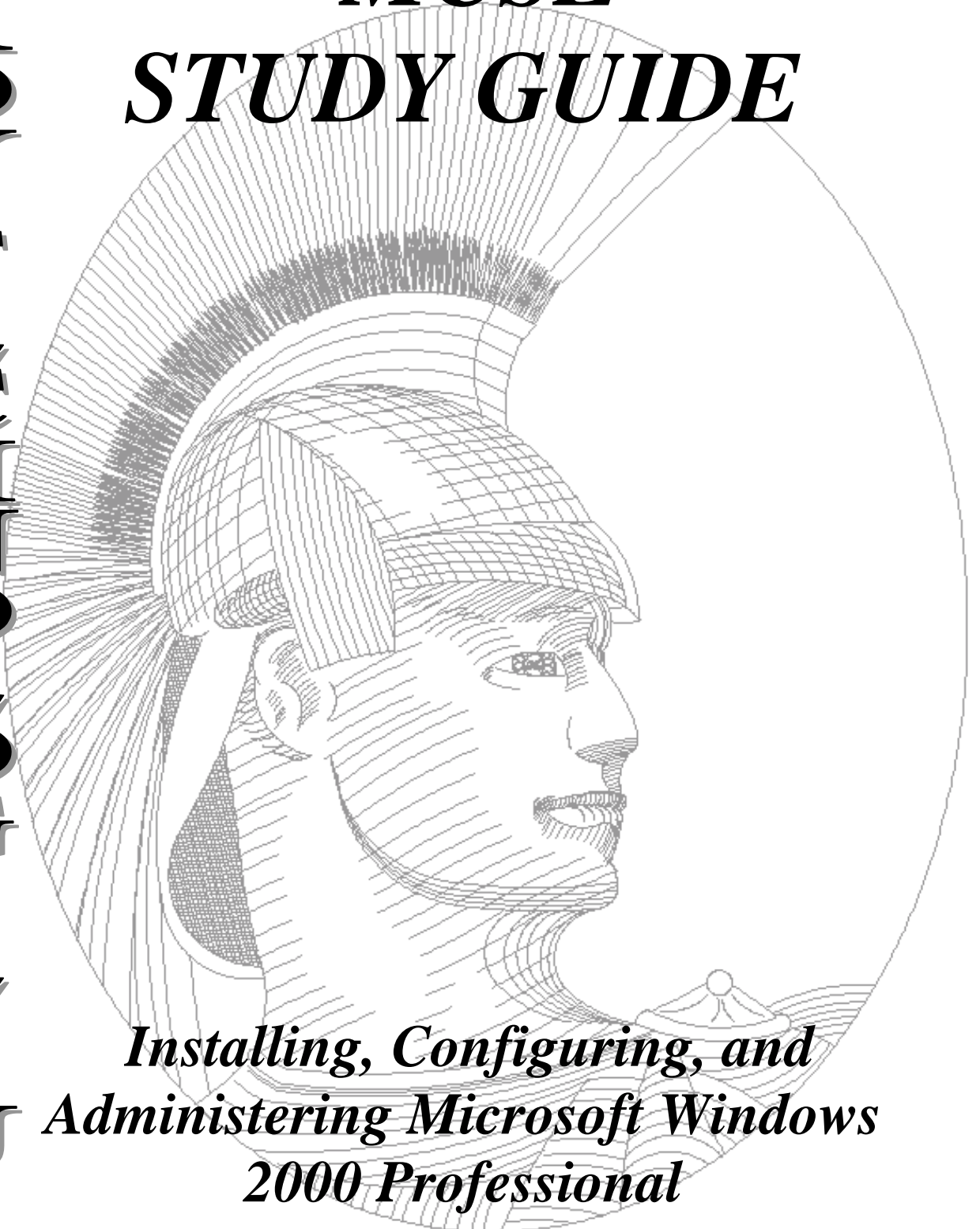


FROM THE AUTHOR OF
MCSE STUDY GUIDE
AND THE MICROSOFT
2000 PROFESSIONAL
EXAM 70-210

MCSE STUDY GUIDE



*Installing, Configuring, and
Administering Microsoft Windows
2000 Professional
Exam 70-210*

Edition 4

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Installing, Configuring and Administering Microsoft Windows 2000 Professional Concepts

Installing Windows 2000 Professional

Requirements:

(<http://www.microsoft.com/windows2000/upgrade/upgradereqs/default.asp>)

Windows 2000 Professional

133 MHz or higher Pentium-compatible CPU.

64 MB RAM minimum. 4 GB RAM maximum

2 GB hard disk with a minimum of 650 MB of free space. (Additional free hard disk space is required if you are installing over a network.)

Network Adapter Card

Video display adapter and monitor with VGA or higher resolution

Support for up to 2 processors.

Windows 2000 Server

133 MHz or higher Pentium-compatible CPU.

128 MB RAM minimum (4GB Maximum) 256 min recommended.

2 GB hard disk with a minimum of 1 GB of free space. (Additional free hard disk space is required if you are installing over a network.)

Network Adapter Card

Video display adapter and monitor with VGA or higher resolution

Support for up to 4 processors.

Windows 2000 Advanced Server

133 MHz or higher Pentium-compatible CPU.

128 MB RAM minimum (8GB Maximum) 256 min recommended.

2 GB hard disk with a minimum of 1 GB of free space. (Additional free hard disk space is required if you are installing over a network.)

Network Adapter Card

Video display adapter and monitor with VGA or higher resolution

Support for up to 8 processors.

Pre-Installation Activities:

Prior to installing Win2000, the following tasks must be performed:

- Ensure all hardware requirements are met.
- Determine if hardware is on the Hardware Compatibility List (HCL).
- Determine how you want to partition the hard disk where Win2000 will be installed.
- Choose a file system for the installation partition.
- Choose a licensing mode for a server that will be running Win2000.
- Identify whether the computer will join a domain or a workgroup.
- Run the Win2000 Upgrade Compatibility Verification tool.

Attended Installation:

Four stages of Setup: Setup Program, Setup Wizard, Installing Networking, Complete Setup.

1. Setup Program: Loads Setup program into memory. Starts text-based Setup program. Creates Win2000 partition. Formats partition. Copies setup files to hard disk. Reboots computer.
2. Setup Wizard: Graphical user interface for installation information (e.g. product key, names, passwords).
3. Install Windows Networking: Detection of adapter cards, installation of default networking components; Client for MS Networks, File and Printer Sharing for MS Networks and TCP/IP protocol. Join a workgroup or domain. Installation of components.
4. Complete Setup: Copy files. Configure the computer. Save the configuration. Removal of temporary files.

Installing from CD-ROM:

- Does not require floppies.
- To make boot floppies, type MAKEBOOT A: in the \bootdisk directory of the installation CD.
- If installing using a MS-DOS or Win95/98 boot floppy, run WINNT.EXE from the i/386 to begin Windows 2000 setup.

Installing over a Network:

- 685 MB minimum plus 100+ MB free hard drive space for temporary files created during installation.
- Create a Distribution Server with a file share containing the contents of the i/386 directory from the Windows 2000 CD-ROM.
- Boot the network client. Connect to the distribution server. Run WINNT.EXE. Boot from the Setup boot disks. Install Windows 2000. Run WINNT32.EXE if upgrading a previous version of Windows.

WINNT.EXE command line switches

Switch	Function
/a	Enables accessibility options.
/e:command	Specifies the command to be executed at the end of GUI setup.
/i:inffile	Specifies the file name (no path) of the setup information file. Default is DOSNET.INF.
/r[:folder]	Specifies optional folder to be installed.
/rx[:folder]	Specifies optional folder to be copied.
/s[:sourcepath]	Specifies source location of Windows 2000 files. Full path or network share.
/t[:tempdrive]	Specifies drive to hold temporary setup files.
/u[:answer file]	Specifies unattended setup using answer file (requires /s).
/udf:id[,UDF_file]	Establishes ID that Setup uses to specify how a UDF file modifies an answer file.

Unattended installations:

- Unattended installations use an answer file to provide information during the setup process.
- Answer files are created using the Setup Manager Wizard or a text editor.

Domains, Trusts and AD**Active Directory**

Active Directory is a hierarchical database of all objects in the entire enterprise. It includes users, groups, domain controllers, printers, computers, contacts, shared folders, and organizational units. AD uses TCP/IP as its network protocol. All Win2000 computers can use AD by default. Non-Win2000 computers can still log onto the domain, but cannot use AD features. They must use a Directory Services add-on client (DSCLIENT.EXE).

Domains

Domains are now a hierarchical model with a parent domain and child domains under it. A single domain tree consists of a parent domain and all of its child domains. Multiple trees in the same AD are called a forest. Domains are named in accordance with the Internet's Domain Name System standard. If the parent (root) domain is called "troytec.com", a child may be called "support.troytec.com".

Global Catalog

To facilitate finding objects in the AD, the Global Catalog is used. It is an index of all objects published in the AD. A Global Catalog can only exist on a domain controller.

