer restarts, the Windows XP Professional Setup wizard appears and begins the GUI installation process.
15. On the **Regional and Language Options** page, click **Next**.
16. On the **Personalize Your Software** page, in the **Name** box, type **CEH**.
17. In the **Organization** box, type **EC Council** and then click **Next**.
18. On the **Your Product Key** page, type the Product Key for your organization's copy of Windows XP Professional, and then click **Next**.
19. On the **Computer Name and Administrator Password** page, in the **Computer Name** box, type **XPI**.
20. In the **Administrator password** and **Confirm password** boxes, type **password** and then click **Next**.
21. On the **Date and Time Settings** page, adjust the date, time, and time zone on your computer to conform to that of the local area, and then click **Next**.
22. The **Networking Settings** page appears, informing you that Windows XP Professional is installing networking components and then prompting you to choose typical or custom network settings.
23. Click **Typical Settings** and click **Next**.
24. On the **Workgroup or Computer Domain** page, click **Next** to join the default workgroup.
25. If the **Display Settings** dialog appears, informing you that your display settings will be automatically adjusted, click **OK**.
26. When the **Monitor Settings** dialog appears informing you that your display settings have been adjusted, click **OK**.
27. When the **Completing Windows XP Professional Setup** page appears, click **Finish**.

28. Once the restart has completed, log on as Administrator with a password of **password**.
29. If the **Display Settings** balloon appears, informing you that your display settings need adjustment, Close the balloon.
30. Press <**CTRL**>+<**ALT**> to release cursor.
31. In the VMWare menu, click **VM** and select **Install VMWare tools** from the pop up menu.
32. In the **XPI – Virtual Machine** dialog box, click **Install**.
33. In the **Welcome to the installation wizard for VMWare Tools** window, click **Next**.
34. In the **Setup Type** window, click **Next** as Typical is already selected.
35. In the **Ready to Install the Program** window, click **Install**.
36. If the VMWare Tools Installation dialog appears informing you that hardware acceleration is not enabled, click **Yes** and follow the directions provided in HWAccel.txt to modify the hardware acceleration settings.
37. In the **Installation Wizard Completed** window, click **Finish**.
38. In the VMWare **Tools** window, click **Yes** to restart the VM.
39. After the VM has restarted, log on as Administrator with a password of password.
40. When the **Display Settings** balloon appears, informing you that your display settings need adjustment, click **OK**.
41. If the **Display Properties** dialog opens, informing you that your display settings are about to be changed, click **OK**.
42. If the **Monitor Settings** dialog opens, asking if the settings are correct, click **OK**.
43. Click **Start Shut Down Computer** from the menu.
44. In the **Turn Off Computer** window, click **Turn Off** from the drop down box and then click **OK**.
45. If the **XPI – Virtual Machine** dialog appears asking if you want to Just Power Off or Take a Snapshot, choose **Take a Snapshot**.
46. Installation and configuration of the Windows XP Professional VMWare guest operating system is now complete. Return to CT#5a to install additional VMWare guest operating systems.

CT#18: Install Fedora Core as a guest operating system

1. Double click on the VMWare Workstation shortcut on the Desktop.
2. On the VMWare **Menu**, click **File**▸**New**▸**Virtual Machine**.
3. In the **Welcome to the New Virtual Machine Wizard**, click **Next**.
4. In the **Select the Appropriate Configuration** window, select **Custom** and then click **Next**.
5. In the **Select a Virtual Machine Format** window, click **Next** as New – Workstation 5 is already selected.
6. In the **Select a Guest Operating System** window, **Guest operating system** section, select **Linux**.
7. In the **Select a Guest Operating System** window, **version** drop down box, select RedHat Linux and then click **Next**.
8. In the **Name the Virtual Machine** window, **Virtual machine name** box, type **LINI** and then click **Next**.
(h)In the **Processor Configuration** window, click **Next**.
9. In the **Memory for the Virtual Machine** window, click **Next**.
10. In the **Network Type** window, click **Next**.
11. In the **Select I/O Adapter Types** window, click **Next**.
12. In the **Select a Disk** window, click **Next**.
13. In the **Select a Disk Type** window, select **IDE** and then click **Next**.
14. In the **Specify Disk Capacity** window, click **Next**.
15. In the **Specify Disk File** window, click **Finish**.
16. In the virtual machine tab, **Commands** section, click **Edit virtual machine settings**.

