Study guide by ExamNotes.net

CIW exam 1D0-450 Server Administrator

Test Information: Prerequisites: (As per Prosoft)

CIW Server Administrator is a prerequisite for CIW Internetworking and Security Professional Exams, as well as CIW Master Administrator

Exam Information

The 1D0-450 exam is comprised of two modules. To achieve a passing score on the exam, the candidate must score at least 75% overall, and 70% on each module. The modules are:

- Internet System Management
- Advanced Internet System Management

The exam includes single answer multiple-choice questions.

Note: Although content available indicates that there is content covered in the course, the candidate is ultimately responsible for learning the content and achieving a passing score on the exam

After meeting all prerequisites and passing this Exam you will be awarded the **CIW (P)** or CIW Professional certification.

Study Tips: This test will require a good and thorough knowledge of IIS and the Web Server Environment. There is much covered in the courseware and it is your best bet for studying. Some Questions may not be able to be answered with having gone through the actual courseware. Also, Please remember: these notes are covering bulleted information and difficult concepts and by no means is your only way to pass this test. Please use these notes to supplement your studies and If you can - use the actual courseware - it will be your best bet.

Main Testing Objectives:

CIW Main Page and Objectives: here

As per CIW - these are the skill being measured.

- Review types of services offered by IT departments, including FTP, Telnet, HTTP, SMTP, POP3, and IMAP.
- Describe E-commerce servers.
- Understand the concepts of fault tolerance, server optimization, and backup.
- Understand capabilities and performance of a hardware device, including the CPU and the use of multiple CPU's.
- Perform systems configuration in Windows NT and Linux.
- Define and describe network access control.
- Implement a Windows NT domain.
- Configure Apache Server.
- Configure Internet Information Server.
- Implement Network Security.
- Implement an e-mail system in Windows NT and UNIX.
- Manage and tune corporate Internet and intranet infrastructure
- Monitor Web server systems
- FTP, news and mail servers
- Configure and deploy e-business solutions servers.

Exam Notes:

Internet System Management

Internet System Installation and configuration

Hardware:

- NIC Card Types - Ethernet (10Mbps), Fast Ethernet (100Mbps), Gigabit Ethernet, Token Ring, and 100VG-AnyLAN (100)
- RAID levels: 0 = no redundancy / fault tolerance, 2 drives, striping. RAID 1 is fault tolerant. NO striping but mirroring / duplexing. RAID 5 is striping with Fault tolerance - 3 drives.
- Backups - FULL / INCREMENTAL / DIFFERENTIAL
- Do not mix Incremental and Differential and know that Incremental will use the most tapes.
- Hard Drive considerations - Vendor, Size, Search Speed, Access Speed, Caching and Buffers
- CPU Types - CISC and RISC (Multiple CPU's - SMP)

Basic Networking:

- OSI:

Application
Presentation
Session
Transport
Network
Datalink
Physical

- Bandwidth and Speed - T1 = 1.544 - a portion is called a Fractional T1
- T2 (equivalent to 4 T1 lines, bandwidth - 6.3Mbps) T3 = 44.736 Mbps
- E1 = 2.048, E2 = 8.448, E3 = 34.368, E4 = 139.264, E5 = 565.148 Mbps
- ISDN - Integrated Services Digital Network - BRI = 2 B + 1 D (B=64 each and D=16) PRI - Divides a full T1 - into 24 channels (23 B's + 1 D - D=64)
- DSL - Digital Subscriber Line - Signal Degradation is a limitation.
- To determine a connection speed - use this formula:
- *Download Time = File Size / Connection speed*
- Know how to mathematically calculate and Evaluate Throughput to determine your necessary bandwidth

Operation System Types:

- Microsoft - Windows 3.x / NT / 2000
- Unix = Shell types -sh / ksh / csh / bash
- X-Windows = KDE / GNOME / OPENWINDOWS / AnotherLevel / CDE
- Novell Netware = Uses IPX/SPX and as of version 5.x - uses TCP/IP as well
- Uses NDS - Directory services.