Forest

A Forest defines the outside perimeter of the Windows 2000 Active Directory. It is also called an enterprise. Within the forest are trees, and within the trees are domains.

Organizational Units

OUs are sub-domains that contain AD objects. They are groups by similar function or geographical locations. They exist to delegate administrative authority and to group policy application.

Deploying Windows 2000 Using Remote Installation Services (RIS):

Allows administrators to install Win2000 Professional on client computers from a central location. RIS server can be a domain controller or a member server.

RIS Server requirements:

- DNS Server Service
- DHCP Server Service
- Active Directory
- Minimum of 2 GB of disk space. Two hard disk partitions for the Operating System and for the images. Image partition must be formatted with NTFS. RIS cannot be installed on the system, boot partition, or on an EFS volume or DFS shared folder.

Setting up RIS Server:

- Install Remote Installation Services by using Windows Control Panel, Add/Remove Programs, Windows Components.
- Start the RIS Setup Wizard by running RSETUP. Specify the Remote Installation Folder Location. To build the initial CD-based image, specify the location of the Win2000 Professional source files. Inside the RIS folder, indicate where the CD image will be stored. Provide a friendly text name for the CD-based image.
- Setup Wizard will then create the folder structure, copy source files to the server, create the CD-based Win2000 Professional image and the default answer file, **RISTANDARD.SIF**, and start the RIS services on the server.
- To authorize the server, open Administrative Tools, DHCP. Right-click DHCP, choose Manage Authorized Servers. Click Authorize and enter the name or IP of the RIS server.
- Configure your RIS Server to respond to client requests.
- Assign users/groups that will be performing RIS Installations permissions to Create Computer Objects in Active Directory.
- Client Computer Naming Format is defined through Active Directory Users and Computers. Right-click RIS Server and click Properties, Remote Install, Advanced Settings, New Clients. Either choose a pre-defined format or create a custom one.
- Associate an answer file (.SIF) with your image.

RIS Client requirements:

- Must have a network adapter, or a 3 1/2" floppy drive and PCI network adapter supported by the RIS Startup Disk utility's list of supported adapters.
- Client machine must meet minimum hardware requirements for Windows 2000 Professional and must use the same Hardware Abstraction Layer (HAL).

Troubleshooting Remote Installations:

Symptom	Solution
Client cannot connect to RIS Server using the Startup disk	Verify correct network adapter driver in RBFGE.EXE.
Computer displays a BootP message but does not display the DHCP message	Verify if it can obtain an IP address. Ensure the DHCP server is online, is authorized, has a valid IP address scope. Ensure DHCP packets are being routed.
Computer displays the DHCP message but does not display the Boot Information Negotiations Layer (BINL) message	Verify the RIS server is online and authorized. Verify DHCP packets are being routed.
Installation options you expected are not available	Verify another Group Policy Object did not take precedence over your GPO.
System is unable to connect to RIS server, but BINL message is displayed	Restart the NetPC Boot Service Manager (BINLSVC) on the RIS Server.

Miscellaneous:

- The answer file (.SIF) supports the new [RemoteInstall] section. By setting the repartition parameter to yes, the install will delete all partitions on the client computer and reformat the drive with one NTFS partition.
- The Remote Boot Floppy Generator utility (RBFGE.EXE) only works on Windows 2000 systems. To create boot floppies, click Start, Run. Enter \\RISServerName\REMINST\ADMIN\I386\RBFGE.EXE.
- RIPrep images cannot be created on a server unless it already has an existing CD-based image.

Upgrading from Previous Versions:

- Run WINNT32.EXE for upgrading from a previous version of Windows.
- Windows 2000 will upgrade support: Windows 95 and 98, Windows NT Workstation 3.51 and 4.0, and Windows NT 3.1 or 3.5 (must be upgraded to NT 3.51 or 4.0 first, then Professional).
- Run WINNT32 /CHECKUPGRADEONLY to check for compatible hardware and software. A report will be generated indicating which system components are Windows 2000 compatible.
- All operating system files associated with Windows 95/98 will be deleted after an upgrade.

Troubleshooting Failed Installations:

Common errors:

Problem	Possible fix
Cannot contact domain controller	Ensure network cable is connected. Verify that servers running DNS and a domain controller are both on-line. Make sure all network settings are correct.
Dependency service will not start	Verify correct protocol and network adapter in the Network Settings.
Error loading operating system	Disk geometry is reported incorrectly on a NTFS partition. Use a partition less than 4 GB or use a FAT32 partition.
Insufficient disk space	Create a new partition or reformat an existing partition to free up space.

Implementing and Conducting Administration of Resources:

Choosing a file system:

- NTFS provides optimum security and reliability by securing individual files and folders on a user by user basis. Features include disk compression, disk quotas and encryption.
- FAT and FAT32 are used for dual booting between Windows 2000 and other operating systems. If the partition size is less than 2 GB, setup will format the partition as FAT. If greater than 2 GB, it will be formatted as FAT32.

- Existing NT 4.0 NTFS system partition will be upgraded to Windows 2000 NTFS automatically. If you are dual booting between NT 4.0 and 2000, you must install Service Pack 4 on the NT 4.0 machine first.

Disk Quotas

By default, only member of the Administrators group can view and change quota settings. Users can be allowed to view quota settings. Volume usage can be monitored on a per-user basis. Disk usage is based on file and folder ownership. Quotas do not use compression. Free space for applications is based on a quota limit. Quotas can be applied only to volumes formatted with NTFS that use Windows 2000. A quota warning should be set to log an event indicating that the user is nearing his limit. An event should be logged when a user exceeds a specified disk space threshold.

NTFS File and Folder Permissions:

File attributes within a partition or between partitions:

Command	File Attribute
Copying within a partition	Inherits the target folders permissions.
Moving within a partition	File keeps its original permissions.
Moving across partitions	Inherits the target folders permissions.

- The CACLS.EXE utility is used to modify NTFS volume permissions.
- File permissions override the permissions of its parent folder.
- Files moved from an NTFS partition to a FAT partition do not retain their attributes, but retain their long filenames.
- Permissions are cumulative, except for No Access, which overrides everything.

Local and Network Print Devices:

- Windows 2000 Professional supports: Line Printer (LPT), COM, USB, IEEE 1394, and network attached devices.
- Print services can only be provided for Windows and UNIX clients on Windows 2000 Professional.
- Windows 2000 Professional automatically downloads the printer drivers for clients running Win2000, WinNT 4, WinNT 3.51 and Windows 95/98.
- Windows 2000 Server is required to support Apple and Novell clients.
- Print Pooling allows two or more identical printers to be installed as one logical printer.
- Internet Printing allows you to enter the URL where the printer is located. The print server must be a Windows 2000 Server running Internet Information Server or a Windows 2000 Professional system running Personal Web Server. Shared printers can be viewed at: <http://servername/printers>.
- Print Priority is set by creating multiple logical printers for one physical printer and assigning different priorities to each. Priority ranges from 1, the lowest (default) to 99, the highest.
- To fix a stalled spooler, stop and restart the spooler services in the Services applet in Administrative Tools in the Control Panel.

- Availability option allows Administrator to specify the hours the printer is available.

Managing File Systems:

Windows 2000 supports Basic and Dynamic storage. Basic storage divides a hard disk into partitions. It can contain primary partitions, extended partitions and logical drives. Basic volumes cannot be created on dynamic disks. Basic volumes should be used when dual-booting between Windows 2000 and DOS, Windows 3.x, Windows 95/98 and all version of Windows NT.

Dynamic storage allows you to create a single partition that includes the entire hard disk. Dynamic disks are divided into volumes which can include portions of one, or many, disks. You do not need to restart the operating system after resizing.

Volume Types:

Volume Type	Characteristics
Simple volume	Contains space from a single disk
Spanned volume	Contains space from multiple disks (maximum of 32). Fills one volume before going to the next. If a volume in a spanned set fails, all data in the spanned volume set is lost. Performance is degraded as disks in spanned volume set are read sequentially.
Striped set	Contains free space from multiple disks (maximum of 32) in one logical drive. Increases performance by reading/writing data from all disks at the same rate. If a disk in a stripe set fails, all data is lost.

Dynamic Volume Limitations:

- A boot disk that has been converted from basic to dynamic cannot be converted back to basic.
- Not supported on portable computers or removable media.
- Cannot be directly accessed by DOS, Win95/98 or any versions of Windows NT if you are dual-booting.
- Dynamic volumes which were upgraded from basic disk partitions cannot be extended. Volumes created after the disk was upgraded to dynamic can be extended.
- When installing Windows 2000, if a dynamic volume is created from unallocated space on a dynamic disk, Windows 2000 cannot be installed on that volume.

Disk Management on a Remote Computer:

You must create a custom console focused on another computer. Choose Start, Run and type MMC. Choose Add/Remove Snap-in. Click Add. Click Disk Management then click Add. When Choose Computer dialog box appears choose the remote system.

Windows 2000 supports disk-based quotas. Quotas can be set on NTFS volumes, but not on FAT or FAT32 volumes. Quotas cannot be set on individual folders within a NTFS partition.