17. Click the **Options** tab.
18. In the **Options** tab, **Settings** window, click on **Snapshots**.
19. In the **Options** tab, **When powering off** section, click **Ask me** and then click **OK**.
20. In the virtual machine tab, **Commands** section, click **Start this virtual machine**.
21. Immediately after the virtual machine's window turns black and the VMWare logo appears in the window, **click** on the VMWare **logo** to set the cursor focus inside the virtual machine and then press **F2** to enter the BIOS setup options.
22. In the **PhoenixBIOS Setup Utility**, use the arrow keys on the keyboard to move to the **Boot** section of the utility.
23. Use the **down arrow key** on the keyboard to select **CD-ROM** drive.
24. Press the plus (+) key on the keyboard **to move CD-ROM to the top of the list** and then press the **F10** key.
25. Insert Fedora Core Disk 1 into the CD-ROM drive and start the virtual machine.
26. When the Fedora Core text splash screen appears, click inside the virtual machine, and then press **ENTER**.
27. When the CD Found screen appears, use the arrow keys to select **Skip**.
28. When the Fedora logo screen appears, click **Next**.
29. In the language selection window, English is selected by default. Click **Next**.
30. In the keyboard selection window, U.S. English is selected by default. Click **Next**.
31. When the **Warning** dialog appears, informing you that the partition table on the device is unreadable and must be initialized, click **Yes**.
32. In the partitioning window, click the **up and down arrows** at the right of the selection box that appears after the introductory paragraph.
33. From the selection menu, choose "**Remove all partitions on selected drives and create default layout**" and then click **Next**.

34. In the **Warning** window, click **Yes**.
35. In the **Network Devices** section, click the **Edit** button.
36. In the **Edit Interface eth0** window, unselect **Use dynamic IP configuration (DHCP)**.
37. In the **Edit Interface eth0** window, unselect **Enable Ipv6 support**.
38. In the **IPv4 Address** box, type **10.0.0.3**.
39. In the **IPv4 Prefix (Netmask)** box, type **255.255.255.0** and then click **OK**.
40. In the **Hostname** section, select **manually** and in the box to the right, enter **LINI**.
41. In the **Miscellaneous Settings** section, **Gateway** box, type **10.0.0.254**.
42. In the **Primary DNS** and **Secondary DNS** boxes, enter the **IP addresses** of the primary and secondary DNS servers **used** for the class and then click **Next**.
43. In the **time and timezone** window, use the up and down arrows to select the proper time zone for the computer and then click **Next**.
44. In the **root password** window, enter “**password**” (without quotes) in the **root password** box **and** again in the **confirm** box and then click **Next**.
45. In the **additional software** window, click **Next**. Packages and dependencies will be verified.
46. In the **begin installation** window, click **Next**.
47. In the **Required Install Media** window, click **Continue**.
48. When the **Change CDRom** window appears, remove Fedora Core CD-ROM #1 from the CD-ROM tray, **insert** Fedora Core **CD-ROM #2** and then press **OK**.
49. When the installation has finished, click **Reboot**.
50. In the Fedora **Welcome** screen, click **Forward**.
51. In the **License Agreement** window, click **Yes. I agree to the License Agreement** and then click **Forward**.

52. In the **Firewall** window, click the up and down arrows, select **disabled** and then click **Forward**.
53. If an untitled dialog appears informing you that clicking “Yes” overrides existing firewall configurations, click **Yes**.
54. In the **SE Linux** window, click the up and down arrows, select **Permissive** and then click **Forward**.
55. In the **Date and Time** window, set the date and time to that of the local area, then click **Forward**.
56. In the **Create User** window, click **Forward**.
57. In the **untitled warning** window, click **Continue**.
58. If the computer is equipped with a Sound Card, the **Sound Card** window will appear. Make any changes necessary and then click **Finish**.
59. In the Fedora logon screen, enter the user name **root** and then press **ENTER**.
60. In the Fedora logon screen, enter the password **password** and then press **ENTER**.
61. On the upper Panel, click **Applications** and then select **Accessories --> Terminal** from the drop down menus.
62. In the root@LINI:~ terminal window, type **shutdown -h now** and then press **ENTER**.
63. Configuration of the Fedora Core Linux system is now complete.

CT#19: Install/Configure Dynamic Host Configuration Protocol (DHCP)

Install Dynamic Host Configuration protocol (DHCP)

1. Click on Start|Control Panel|Add or Remove Programs.
2. In the **Add or Remove Programs** window, click on **Add/Remove Windows Components**.

3. In the **Windows Components Wizard** page, scroll to **Networking Services**.
4. Select Networking Services by clicking on the words. Do not click in the check box to the left of Networking Services.
5. Click **Details**.
6. Click the check box to the left of **Dynamic Host Configuration Protocol (DHCP)** to select.
7. Click **OK** and then click **Next**.
8. When the **Optional Networking Components** dialog appears informing you that the computer has a dynamically assigned IP address, click **OK** to assign a static IP address to the Instructor computer.
9. In the **Local Area Connection Properties** window, click on **Internet Protocol (TCP/IP)** to select it and then click **Properties**.
10. In the **Internet Protocol (TCP/IP) Properties** window, **General** tab, click on **Use the following IP address:** and enter the following information:
 - IP Address: **10.0.0.250**
 - Subnet Mask: **255.255.255.0**
 - Default Gateway: **10.0.0.254**
11. In the **Internet Protocol (TCP/IP) Properties** window, **General** tab, click on **Use the following DNS server addresses:** and enter the IP addresses of your external DNS servers.
12. Click **OK**.
13. In the **Local Area Connection Properties** window, click **Close**.
14. When the **Completing the Windows Components Wizard** page appears, click **Finish**.
15. Close the **Add or Remove Programs** window.