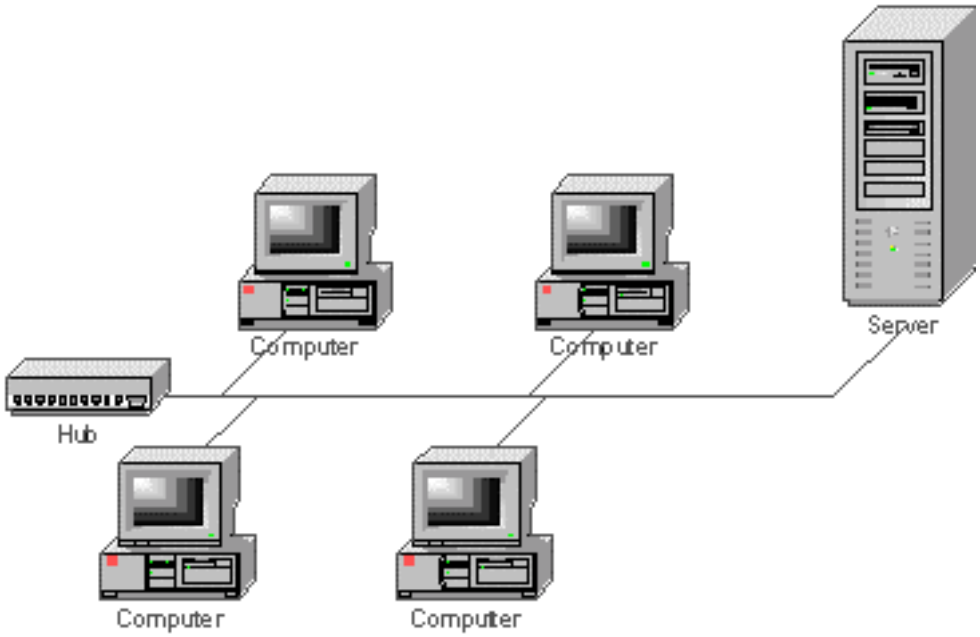
Dual Boot - Know how to set up a dual boot situation, know about LILO - the Linux Loader.

Know when preparing to so installs, look at the HCL - Hardware Compatibility List

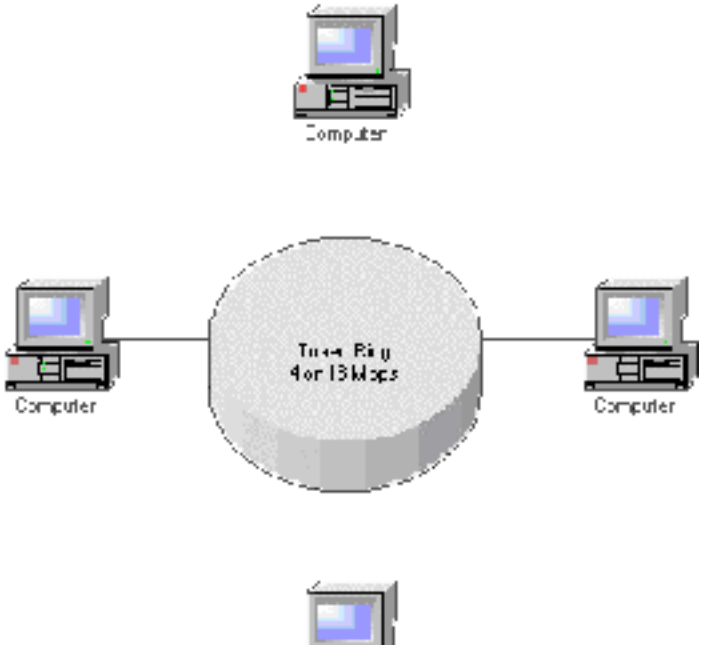
Basic topology:

- Bus, Star, Ring, Mesh
- Ethernet / Contention / CSMA/CD
- Mainframe - Polling
- Token Ring, 4 - 16 Mbps

Bus:



Ring:



Basic Configurations:

- TCP/IP - Addresses assigned Statically or Dynamically (DHCP)
- Basic configuration information: Computer name, IP Address, Subnet Mask, Default Gateway, DNS Info, DHCP Client Info, and WINS.
- Adapters and Drivers: to add a NIC to the server, you of course need drivers. Know how to replace drivers, and know that in Unix you need to recompile (old versions) or use Linux / *Loadable Kernel Modules*
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- To find out what your Static or Dynamic configuration is - use NT = IPCONFIG or you can use IPCONFIG /ALL - to release the current configuration you can type IPCONFIG / Release and to get a set back (if configured) IPCONFIG / renew
- Know how to configure NT's IP configuration - Remember **ISPAB** - for the top 5 tabs of the Network Properties Dialog box.
- Windows 9x will use WINIPCFG to view the current TCP/IP configuration
- Linux commands: ifconfig / ifup / ifdown / linuxconf / netcfg / dmesg