Using the Disk Management Snap-in Tool:

- The default is Basic storage when adding a new disk.
- You must choose Rescan Disks when you remove or add a new disk.
- Use Import Foreign Disk for disks that have been removed from another computer.
- Upgrading from Basic to Dynamic storage requires at least 1 MB of unallocated space.

Implementing, Managing, and Troubleshooting Hardware Devices and Drivers:

Display devices:

- Monitors are installed, removed, and drivers are updated through Monitors under the Device Manager. Windows 2000 Professional supports multiple monitors running concurrently.
- Use Display Adapters under the Device Manager to install, remove and update drivers.
- Desktop display properties are managed through the Display applet in Control Panel.

Disk devices:

- Use Disk Management to create, delete, and format partitions as FAT, FAT32 and NTFS. Used to change volume labels, reassign drive letters, check drives for errors and backup drives.
- To Manage disk devices, use Control Panel, Administrative Tools, Computer Management or by creating a custom console and adding the Disk Management snap-in. The Computer Management snap-in for your custom console enables Disk Management, Disk Defragmenter, Logical Drives and Removable Storage. There is a separate snap-in for each of these tools except for Logical Drives.

Mobile computer hardware:

- PCMCIA (PC Card) adapters, USB ports, IEEE 1394 (FireWire), and Infrared devices are supported through Device Manager.
- SmartCards and Encrypting File System decrease the likelihood of confidential data being compromised if the computer is stolen or lost.
- Support is provided for Advanced Power Management (APM) and Advanced Configuration and Power Interface (ACPI).
- Hibernation (complete power down while maintaining state of open programs and connected hardware) and Suspend (sleep with some power) modes are supported for extending battery life.
- Use hardware profiles for mobile computers. Accessed through Control Panel, System applet, Hardware tab, Hardware Profiles. Multiple profiles can be created and designated as a docked or undocked portable computer.

Managing/configuring multiple CPUs:

- Windows 2000 Professional supports a maximum of two CPUs.
- Windows 2000 supports Symmetric Multiprocessing (SMP). Processor affinity is also supported. Asymmetric Multiprocessing (ASMP) is not supported.
- Upgrading to multiple CPUs might increase the load on other system resources.

- Update your Windows driver to convert your system from a single to multiple CPUs. This is done through Device Manager, Computer, Update Driver.

Updating drivers:

- Driver Verifier is used to troubleshoot and isolate driver problems. It must be enabled through changing a Registry setting. The Driver Verifier Manager, VERIFIER.EXE, provides a command-line interface for working with Driver Verifier.

Installing and Managing Network Adapters:

- Adapters are installed using the Add/Remove Hardware applet in Control Panel.
- Change the binding order of protocols and the Provider order using Advanced Settings under the Advanced menu of the Network and Dial-up Connections window. Access by right-clicking on My Network Places icon.

Startup and Recovery Settings:

- Use DUMPCHK.EXE to examine contents of MEMORY.DMP.
- Accessed through Control Panel, System applet, Advanced tab, Startup and Recovery.
- Memory dumps are always saved with the filename MEMORY.DMP.
- A paging file must be on the system partition and the pagefile itself at least 1 MB larger than the amount of RAM installed for Write debugging information option to work.

Running the Recovery Console:

To install the Recovery Console, run WINNT32 /CMDCONS from the Windows 2000 CD i386 folder.

- Can be used to disable services that prevent Windows from booting properly.
- When starting Recovery Console, you must log on as Administrator.
- Allows you to boot to a DOS prompt when your file system is formatted with NTFS.

Emergency Repair Disk:

Use the Backup utility to create an emergency repair disk. To create an ERD, from the Start menu, select Programs, Accessories, System Tools, Backup. Click Emergency Repair Disk. Insert a blank formatted floppy into the A: drive. Select the Also Backup The Registry To The Repair Directory (%systemroot%\repair\regback) check box. Click OK. ERD contains **AUTOEXEC.NT**, **CONFIG.NT** and **SETUP.LOG**.

Monitoring and Optimizing System Performance and Reliability:

Windows Signature Verification:

- Run SIGVERIF to launch File Signature Verification.
- Saves search results to **SIGVERIF.TXT**.

Using offline files:

By default, offline files are stored in the %systemroot%\CSC directory. Share a folder and set its caching to make it available offline.

Using Synchronization Manager, you can specify which items are synchronized, using which network connection and when synchronization occurs (at logon, logoff, and when computer is idle).

Encrypted files (EFS) provides 56-bit (standard) encryption for data in NTFS files. It is public key based, and runs as an integrated system service. If a user has a private key to an encrypted NTFS file, the user can edit the file as a normal document. Encrypted files cannot be shared. EFS files are NOT encrypted in the offline cache. You must be a member of the Administrators group to view the offline cache (on an NTFS volume). File and folder permissions still apply in the offline cache, even when it is located on a FAT or FAT32 volume.

Hardware profiles:

- Created to store different sets of configuration settings, usually used with portables.
- Profiles are created through Control Panel, System applet, Hardware tab, Hardware Profiles

Data recovery:

- Windows 2000 Backup is launched through Control Panel, System applet, Backup or by running NTBackup from the Start menu.
- Users can back up their own files and files they have read, execute, modify, or have full control permission for.
- Users can restore files they have write, modify or full control permission for.
- Administrators and Backup Operators can backup and restore all files regardless of permissions.

Backup type	Description
Copy	All selected files and folders are backed up. Archive attribute is not cleared (fast for restoring)
Daily	All selected files and folders that have changed throughout the day are backed up. Archive attributes are ignored during the backup and are not cleared afterwards
Differential	Only selected files and folders that have their archive attribute set are backed up but archive attributes are not cleared
Incremental	Only selected files and folders that have their archive attribute set are backed up and then archive markers are cleared
Normal	All selected files and folders are backed up. Archive attribute is cleared if it exists (fast for restoring)

Configuring and Troubleshooting the Desktop Environment:

User profiles:

- When a user logs onto a client computer running Win2000 Pro, the user will receive their individualized desktop settings and all of their network connections regardless of how many users share the same computer.

- A user can change their user profile by changing their desktop settings. When they log off, Windows 2000 incorporates the changes into their user profile.
- Setting a profile as mandatory forces Windows to discard any changes made during the session so the next time the user logs on, the session remains unchanged from their last login.
- User profiles are stored in the %systemroot%\Documents and Settings\%username% folder in a new install of Win2000. When upgraded from NT 4.0, they are stored in %systemroot%\Profiles\%username%.
- Roaming profiles are used in Windows 2000 domains for users who move from one computer to another but require a consistent desktop environment.

Multiple languages and locations:

- Changed through the Regional Options applet in Control Panel. To add more locales, use Region Options, Input Locale, Add.
- To see the available languages and the current default, from the Regional Options applet, General tab, check the “Your System is Configured to Read and Write Documents in Multiple Languages” ListBox.

Managing and Troubleshooting Software Using Group Policies

Deploying software Using Group Policies:

- The software life cycle consists of four phases, Preparation, Deployment, Maintenance, and Removal.
- Windows Installer packages are recognized by their .MSI file extension.
- Integrates software installation into Windows 2000 so that it is centrally controlled, distributed, and managed from a central-point.

Maintaining Software Using Group Policies:

- A software package is installed on a Windows 2000 Server in a shared directory. A Group Policy Object (GPO) is created. Behavior filters are set in the GPO to determine who gets the software. The package is then added to the GPO under User Configuration, Software Settings, Software Installation. Then, select the publishing method.
- Set up Application Categories in Group Policy, computer or user configuration, Software Settings, Software Installation (right-click), Properties, Categories, Add. Creating logical categories helps users locate the software they need under Add/Remove Programs on their client computer.
- When upgrading deployed software, AD can either uninstall the old application first or upgrade over the top of it.
- Selecting the “Uninstall this application when it falls out of the scope of management” option forces removal of software when a GPO no longer applies.

Configuring Deployment Options:

- You can assign or publish software packages.
- Software that is assigned to a user has a shortcut appear on a user's Start, Programs menu, but is not installed until the first time they use it. Software assigned to a computer is installed the next time the user logs on regardless of whether or not they run it.

- When software is assigned to a user, the new program is advertised when a user logs on, but is not installed until the user starts the application from an icon or double-click a file-type associated with the icon. Software assigned to a computer is not advertised - the software is installed automatically. When software is assigned to a computer it can only be removed by a local administrator. Users can repair software assigned to computers, but not remove it.
- Published applications are not advertised. They are only installed through Add/Remove Programs in the Control Panel or through invocation. Published applications lack resiliency (do not self-repair or re-install if deleted by the user). Finally, applications can only be published to users, not computers.
- With invocation, when a user double-clicks on an unknown file type, the client computer queries Active Directory to see what is associated with the file extension. If an application is registered, AD checks to see if it has been published to the user. If it has, it checks for the auto-install permission. If all conditions are met, the application is installed.
- Non-MSI programs are published as .ZAP files. They cannot take advantage of MSI features such as elevated installation privileges, rolling back an unsuccessful installation, installing on first use of software or feature, etc. .ZAP files can only be published, not assigned.
- When software requires a CD key during installation, it can be pushed down with the installer package by typing `misexec /a <path to .msi file> PIDKEY="[CD-Key]"`
- Modifications are created using tools provided by the software manufacturer and produce .MST files which tell the Windows Installer what is being modified during the installation. .MST files must be assigned to .MSI packages at the time of deployment.
- Patches are deployed as .MSP files.