Configure Dynamic Host Configuration Protocol (DHCP)

1. Click on Start|Administrative Tools|DHCP.

2. In the **DCHP** window, expand **instructor [10.0.0.250]** icon.
3. Right click on the **instructor [10.0.0.250]** icon and select **New Scope** from the pop up menu.
4. In the **Welcome to the New Scope Wizard** window, click **Next**.
5. In the **Scope Name** window, in the **Name** box, type **CEH** and then click **Next**.
6. In the IP Address Range window, **Start IP address** box, type **10.0.0.20**.
7. Press TAB to move the cursor to the **End IP Address** box and type **10.0.0.199**.
8. Press TAB to move the cursor to the **Length** box and type **24**. The subnet mask box will automatically display the subnet mask of 255.255.255.0.
9. Click **Next**.
10. In the **Add Exclusions** window, click **Next**.
11. In the **Lease Duration** window, click **Next**.
12. In the **Configure DHCP Options** window, click **Next**.
13. In the **Router (Default Gateway)** window, in the IP address box, type **10.0.0.1**, then click on **Add** and **Next**.
14. In the **Domain Name and DNS Servers** window, click in the IP address box, type the IP address of your primary DNS server and click **Add**.
15. In the **Domain Name and DNS Servers** window, click in the IP address box, type the IP address of your secondary DNS server, click **Add** and then **Next**.
16. In the **WINS Servers** window, click **Next**.
17. In the **Activate Scope** window, click **Next**.
18. In the **Completing the New Scope Wizard** window, click **Finish..**
19. Close the DHCP window.

CT#20: Install Microsoft Office components

Note: This setup guide shows how to install the required components of Office 2000. Installation of Office XP or office 2003 components will be similar.

1. Insert the Office 2000 CD into the CD-ROM drive.
2. If the Windows Installer does not start automatically, open Windows Explorer, navigate to the root of the CD-ROM drive, and click on setup.exe.
3. When the Welcome to Microsoft office 2000 window appears, click **Next** as the user name and organization fields are already populated.
4. In the Microsoft Office 2000 End-User License Agreement window, click **I accept the terms in the License Agreement** and click **Next**.
5. In the **Microsoft Office 2000: Ready to Install** window, click **Customize**.
6. In the **Microsoft Office 2000 Installation Location** window, click **Next**.
7. In the **Microsoft Office 2000: Selecting Features** window, click on the disk icon to the left of **Microsoft Word** and select **Run from My Computer** from the pop up menu.
8. In the **Microsoft Office 2000: Selecting Features** window, click on the disk icon to the left of **Microsoft Excel** and select **Run from My Computer** from the pop up menu.
9. In the **Microsoft Office 2000: Selecting Features** window, click on the disk icon to the left of **Microsoft PowerPoint** and select **Run from My Computer** from the pop up menu.
10. In the **Microsoft Office 2000: Selecting Features** window, click on the disk icon to the left of **Microsoft Outlook for Windows** and select **Not Available** from the pop up menu.
11. In the **Microsoft Office 2000: Selecting Features** window, click on the disk icon to the left of **Microsoft Access** and select **Not Available** from the pop up menu.
12. In the **Microsoft Office 2000: Selecting Features** window, click on the disk icon to the left of **Microsoft FrontPage** and select **Not Available** from the pop up menu.
13. Do not make any changes to Office Tools and Converters and Filters icons and click **Install Now**.
14. When setup has completed, and the **Microsoft Office 2000 Setup** window appears, click **OK**.

Remove the default “Internet Explorer Enhanced Security Configuration” utility

1. Click Start → Control Panel → Add / Remove Programs
2. Click **Add/Remove Windows Components**
3. Windows Configurations Wizard is shown
4. Scroll down and uncheck **Internet Explorer Enhanced Security Configuration**
5. Click **Next**
6. Click **Finish**

Disable DEP in Control Panel

1. Click Start → Control Panel → System
2. Click **Advanced**
3. Click **Settings** button
4. Click the radio button Remove the default “**Internet Explorer Enhanced Security Configuration**” utility
5. Click **OK**
6. Click **OK** to close the System Properties Window

Install Firefox Browser

1. Visit the website <http://www.mozilla.com/firefox>
2. Follow the instruction on the screen to download and install Firefox Browser

Install Microsoft ISA Server

1. Using Microsoft Small Business Server CD-ROM, install the ISA with all default settings

End of Document