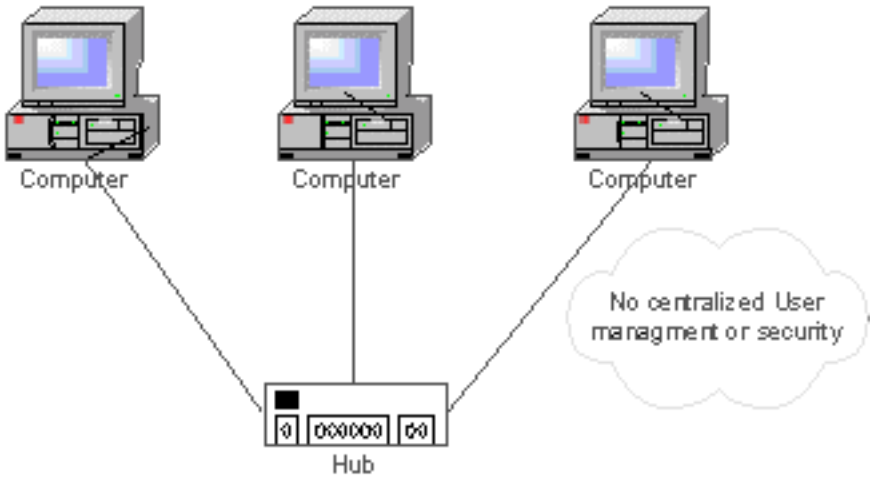
DHCP

- Dynamic Host Configuration Protocol
- Used to create a scope of addresses that clients can acquire at boot up dynamically and is convenient for many reasons to include, a lease period, uses can move around with more flexibility, and you can also add DNS and WINS information into the dynamically assigned scope. Also remember that you will need some kind of agent or helper address to traverse a router or get to a different segment.
- Remember DORA for the lease process

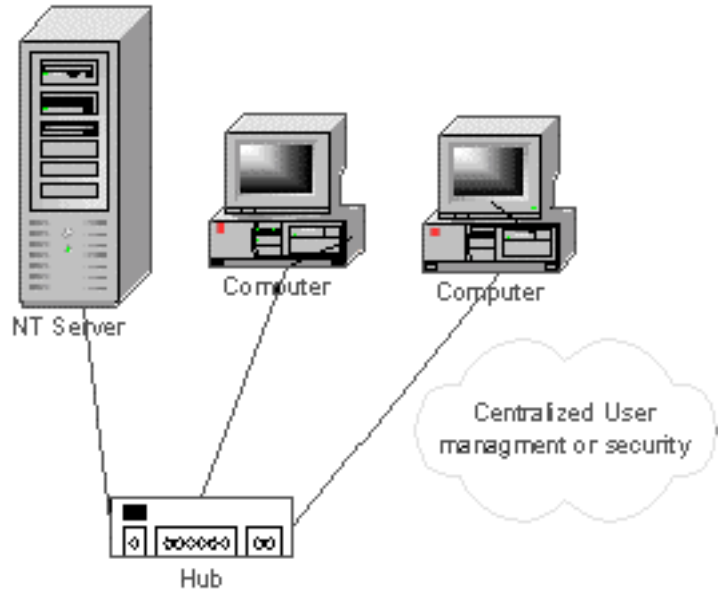
Levels of access:

Share level verses User Level

Share level or a peer-to-peer network environment is easily stated as an environment where there is no centralized user management or security. In a User level Environment, you need a server (with a SAM database) to handle the authentication and access issues. A peer-to-peer environment is decentralized. Workgroup: (Peer to Peer / Share Level Security)



Client/Server Model: (Domain Based / User Level Security)



Remember that is you want centralized management of users and groups you also need the NT server to be a Domain Controller.

Know how to set up a share in a Windows based environment - and how to set permissions on it. Know the difference between the Share Level Permissions and the granularity if User Level Permissions.

Shares and the ports they use: 135 (TCP) for RPC, UDP 137 and 138 and TCP 139

Logon accounts contain: User Name, Password, Group Associations, permissions and Other additional options like A Home Directory or Login Script. Know how to make a User account.

Local and Global Groups - you can add a Global to a local to access resources.

Prosoft courseware states Universal Permissions: Read, Write, Execute and Print.