Configuring and Troubleshooting Desktop Settings:

Desktop settings can be configured using the Display applet in Control Panel or by right clicking on a blank area of the desktop and selecting Properties.

Users can change the appearance of the desktop, desktop wallpaper, screen saver settings and more.

Fax support:

- If a fax device (modem) is installed, the Fax applet appears in Control Panel.
- Use the Fax applet to setup rules for how the device receives faxes, number of retries when sending, where to store retrieved and sent faxes, user security permissions, etc.
- The Fax printer in your printer folder cannot be shared.
- If the Advanced Options tab is not available in the Fax applet log off then log back on as Administrator.

Accessibility services:

- Accessibility Wizard is used for deploying accessibility features to users who require them. Define the settings you want to deploy and, on the Save Settings to File page, save them to a file that has the .ACW extension. Place the file on a network share and modify

each user's login script so that it imports the settings. The command to import the file is this: %SystemRoot%\System32\Accwiz.exe filename.

- Utility Manager enables users to check an Accessibility program's status, and start or stop an Accessibility program. Administrators can designate to have the program start when Windows 2000 starts. Built-in programs include Magnifier, Narrator, and On-Screen Keyboard.
- By default, automatic reset for accessibility options is disabled. When enabled, accessibility options will be turned off if they have not been used for a pre-defined period of time.
- SoundSentry displays visual warnings when your computer makes a sound.
- FilterKeys tells the keyboard to ignore brief or repeated keystrokes.
- StickyKeys allows you to press multiple key combinations (CTRL-ALT-DEL) one key at a time.
- ShowSounds forces programs to display captions for the speech and sounds they make.
- MouseKeys lets you control the mouse pointer with the numeric keypad.
- Magnifier magnifies a portion of the desktop.
- Narrator reads menu options aloud using speech synthesis.

Implementing, Managing, and Troubleshooting Network Protocols and Services:

TCP/IP protocol:

- TCP/IP protocol is required for communicating with UNIX hosts.
- It is routable and works over most network topologies.
- Installed by default in Windows 2000.
- Can be used to connect dissimilar systems.
- Uses Microsoft Windows Sockets interface.
- IP addresses can be entered manually or provided automatically by a DHCP server.

Configuring DHCP to Allow Dynamic Updates:

You must configure the DHCP server to perform dynamic updates. To do so, on the DNS tab of the Properties dialog box for a DHCP server, select Automatically Update DHCP Client Information In DNS. You must also specify; Update DNS Only If DHCP Client Requests, or Always Update DNS. Additional options include Discard Forward Lookups When Lease Expires, and Enable Updates For DNS Client That Do Not Support Dynamic Update.

Automatic Private IP Addressing:

When "Obtain an IP Address Automatically" is enabled, but the client cannot obtain an IP address, Automatic Private IP addressing takes over.

- IP address is generated in the form of 169.254.x.y (x.y is the computer's identifier) and a 16-bit subnet mask (255.255.0.0).
- The computer broadcasts this address to its local subnet.
- If no other computer responds to the address, the first system assigns this address to itself.

- When using the Auto Private IP, it can only communicate with other computers on the same subnet that also use the 169.254.x.y range with a 16-bit mask.
- The 169.254.0.0 - 169.254.255.255 range has been set aside for this purpose by the Internet Assigned Numbers Authority.

Services for UNIX 2.0:

- Windows 2000 uses CIFS (Common Internet File System) which is an enhanced version of the SMB (Server Message Block) protocol.
- UNIX uses NFS (Network File System).
- FTP support has been added to Windows Explorer and to Internet Explorer 5.0 allowing users to browse FTP directories as if they were a local resource.
- Install SNMP for Network Management (HP, OpenView, Tivoli and SMS).
- Print Services for UNIX allows connectivity to UNIX controlled Printers (LPR).
- Simple TCP/IP Services provides Echo, Quote of Day, Discard, Daytime and Character Generator.

Client for NFS:

- Installs a full Network File System (NFS) client that integrates with Windows Explorer.
- Places a second Telnet client on your system that uses NTLM authentication instead of clear text.
- Users can browse and map drives to NFS volumes and access NFS resources through My Network Places. Microsoft recommends this over installing Samba (SMB file services for Windows clients) on your UNIX server.
- NFS shares can be accessed using standard NFS syntax (servername:/pathname) or standard UNC syntax (\\servername\pathname)

Troubleshooting:

- Common TCP/IP problems are caused by incorrect subnet masks and gateways.
- Check DNS settings if an IP address works but a hostname won't.
- The Ping command tests connections and verifies configurations.
- The Tracert command checks a route to a remote system.
- Use IPConfig and IPConfig /all to display current TCP/IP configuration.
- Use NetStat to display statistics and connections for TCP/IP protocol.
- Use NBTStat to display statistics for connections using NetBIOS over TCP/IP.

NWLink (IPX/SPX) and NetWare Interoperability:

- NWLink is used by NT to allow NetWare systems to access its resources.
- To allow file and print sharing between NT and a NetWare server, CSNW (Client Services for NetWare) must be installed on the NT system. In a NetWare 5 environment, the Microsoft client does not support connection to a NetWare Server over TCP/IP. You will have to use IPX/SPX or install the Novell NetWare client.
- Gateway Services for NetWare can be implemented on your NT Server to provide an MS client system to access your NetWare server by using the NT Server as a gateway. Frame types for the NWLink protocol must match the computer that the NT system is trying to

connect with. Mismatching frame types will cause connectivity problems between the two systems.

- When NWLink is set to auto-detect the frame type, it will only detect one type and will go in this order: 802.2, 802.3, ETHERNET II and 802.5 (Token Ring).
- NetWare 3 servers uses Bindery Emulation (Preferred Server in CSNW). NetWare 4.x and higher servers use NDS (Default Tree and Context.)
- There are two ways to change a password on a NetWare server - SETPASS.EXE and the Change Password option (from the CTRL-ALT-DEL dialog box). The Change Password option is only available to NetWare 4.x and higher servers using NDS.

Other protocols:

- DLC is a special-purpose, non-routable protocol used by Windows 2000 to talk with IBM mainframes, AS400s and Hewlett Packard printers.
- AppleTalk must be installed to allow Windows 2000 Professional to communicate with Apple printers. File and Print Services for Macintosh allows Apple Clients to use resources on a Microsoft Network.
- NetBEUI is used solely by Microsoft operating systems and is non-routable.

Remote Access Services (RAS):

Authentication protocols:

- RADIUS - Remote Authentication Dial-in User Service. Provides authentication and accounting services for distributed dial-up networking.
- EAP - Extensible Authentication Protocol. Allows for an arbitrary authentication mechanism to validate a dial-in connection. Uses generic token cards, MD5-CHAP and TLS.
- EAP-TLS - Transport Level Security. Primarily used for digital certificates and smart cards.
- MD5-CHAP - Message Digest 5 Challenge Handshake Authentication Protocol. Encrypts usernames and passwords with an MD5 algorithm.
- MS-CHAP (V1 and 2) - Microsoft Challenge Handshake Authentication Protocol. Encrypts entire session, not just username and password. V2 is supported in Windows 2000 and NT 4.0 and Win 95/98 (with DUN 1.3 upgrade) for VPN connections. MS-CHAP cannot be used with non-Microsoft clients.
- CHAP - Challenge Handshake Authentication Protocol - encrypts user names and passwords, but not session data. Works with non-Microsoft clients.
- SPAP - Shiva Password Authentication Protocol. Used by Shiva LAN Rover clients. Encrypts password, but not data.
- PAP - Password Authentication Protocol. Sends username and password in clear text.

Dial-up networking:

- Add new connections by using the Make New Connection wizard.
- PPP is generally preferred because it supports multiple protocols, encryption, and dynamic assignment of IP addresses. SLIP is an older protocol that only supports TCP/IP and is used for dialing into legacy UNIX systems.
- Dial-up networking entries can be created for modem connections, LAN connections, direct cable connections and Infrared connections.

Virtual Private Networks (VPNs):

- L2TP - Layer Two Tunneling Protocol. Creates a tunnel, but it does not provide data encryption. Security is provided by using an encryption technology like IPSec.
- PPTP - Point to Point Tunneling Protocol. Creates an encrypted tunnel through an untrusted network.

