

Lab Setup for Guide to Networking Essentials 6E

The Hands-On Projects in this book are intended to reinforce concepts about computer networking that students learn while studying the chapter material. Many projects require students to have administrative access to their computer. Since many classrooms are shared with other classes, it is highly recommended that you use virtualization so students can have administrative control over their virtual machine without affecting the host operating system. Chapter 8 and Appendix E discuss some of the available virtualization software packages. VMWare Player is highly recommended as it is a free, robust, solution for creating and running virtual machines. But, Virtual PC from Microsoft and the open source VirtualBox are also fine products.

The author of Guide to Networking Essentials, 6th Edition not only wrote the book, he uses it in his own classrooms. You can find lab notes, teaching tips, errata, updates, and news on his web site at books.tomsho.com. You can also submit comments and suggestions.

Classroom Computers – One per student (these can be virtual machines)

- Used for the majority of Hands-on Projects and Challenge labs
- Windows 7 Enterprise, Professional, or Ultimate is preferable
- A second partition or hard drive formatted NTFS of at least 1.5 GB and assigned as D:
- A second (or third, if D: is a separate drive from C:) unallocated drive.
- Computer Name: NET-XX where XX is a number assigned to each student
- Workgroup name: NetEss
- IP address via DHCP initially (static addresses will also work)
- Students perform a Hands-On Project in Chapter 5 that has them set their IP address configuration to 192.168.100.XX/24. The instructor will need to provide students with a valid default gateway address and DNS server address that works with this configuration or provide alternate address values.
- Valid router and DNS server configured with Internet access
- Administrator account named NetAdmin with password of Password01 ; password set to never expire

Instructor Computer (can be a virtual machine)

- Same as student computer except:
- Computer name: Net-instr
- Shared folder named NetDocs allowing NetAdmin Read and Change sharing permissions and Modify NTFS permissions
- User account name NetAdmin with password Password01

Separate Lab Computers (must be physical computers)

- Used for the following Hands-on Projects: 1-2, 2-2, 2-3, 2-4, 2-5, 2-7
- Minimum 3 computers (students can work in groups with each group having 3 computers or instructors can do labs that require these computers as a demonstration)
- Windows 7 preferable (projects are written for Windows 7; Vista or XP can be substituted with altered instructions)
- Wireshark installed
- 10/100 Ethernet NICs to install (USB is okay)

Networking Equipment

- Two 10/100 hubs (minimum 4 ports)
- Two 10/100 switches (minimum 4 ports)
- One wireless access point/router 802.11 B, G, or N with at least WPA support (Linksys WRT54GL or similar preferred); SSID set to NetEss initially and no security protocols enabled
- 802.11 B, G, or N NICs (USB is okay) with at least WPA support
- 4 patch cables, 1 crossover cable

Additional Tools/Software

- Network diagram software such as Visio (optional)
- A Linux Live CD, or a computer or virtual machine with Linux installed – Ubuntu 10.4 is used in the projects
- Windows Server 2008 (for Challenge Lab 12-1)
- A shared printer for students to connect to (optional)
- Wireshark – to be downloaded/installed by students to classroom computer; or can be pre-installed
- NetInfo — to be downloaded/installed by students to classroom computer; or can be pre-installed
- Simple Server Monitor — to be downloaded/installed by students to classroom computer; or can be pre-installed
- RJ45 Crimper
- Punch-down tool
- Cable stripper/cutter
- Cat 5e or better patch panel(s) for punching down
- Cat 5e jacks for punching down (optional)
- Cat 5e or better cable
- RJ45 plugs (4 per student minimum if patch and crossover cable is made)