NT access permissions: Full Control, Change, Read, No Access

NTFS Permissions: Read, Write, Execute, Delete, Change Permission and Take ownership.

Unix Permissions: (r) (w) (x) = Read, Write, Execute and (-) means denied.

Unix numerical Permissions:

- 7 - read, write, execute
- 6 - read, write
- 5 - read, execute
- 4 - read only
- 3 - write, execute
- 2 - write only
- 1 - Execute only
- 0 - access absent

Novell Rights: Supervisor, Read, Write, Erase, Modify, Create, File Scan, Access Control, No Access (Know how to set rights and how the Flow down the tree) Also verify that you are comfortable with an IRF - Inherited rights filter. Know that you should stay away from using equivalence to set your rights.

Novell: Uses NDS Manager to work with partitions and repair (GUI based) and NWADMIN (Netware Administrator) is where you can go to create objects and set rights - or perform most of your management needs.

Windows NT Management tools: Server Manager will allow you to manage all your machines on your network from one view - Server Manager will allow you to view PDC's, BDC's, Member servers and NT clients. You can Stop / Start services, manage shares establish alerts among other things. User Manager is a utility to manage your user accounts and Groups. You have User Manager and User Manager for Domains. You can select domains to manage and if you have the correct access, you can manage users and Groups from this console. The User Manager also allows you to set up auditing, set specific rights, Set Up Trusts (For Domains) and other things. Remember that you set up auditing here but use Event Viewer to look at your audited events. Event Viewer will allow you

to view audited events. 3 Categories: Security, Application and System level events.

In User manager - Be familiar with the settings that you can change when you create a user. Login Script / Home directory / Dial in options.

UNC path: \\Computername\sharename - can be used access a known share by name on a remote machine, but you have to know what your looking for. Use Network Neighborhood o view all participating machines on the Windows Network and what is shared out - Unless Hidden. Hidden Share created with a Dollar sign - $

2 default hidden shares: Admin$ / %systemroot% or Drive letter - Example: c$

NT Based Network Structure: Domain (Client/Server) and Workgroup (Peer to Peer)

Linux: User management - use /usr/sbin/useradd or /usr/sbin/adduser (or linuxconf)

Account Properties for Linux accounts: UID / GID / Home Directory and Password.

Important files to remember for Linux: (all Located in /etc) passwd, shadow, group and logon.defs

DNS - Domain Name System

Server Types: Root, Master, Primary, Secondary, Forwarding and caching

Record types: A, SOA, CNAME, MX, PTR, and NS are the most important one to remember. PTR = in-addr.arpa and IPv6 uses AAAA

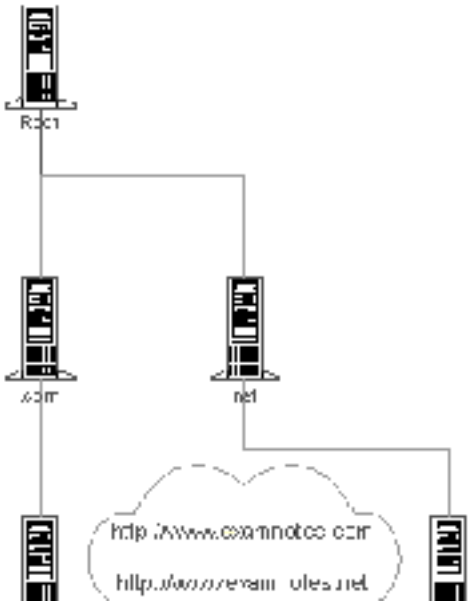
DNS Hierarchy levels: Root / Top Level / Second Level

Country Codes: Example - Switzerland uses .ch

Top Level: .com, .net, .mil, .org, .int, .gov, .edu

Example: (Enter the URL below)