Feature	PPTP	L2TP
Built-in encryption	Yes	No
Header compression	No	Yes
Transmits over IP-based internetwork	Yes	Yes
Transmits over UDP, Frame Relay, X.25 or ATM	No	Yes
Tunnel authentication	No	Yes

Multilink Support:

- Enabled from the PPP tab of the RAS Server Properties dialog box.
- Multilinking allows you to combine two or more modems or ISDN adapters into one logical link with increased bandwidth.
- BAP (Bandwidth Allocation Protocol) and BACP (Bandwidth Allocation Control Protocol) enhance multilinking by dynamically adding or dropping links on demand. Settings are configured through RAS policies.

Using Shared Resources on a Microsoft Network:

The Administrators and Power Users groups can create shared folders on a Windows 2000 Professional workstation. Windows 2000 creates administrative shared folders for administrative reasons. These shares are appended with dollar sign (\$) which hides the share from users browsing the computer. The system folder (Admin\$), the location of the printer drivers (Print\$) and the root of each volume (C\$, D\$, etc.) are all hidden shared folders.

Shared folder permissions apply only when the folder is accessed via the network. By default, the Everyone group is assigned Full Control for all new shared folders. Share level permissions can be applied to FAT, FAT32 and NTFS file systems.

Windows 2000 Professional is limited to 10 concurrent connections for file and print services.

Implementing, Monitoring, and Troubleshooting Security:

Active Directory:

Active Directory (AD) services provide a single point of network management, allowing you to add, remove, and relocate resources. It offers centralized management, scalability and open standards support.

Active Directory Structure:

Name	Characteristic:
Object	A distinct named set of attributes that represent a network resource such as a computer or a user account.
Classes	The logical groupings of objects such as user accounts, computers, domains or organizational units.
Organizational Unit (OU)	Used to organize objects inside a domain into logical administrative groups such as computers, printers, files shares, and applications.
Domain	Joining a domain requires a domain name, a computer account, and an available domain controller and a DNS server. All network objects exist within a domain with each domain storing information only about the objects it contains. ACLs contain the permissions associated with objects that control which users or types of users can access them.
Tree	A grouping or hierarchical arrangement of one or more Windows 2000 domains that share a contiguous names space (e.g. support.troytec.com, mcse.troytec.com, and mcsd.troytec.com).
Forest	A grouping or hierarchical arrangement of one or more domain trees that form a disjointed namespace. Domains in a forest operate independently of each other, but the forest enables communication across the domains.
Sites	Combination of one or more IP subnets connected by high-speed links. Not part of the AD namespace, and contains only computer objects and connection objects used to configure replication between sites.

Site Replication:

- Active Directory information is replicated between Domain Controllers (DCs) and ensures that changes to a domain controller are reflected in all DCs within a domain. A DC is a computer running Windows 2000 server which contains a replica of the domain directory (member servers do not).
- DCs store a copy of all AD information for their domain, manage changes to it and copy those changes to other DCs in the same domain. DCs in a domain automatically copy all objects in the domain to each other. When you change information in AD, you are making the change on one of the DCs.
- DCs immediately replicate important changes to AD like a user account being disabled.
- AD uses multimaster replication. No single DC is the master domain controller. All DCs within a domain are peers.
- Having more than one DC in a domain provides fault-tolerance. If a DC goes down, another is able to continue authenticating logins and providing required services using its copy of AD.

Local user accounts:

- Resides only on the computer where the account was created in its local security database. If computer is part of a peer-to-peer workgroup, accounts for that user will have to be created on each additional machine that they wish to log onto locally. Local accounts cannot access Windows 2000 domain resources and should not be created on computers that are part of a domain.
- Domain user accounts reside in AD on domain controllers and can access all resources on a network that they have been granted privileges to.
- Built in user accounts are Administrator (used for managing the local system) and Guest (for occasional users - disabled by default).
- Usernames cannot be longer than 20 characters and cannot contain illegal characters.
- User logon names are not case sensitive. Alphanumeric combinations are allowed.
- Passwords can be up to 128 characters.
- User accounts are added and configured through the Computer Management snap-in.
- Creating and duplicating accounts requires username and password. Disabling an account is typically used when someone else will take the user's place or when the user might return.
- When copying a user account, the new user will stay in the same groups that the old user was a member of. The user will keep all group rights that were granted through groups, but lose all individual rights that were granted specifically for that user.

Group Policy:

Group Policies are a collection of user environment settings that are enforced by the operating system and cannot be modified by the user. User profiles refer to the environment settings that users can change.

System Policy Editor (POLEDIT.EXE)

Windows NT 4, Windows 95 and Windows 98 use the System Policy Editor (POLEDIT.EXE) to specify user and computer configuration that is stored in the registry.

- Are not removed when the policy ends.
- Not secure because settings can be changed by a user with the Registry Editor (REGEDIT.EXE). Settings are imported/exported using .ADM templates.
- Windows 2000 comes with SYSTEM.ADM (system settings), INETRES.ADM (Internet Explorer settings).

Group Policy snap-in (GPEDIT.MSC)

Exclusive to Windows 2000 and supercedes the System Policy Editor. Uses Incremental Security Templates.

- Settings can be stored locally or in AD. They are secure and can only be changed by Administrators.
- Should only be applied to Windows 2000 systems that have been clean installed onto an NTFS partition. Only the Basic security templates can be applied to NTFS computers that have been upgraded from NT 4.0.
- Settings are imported/exported using .INF files. The Group Policy snap-in can be focused on a local or remote system.

Security Configuration:

Security Configuration and Analysis snap-in is a stand-alone MMC snap-in that can configure or analyze Win2000 security based on contents of a security template created using Security Templates snap-in. The text-based tool can be run from the command line using SECEDIT.EXE.

By default, Windows 2000 Professional doesn't require users to press CTRL-ALT-DEL to logon. To increase security, disable this feature to force users to log on. To disable access to the workstation, but allow programs to continue running, use the Lock Workstation option (from the CTRL-ALT-DEL dialog box). To disable access to the workstation, and not allow programs to continue running, use the Logoff option (from the CTRL-ALT-DEL dialog box). To lock the workstation after a period of idle time, use a screen-saver password.

Auditing can be enabled by clicking Start, Programs, Administrative Tools, Local Security Policy. In the Local Security Settings window, double-click Local Policies and then click Audit Policy. Highlight the event you want to audit and on the Action menu, click Security. Set the properties for each object as desired then restart computer for new policies to take effect.

To further enhance security, clear the Virtual Memory Pagefile when the system shuts down. By default it is not cleared, but this can be changed under Local Security Policy Settings and will prevent unauthorized person from extracting information from your system's pagefile. You can also prevent the last user name from being displayed at logon (Win2000 Pro does this by default). Use the Group Policy snap-in, Local Computer Policy, to change this. When using Event Viewer, only local administrators can see the security log, but anyone (by default) can view other logs.

Encrypting File System (EFS):

- Designated Recovery Agents (by default, the Administrator) can recover encrypted data for the domain using AD and Certificate Server.
- Encryption is transparent to the user.
- Only works on Windows 2000 NTFS partitions (NTFS v5).
- Uses public-key encryption. Keys that are used to encrypt the file are encrypted by using a public key from the user's certificate. The list of encrypted file-encryption keys is kept with the encrypted file and is unique to it. When decrypting the file encryption keys, the file owner provides a private key which only he has.
- There can be more than one recovery agent, but at least one public recovery key must be present on the system when the file is encrypted.
- If the owner has lost his private key, an appointed recovery system agent can open the file using his/her key instead.
- EFS resides in the Windows OS kernel and uses the non-paged memory pool to store file encryption keys.
- Encrypted files can be backed up using the Backup Utility, but will retain their encrypted state as access permissions are preserved.

- Default encryption is 56-bit. North Americans can upgrade to 128-bit encryption.
- Compressed files can't be encrypted and vice versa.
- You can't share encrypted files.
- Use the Cipher command to work with encrypted files from the command line.
- Encrypted files are decrypted if you copy or move them to a FAT volume.
- Cut and paste to move files into an encrypted folder - if you drag and drop files, the files are not automatically encrypted in the new folder.
- The EFSINFORMATION.EXE utility in the Win2000 Resource Kit allows an administrator to determine information about encrypted files

IPSec:

IPSec encrypts Transmission Control Protocol/Internet Protocol (TCP/IP) traffic within an Intranet, and provides the highest levels of security for VPN traffic across the Internet. IPSec is implemented using Active Directory or on a Windows 2000 machine through its Local Security settings. It is not available for Windows 95/98 or Windows NT. IPSec is a protocol, not a service. It consists of two separate protocols, Authentication Headers (AH) and Encapsulated Security Payload (ESP). AH provides authentication, integrity and anti-replay but does not encrypt data and is used when a secure connection is needed but the data itself is not sensitive. ESP provides the same features plus data encryption and is used to protect sensitive or proprietary information but is associated with greater system overhead for encrypting and decrypting data.

Supported IPSec authentication methods are Kerberos v5 Public Key Certificate Authorities, Microsoft Certificate Server, and Pre-shared Key.

Before two computers can communicate they must negotiate a Security Association (SA). The SA defines the details of how the computers will use IPSec, with which keys, key lifetimes, and which encryption and authentication protocols will be used. When participating in a Windows 2000 domain, IPSec policies are stored in Active Directory. Without AD, they are stored in these registry keys.

Installing, Configuring and Administering Windows 2000 Professional Exam Questions

- 1. What is the compression attribute of an uncompressed file after it is moved within an NTFS partition to a compressed folder on a Win2000 Professional computer?**

A: The file remains uncompressed.

- 2. What should you do on your Win2000 Professional computer to find the location of a shared folder?**

A: Use System Tools in Computer Management to display the file paths of your shared folders.

- 3. You are rewriting an accounting application so that it will run on computers loaded with both Win2000 Professional and Windows 98 computers. Computers must be configured for optimal disk performance. Users must be able to access all of the files on their computers while using either operating system. What should you do?**

A: Create and format a FAT32 partition.

- 4. Your Win2000 Professional computer contains a single hard disk configured as a single partition. You want to move a folder named Accounting under a folder named Corp on your computer. You want the files in the Accounting folder to remain compressed after moving the folder. You want the files in the Corp folder to remain uncompressed. You must ensure that the files are recoverable in case of any disk problems. Using the least amount of administrative effort, what should you do?**

A: Back up the Accounting folder, move the Accounting folder to the Corp folder.

- 5. A shared printer named Printer1 will print, although it has numerous jobs in the print queue. You want to print to an identical print device, which has been shared as Printer2 on Computer2. Without having to reconfigure the default printer, how can you allow users who currently connect to Printer1 to automatically use Printer2?**

A: Configure Printer1 to add a port and set the port to \\Computer2\Printer2.

- 6. You upgrade six MPS-compliant computers from Windows NT Workstation 4.0 to Win2000 Professional. Each computer has two 550 MHz processors. The computers are used for high-end graphics applications. After the upgrade, users report that the processing time for the graphics applications is much slower. What should you do?**

A: Use Device Manager to install the MPS-compliant drivers for the second processor.

- 7. You install Win2000 Professional on ten computers that have video capture cards installed. A user reports the video capture card is not functioning correctly. Using Device**

Manager, you view the hardware settings. There is an exclamation mark before the Multimedia Audio Controller. What should you do?

A: Use Device Manager to update the drivers for the device.

8. What user mode MMC console type allows the creation of a new MMC window?

A: Full Access.

9. Which feature of Windows 2000 allows an Administrator to enforce desktop settings for users?

A: Group Policy.

10. To logon locally, a computer must be a member of what?

*A: The computer must be a member of a Workgroup.
The computer must be a member of a domain.*

11. You are installing Windows 2000 over the network. Before you install to a client computer, what must you do?

A: Establish the path to the shared installation files on the Distribution Server. Create a 500 MB FAT partition on the target computer. Create a client disk with the network client so that you can connect to the distribution server.

12. After installing an ISA-based SCSI adapter in your docking station, the SCSI adapter is not detected during the startup process. You start the Add/Remove Hardware wizard, but the SCSI adapter is not listed. What should you do to allow Win2000 Professional to detect the SCSI adapter?

*A: Restart the Add/Remove Hardware wizard.
Manually add the SCSI adapter drivers.*

13. What file systems are supported by Windows 2000?

A: NTFS, FAT, FAT32.

14. Computers on the ACCOUNTING subnet, which runs Win2000 Professional, are dynamically assigned IP addressing and configuration information from a DHCP server on the subnet. Computers on the DEVELOPMENT subnet run Windows 98. They are statically assigned IP addressing and configuration information. Users on the ACCOUNTING subnet report that they cannot communicate with users on the DEVELOPMENT subnet. A user who works on Computer3 reports that he cannot communicate with computers on either subnet. You view the network is configuration (an exhibit will be shown), and it shows computers in subnet ACCOUNTING get IP and gateway

addresses by DHCP, but the gateway configuration of DHCP Server is wrong. Computer3 only has NWLink protocol. What should you do? (Choose two)

*A: Change the default gateway option IP address on the DHCP server.
Enable TCP/IP protocol with the default settings on Computer3.*

15. What is the resulting action when you click on the lock computer button on the Windows Security Dialog Box?

*A: Computer is locked.
Applications continue to run.*

16. You configure the network adapter card for each Win2000 Professional computer to use TCP/IP and assign static IP addressing information. You configure two computers with 10/100 MBPS UTP-only network adapter cards. On all other computers, you use 10 MBPS BNC/UTP combination network adapter cards. All computers are connected to a 10/100 switch that has category 5 UTP cabling. After the installation you find that only the computers with the 10/100 MBPS UTP-only cards can communicate with each other. What should you do so that all computers on the network can communicate with each other?

A: Change the combination network adapter cards to use the UTP transceiver setting.

17. You want your computer to use both Win2000 Professional and Windows 98. It has three 6 GB hard disks; Disk 0, Disk 1 and Disk 2. Each hard disk needs to have a 6 GB partition. Windows 98 will be installed on Disk 0, and Win2000 Professional on Disk 1. Project files are to be stored on Disk 2. File level security should be implemented on Disk 1. Project files must be accessed when using either operating system. What should you do? (Select and Place)

*A: Disk 0 FAT32
Disk 1 NTFS
Disk 2 FAT32*

18. Users are complaining that they can communicate with some of the machines on their network segment, but are having trouble communicating with other machines. Furthermore, they are unable to access any network resources on other segments. How should you troubleshoot this problem?

A: Use the IPConfig utility to determine what IP addresses have been assigned and check to see if a functioning DHCP server is available for the segment.

19. You have three encrypted files. You want to make a backup copy of the three files and maintain their security settings. You have the option of backing up to either to the network or a floppy disk. What should you do?

A: Copy the files to a network share on an NTFS volume.

- 20. You have 75 identically configured Win2000 Professional computers that will be shared by users in the OU. With the least amount of administrative effort, what should you do so that users are able to maintain their individual desktop settings regardless of which computer they use?**

*A: Configure each computer to join the domain.
Create a domain user account that uses roaming user profiles.*

- 21. Randy is a member of the local Administrators group. Users report that Randy has been viewing and changing their files. What should you do to limit Randy to installing programs, perform backups and manage printers, but not to view or change other users files?**

*A: Remove Randy from the local Administrators group.
Add him to both the Power Users group and the Backup Operators group.*

- 22. Your network's dialup server is configured to support certificate authentication. You want to use smart card authentication on your Win2000 Professional Portable computer. Your computer has a PC Card smart card reader and the appropriate drivers installed, and a smart card. What else should you do to enable smart card authentication on your computer?**

*A: Configure a dial-up connection to use EAP.
Select the smart card device for authentication.*

- 23. Files are being deleted from your shared hard drive. You want to track all users who access your files in the future. What should you do? (Choose two)**

*A: Enable the local Group Policy for auditing object access events that are successful.
Use Win2000 Explorer to enable auditing for your files.*

- 24. You have an employee named Drew leaving your company. A new employee named Adam will replace him. Drew has a local user account on a Win2000 Professional computer, with rights and permissions to multiple files and folders on the computer. You want Adam to have the same rights and permissions. What should you do?**

A: Rename Drew's user account to Adam, and change the account password.

- 25. You install a new AGP video adapter in your Win2000 Professional computer. You install the manufacturer's device drivers, and reboot. During the startup process, the monitor goes blank. What should you do?**

*A: Start the computer by using the Emergency Repair Disk.
Restore the original adapter driver settings.*

26. You are having problems with your video driver. What should you do?

A: Reboot the computer, and press F8 to get to the Advanced Options menu. Select Enable VGA Mode.

27. You purchase an USB-based ISDN terminal adapter for your Win2000 Professional portable computer. You install the device, but Plug and Play fails to detect the new device. You test the device on a Win2000 Professional desktop computer, and everything is OK. From Device Manager on the portable computer, you see that all devices are working properly (an exhibit will be shown). What should you do?

A: Contact the hardware manufacturer to obtain an upgrade for the Plug and Play BIOS.

28. Your Win2000 Professional computer has a single Pentium II 400 MHz processor, 64 MB of RAM and an IDE hard disk. When you are working on multiple graphics design applications simultaneously, you notice that your computer responds very slowly. You use System Monitor to view your computer's performance. It shows the percent processor time as high (an exhibit will be shown). What should you do to improve the performance?

A: Add a second Pentium II 400 MHz processor.

29. You use Windows Backup to daily back up the files on drive D of your Win2000 Professional computer. On Thursday morning drive D fails. You replace it with a new hard disk. You want to restore your files on drive D to the new hard disk. You view your backup log and see the backup method is incremental (an exhibit will be shown). In what order do you restore your data?

A: Friday, Saturday, Sunday, Monday, Tuesday, Wednesday. Files will be current as of Wednesday night.