http://www.examnotes.net

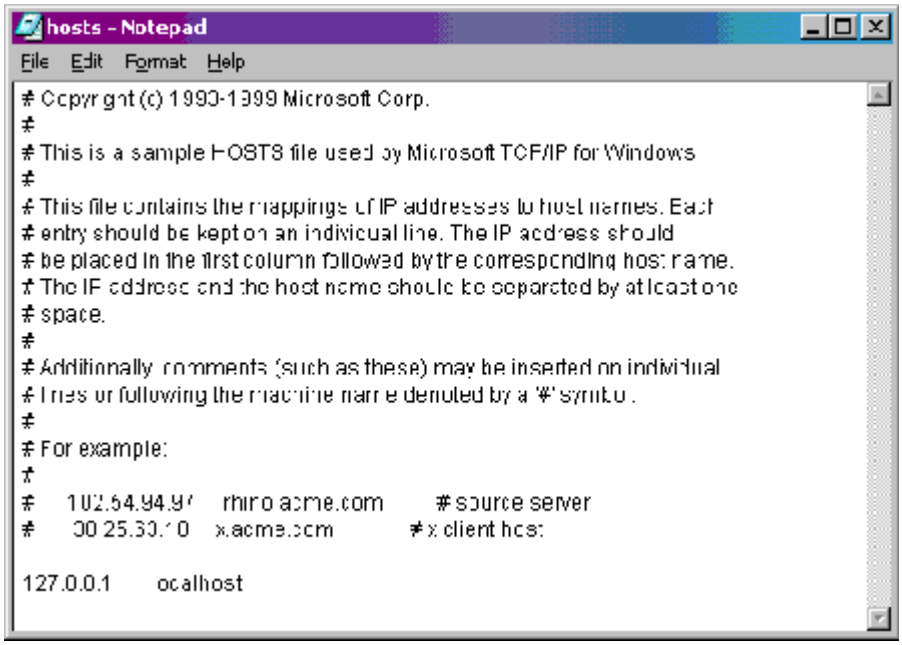


Note: Remember that the root is defined as a period but is not entered in the URL.

WINS and Samba: WINS - Windows Internet Naming Service

Wins resolution order: Local host name, HOSTS file, DNS server, Netbios name cache, WINS server, Broadcast, and LMHOSTS file SMB is Server Message Blocks. It is the protocol that Windows uses to communicate across a network for File and Print Sharing. Simply Put, SAMBA is the Unix version of SMB. This way Unix machines can participate in a Windows Environment with File A Print Sharing.

For both DNS and WINS - You can set up dedicated servers to perform the service or either Domain Name to IP or Netbios Name to IP resolution or you can set up Files to perform the resolution. If you use dedicated servers know how to configure your clients to access those servers. If you want to have local / client level resolution - you can define the entries "Statically" in the HOSTS and LMHOSTS files. HOST - DNS and LMHOSTS - WINS. Example HOSTS file:



Note: Notice that the loopback is defined statically.

FTP - File Transfer Protocol (Uses Ports 20 / 21)

FTP Commands: put, Mput, get, Mget.

Know how to use basic FTP commands to gain access to an FTP server and transport files back and forth.

Know for the Exam how to set up a FTP server on an IIS server. Know how to use the MMC and how to set up virtual directories and enable logging and set permissions. Always remember that in the Windows environment you need to set NTFS permissions as well.

Know how to set up anonymous access and know that you would prefer this because a Hacker can gain access to your network, Sniff your password, gain access to your FTP server - if that is the case you can isolate it to that server. Also set up logging. Make sure you have al applicable service packs and hot fixes applied to disable any known vulnerabilities.

Know how to use FINGER - this will allow you to gain info for a specific system.

Know on Unix boxes how to set up and edit the inetd.conf file and what it is used for.

Web Servers: IIS and APACHE

Note: You MUST be familiar with setting up A Web Server on the NT platform - IIS and using the option pack. You MUST know how to set up, configure and manage the MMC and all its options. To get Highly Detailed information that is free use the following free resources:

- Internet Information Services 5.0 Features
- Downloads for Microsoft Internet Information Services
- Deploying Microsoft IIS
- Resources for Supporting and Maintaining IIS
- IIS Support FAQs and Highlights
- Data Sheet for Internet Information Server 4.0
- Training and Certification for Microsoft Internet Information Services (IIS)
- IIS 4.0 Recommended Installation Procedure
- Microsoft Security Advisor

Lastly: You MUST have hands on experience with configuring web servers. You cannot skip this - that is what 75 percent of the courseware focuses on.

Also Be familiar with the APAHE web server: Use these free resources -

- APACHE FAQ's
- APACHE ORG
- APACHE and SSL

Final Tips: Your best bet for taking and passing this test is to have the courseware and work through all the labs provided. You really must have some hands on with this. Also - some questions are based on the courseware and they cant be answered anywhere else but from using that set of courseware. If you use these exam notes as your only study source you will be missing a great deal of information - use it as a supplement. The courseware covers about 400 pages of content in 2 volumes with over 50 labs. Make sure you are comfortable with what is contained within it. If you have any in depth questions feel free to email me for help.

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