30. Which of the following are user mode MMC console types?

*A: Delegated, Multiple Window
Full Access
Delegated, Single Window*

31. You use a Win2000 Professional computer to run a weekly report. When the report is running on the computer, another task stops responding and eventually times out. When you run only the other task, the task completes successfully. You use Task Manager to view your system resources. They show the weekly report CPU time is high (an exhibit will be shown). You want to resolve the problem by using Task Manager. What should you do?

A: Decrease the base priority of the weekly report task.

32. You are required to deploy 35 new Windows 2000 desktop computers on your network as quickly as possible. Most of the computers possess the same hardware configurations, but a few have different BIOS chips and video cards. Which installation method should you use?

A: Remote Installation Services.

33. You have Win2000 Professional installed on your C drive. Both your C and D drives have more than 500 MB of free disk space. You frequently run many memory intensive graphics applications simultaneously. You notice that access to drive C is much slower when you are using the graphics applications. You want to maximize disk performance. What should you do?

*A: Move the paging file from drive C to drive D.
Set the initial size of virtual memory and the maximum size of virtual memory to 256 MB.*

34. You configure your Win2000 Professional portable computer to redirect your My Documents folder to your home folder. You want to ensure that you can access all files in your My Documents folder when you are not connected to the network. What should you do? (Choose two)

*A: Use Windows Explorer to enable Offline Files.
Use Windows Explorer to configure the properties of your home folder to be available offline.*

35. After installing an USB camera to your Win2000 Professional computer, you notice that your USB keyboard does not respond. You suspect that the camera drivers are not certified for Win2000 Professional. You want to configure your computer to enable your USB keyboard and to prevent uncertified drivers from being installed in the future. What should you do? (Choose two)

*A: Configure Win2000 Professional to enable driver signing.
Start the computer in safe mode. Replace the camera drivers with Win2000 Professional certified drivers by using Device Manager.*

36. You open the DHCP console, and notice the DHCP server icon is marked with a red arrow. Why?

A: The DHCP Service is not authorized to operate in the domain.

37. You want to configure your Win2000 Professional portable computer to use offline files. The files include a large project file and some smaller personal files. Your portable computer uses a dial-up connection to the server at scheduled times during the day to automatically download your e-mail messages. You do not want to synchronize the project file during this time. What should you do?

A: Configure Synchronization Settings to synchronize the project file only when using the LAN connection.

Set synchronization for the personal files for both the LAN connection and your dial-up connection.

- 38. You want to upgrade several computers from Windows NT Workstation 4.0 to Win2000 Professional. Using Setup Manager you create an UNATTEND.TXT file and copy the file to a floppy disk. You then start the installation on a test computer by using the Win2000 Professional CD-ROM. You insert the floppy disk after the computer starts. Although you had set the user interaction level to full unattended mode, you are prompted for all the required parameters. You want to ensure that the unattended installation does not prompt you for input. What should you do? (Choose two)**

A: Rename UNATTEND.TXT on the floppy disk to WINNT.SIF.

Add a [Data] section to the unattend.txt and set the unattended install parameter to YES.

- 39. How do you stop the sharing of a folder?**

A: Do Not Share This Folder option.

- 40. You want to install Win2000 Professional on several new computers. You first install Win2000 Professional on one of the new computers. You log on to the computer by using the local Administrator account. You install some standard applications. You then create a RIS image of the computer you configured. You want to configure the RIS image so that the standard applications will be accessible to the user when the user first logs on to the network. What should you do?**

A: Copy the Local Administrator account profile to the default user profile.

- 41. You want to install Win2000 Professional on 20 new PXE compliant computers, which do not have operating systems installed. You create a RIS image and load the image onto the RIS server and then start the new computers. You find that the new computers cannot connect to the RIS server. You verify that existing client computers on the network can connect to network servers. What should you do? (Select and Place)**

A: DHCP Server is required for RIS.

- 42. You install Win2000 Professional on your portable computer. You have an external CD-ROM drive is connected to the parallel port, but Win2000 Professional cannot see the CD-ROM drive. Computer Management unsuccessfully scans for the CD-ROM. You want to enable Win2000 Professional to detect the CD-ROM drive. What should you do?**

A: Configure the parallel port to enable legacy Plug and Play detection.

- 43. You want to install Win2000 Professional on 30 PXE compliant computers and 30 non-PXE compliant computers. All computers are included on the current Hardware Com-**

patibility List. You create a RIS image and load the image onto the RIS server. You then start the all computers. PXE compliant computers can connect to the RIS server. Non-PXE compliant computers cannot connect to the RIS server. What should you do?

A: Run Rbfg.exe to create a non-PXE compliant startup disk.

44. You are upgrading a computer from Win98 to Win2000 Professional. You install by using the Win2000 Professional CD-ROM. After the text mode installation portion is complete, you restart the computer. The BIOS virus checker indicates that your computer is infected with a Master Boot Record virus. What should you do before you continue the installation?

A: Disable the BIOS virus checker and restart the computer.

45. A Win2000 Professional computer that is shared by several users. You add two new user accounts named User7 and User8 to the computer. When User7 log on, she receives the error message: "Windows cannot copy file C:\Documents and Settings\default user\ to location C:\Documents and Settings\User7". User8 gets a similar message. What should you do? (Choose two)

A: Add the Everyone group to the DACL for the C:\Documents and Settings\default user folder.

Log on by using the local Administrator account and create new folders for User7 and User8 in the c:\Documents and Settings folder.

46. What type of event is audited to log changes made to user security options?

A: Policy Change.

47. Office 2000 was assigned to all the computers on the network by using a Group Policy object (GPO). You deploy the Office 2000 service release to all of the Win2000 Professional computers on the network. One computer fails. What should you do?

A: Restart Windows Installer on the computer that failed to install the service release.

48. Users in your company use English, French and Spanish create document and to communicate with vendors internationally. Users run the Russian localized edition of Win2000 Professional on their desktop and portable computers. Natasha wants to create a word processing document in both English and Spanish by using Notepad in Win2000 Professional. What should you do?

A: Have Natasha use the Regional Options in Control Panel to add input locales and keyboard layouts/IME for both English and Spanish.

49. You are deploying two new applications to users in your company. All users in your organization use MS Word. All users in the Finance department use MS Access. Some

users outside of the Finance department need occasional access to Access. If you have a single domain and each department has their own organizational unit, how should you deploy these applications?

A: MS Word would be assigned in a GPO at the domain level. MS Access would be assigned in a GPO at the Finance department's organizational unit and would also be published in a GPO at the domain level.

50. You have text in both English and Spanish. The word processing program you are using is a Windows 16 bit character based application. You complete the English portion of your document. You then install Spanish as a language group by using Regional Options in Control Panel. However, you cannot use Spanish to complete the Spanish portion of your document. What should you do?

A: Save and close the word processing program. Select Spanish by using the locale indicator on the taskbar and restart the word processing program.

51. Which of the following is true of RADIUS support in Windows 2000?

A: A Windows 2000 server can be a RADIUS server, a RADIUS client or both simultaneously.

52. You configure a local group to have a mandatory user profile. The mandatory profile has a logo with 16-bit color and 1024 x 768 resolution. Users have both standard VGA video adapters and SVGA video adapters. Several users report that when they log on to certain Win2000 Professional computers the custom bitmap is distorted. What should you do?

A: Change the custom bitmap to 640 x 480 resolution and reconfigure the mandatory user profile.

53. What must be present on the network when installing a computer to the domain?

A: At least one domain controller and one DNS server.

54. You are using Windows Installer to deploy an application. A Group Policy Object (GPO) is created for the Accounting OU. During the deployment, some users in the Accounting OU report that the installation aborts, while others report that the software shows general protection fault errors. What should you do?

A: Repackage and redeploy the application's .MSI file to the Accounting OU.

55. Your routed TCP/IP network consists of 10 Win2000 Server computers and 75 Win2000 Professional computers. TCP/IP is the only network protocol. You want newly installed computers to use NetBIOS names to connect to all shared resources on the network. You configure a TCP/IP address and a shared mask on each new computer.

**Which two additional TCP/IP properties should you configure on each new computer?
(Choose two)**

*A: A gateway address.
A WINS server address.*

56. By default, which permissions will be changed when you modify the permissions on an NTFS folder?

A: The permissions on the folder, files and sub-folders.

57. You recently added a new hard drive to your principal file storage server so users can store customer documents and contact information. You must format the drive before it can be used to store files. Which commands will provide access to Disk Management, by default?

*A: Select Start/Run, type "DISKMGMT.MSC", then click OK.
Double-click DISKMGMT.MSC in the Sysroot\Winnt\System32 directory.*

58. Your network uses DHCP to assign IP addresses in the range 194.134.154.10 - 194.134.154.198. Your computer has been configured to use DHCP but has an IP address of 169.254.134.194. What is the most likely reason for this?

A: The DHCP server is unavailable. Your computer has randomly assigned itself an address from the 169.254.0.0 network.

59. What feature is used to restore Win2000 when Last Known Good does not work?

A: Automatic System Recovery (ASR).

60. You install Win2000 Professional at home. You create a new dial-up connection to connect to your company's RAS. The connection uses both of your external modems and Multilink to bind the modems together. You start the dial-up connection and connect to the RAS. You notice that only one of the modems is connected to the RAS. What should you do?

A: Configure the company's remote access server to accept Multilink connections.

61. Which Windows 2000 technology allows Windows Installer packages to be automatically installed, upgraded or removed using group policy?

A: Windows 2000 Software Installation and Maintenance.

62. You use your Win2000 Professional computer to transfer 20 large files. Each file is 100 MB in size. You want to copy the files from a UNIX server in your branch office to a computer running SQL Server at the main office. When you copy the files by using

Windows Explorer, the connection times out and the file copy is aborted. You want to monitor the performance of TCP/IP of your computer. What should you do?

A: Install SNMP. Use the Performance Console to view all the counters of the TCP object.

63. Your Win2000 Professional Client2 has an IP address of 10.10.167.4, a default gateway of 10.10.167.1, and a subnet mask of 255.255.252.0. You want to connect to a shared folder on ServerB. ServerB's IP is 10.10.13.10. But you receive the following error message: "The network location could not be reached". You run IPConfig to review the configuration on Client2. Which configuration setting should you change?

A: Click the incorrectly configured network setting in the IP configuration display. Client2 and ServerB belong to different subnets. Click the subnet mask of Client2.

64. Win2000 Professional Client2 has an address of 10.10.167.4 and a default gateway of 10.10.167.1. You want to connect to a shared folder on ServerB. But you receive the following error message: "The network location could not be reached". You want to allow Client2 to connect to ServerB. What should you do?

A: Configure Client2 to use a WINS server address of 10.10.13.24.

65. You upgrade five computers from NT Workstation 4.0 to Win2000 Professional. The computers are used by members of the Accounting OU. All five computers are configured to have the default security settings. Helen reports that she can't run the accounting applications on her Win2000 Professional computer. Prior to the upgrade, Helen could run it. Helen is a member of the Local Users group. You want the accounting applications to run on Helen's computer. What should you do?

A: Use SECEDIT.EXE to apply the COMPATWS.INF security template to Helen's Security Policy to loosen the permissions for the Local Users group on Helen's computer.

66. You have 200 client computers on your network that run Win2000 Professional. How many auditing policies should be set to audit one type of event?

A: One for each computer.

67. You have 50 MB of free disk space on drive C and 500 MB of free disk space on drive D. Print jobs are failing because the available space on drive C is inadequate. You want print jobs to be able to use the space on drive D. What should you do?

A: From the Print Server Properties dialog box, change the location of the spool folder to any existing file path on drive D.

68. What should you do before installing Win2000 Professional on an NT Workstation 4.0 computer when you want to run both systems?

A: Install Service Pack 4 or later for Windows NT Workstation 4.0.

- 69. You have a share on your local computer. You believe someone has been intentionally damaging your files. What do you do to determine who is doing this?**

A: Turn on Auditing For Objects in the Local Security Policy and select Use Windows Explorer to turn on auditing for specific files.

- 70. Saul needs access to files that are in the Accounting folder on his computer. A local group named Accounting is granted Full Control permission to the Accounting folder and the files within it. Saul is a member of the Accounting local group but he cannot access the files that he needs. What should you do?**

A: Remove Saul from any other groups that have been explicitly denied access to the Accounting folder.

- 71. You have a Win2000 computer used by several students. You use an account that does not have administrative rights for security reasons, for most activities. You want to schedule a task to run a command file named ADDUSERS.CMD that automatically adds six more student user accounts. What should you do?**

A: Schedule the task to run under an Administrative account.

- 72. You accidentally delete an OU containing 300 user objects. How should you recover the deleted OU?**

A: Restart the domain controller in Directory Services Restore Mode. Use the Backup utility to restore the system state data. Use NTDSUTIL.EXE utility to mark the deleted OU as authoritative. Restart the domain controller and replicate the changes to the remaining domain controllers.

- 73. From the Recovery Console, what command allows you to disable a service?**

A: Disable.

- 74. You schedule a task to run an MMC snap-in to perform configuration tasks on other computers. It is not completing correctly. You manually start MMC, add the snap in. You can successfully run the task, and all tasks are working correctly. You want to enable your task to complete successfully. What should you do?**

A: Use Scheduled Tasks to configure the task to run under the security context of your account.

- 75. You have a shortcut for a folder named Accounting on a network share. When attempting to configure the shortcut to be available offline, you don't see the option. What should you do?**

A: Use Windows Explorer to configure the folder to be available for offline access.

76. What are the default networking components included by default in the typical installation of Win2000?

*A: Client for Microsoft Networks.
File and Printer Sharing for Microsoft Networks.
TCP/IP.*

77. What do you need to do to Windows Backup to ensure that your registry, boot files, and COM objects are also backed up?

A: Configure Windows Backup to back up the System State data.

78. You install a 16-bit ISA sound card and manufacturer's device driver on your Win2000 Professional computer. You restart the computer, but the computer won't start correctly. You start the computer in safe mode. What should you do next?

A: Disable the sound card device driver by using Computer Management.

79. What should you do to prevent users from enabling offline access for the network share that contains a confidential report, but still allow them online access to the report?

A: Use Windows Explorer to disable caching for the records on the network share.

80. You have configured accessibility options for a user. Everything seems to be working correctly. The user leaves his computer and when he returns, none of the accessibility options work anymore. What should you do?

A: On the General tab of Accessibility Options, disable "Turn off Accessibility features after idle for X minutes".

81. A user installs a shared laser printer on his Win2000 Professional computer. The laser printer is connected to a computer named Server1. But when the user logs on to an NT Workstation 4.0 computer, the printer is not included in the list of available printers. You want to allow the user to send print jobs to the shared laser printer from any computer on the network. What should you do?

A: Configure a roaming user profile for the user's user account.

82. You have associated GPOs with your site, domain and OUs. In what order are GPOs processed?

A: Site, Domain, OU.

83. You have a Multilanguage version of Win2000 Professional. When you log on to the network by using you username_eng user account, you are not allowed to add any languages to your computer other than English. What should you do?

A: Reconfigure the Group Policy object (GPO) for the username_eng user account to allow you to change languages on your computer.

84. You upgrade your Win98 computers to Win2000 Professional. You want to remove the Logoff option from the Start menu on the new computers. Which two methods can you use to accomplish your goal? (Choose two)

*A: On the Advanced tab of the Taskbar/Start Menu dialog box, clear the Displaylogoff option.
Use a Local Computer Policy that will not include the Logoff option on the Start menu.*

85. What parameter is used with SYSPREP to run it without generating a security identifier?

A: NOSIDGEN

86. What is true of a Windows 2000 Domain Controller?

*A: A Domain Controller can be demoted to be a member server and vice-versa.
All Domain Controllers in Windows 2000 are of equal status with no primary.
Changes to the Active Directory can be made on any Domain Controller.*

87. Using a user's account on his computer, you configure the StickyKeys, FilterKeys, and ToggleKeys accessibility options and then log off of his computer. The user then boots the computer, but the accessibility options are turned off. What should you do?

A: Use Utility Manager to configure the accessibility options to start automatically when Win2000 Professional loads.

88. By using disk-duplicating software you install Win2000 Professional on 20 PXE-compliant computers in the Graphics OU. The reference computer is configured to have Win2000 Professional default desktop settings. Users in the Graphics OU have home folders specified in their user account settings. The home folders are located on the \\Server1\Users network share. You want to change the default path of the user's My Documents folders to their home folders whenever users log on to the network. What should you do?

A: Create a Group Policy object (GPO) for the Graphics OU to redirect the My Documents folder, and define the UNC path \\Server1\Users\%Username%.

89. Where is the Group Policy Template (GPT) for a GPO stored?

A: In the SYSVOL share.

90. Where do you view all shares in use on your computer?

A: Computer Management\System Tools\Shared Folders\Shares.

91. You have a Windows 2000 Professional portable computer that is shared by users in one of your departments. You want to configure a roaming user profile so that users can logon from any location including by using a dial-up connection. You log on to the computer by using the local Administrator account. You create user accounts for the users. When you attempt to configure each individual user account profile to be a roaming profile, you fail. You receive the Change Profile Type dialog box. What should you do?

A: Connect the portable computer to the network, and configure the user accounts for a roaming user profile.

92. What file name extension identifies a Windows Installer file?

A: .MSI

93. You deploy an application to users in the Graphics Organizational Unit. You want to create a custom installation for three users, who are members of the Graphics OU. You want these three users to be able to access additional text, filters, and other graphics options for the software. What should you do?

A: Create the Advanced Software OU within the Graphics OU, and add the users. Create a .MST file, including changes and apply the modifications to the Advanced Software OU.

94. You want to deploy a Win2000 Professional service pack to 10 computers in the Development Organizational Unit. You create a Windows Installer package file for the service pack. You use the package file to successfully install the service pack to other computers in the domain. You assign the package file to the Development OU. After the installation, you notice that the service pack was not installed on any of the 10 computers. You want to ensure that the service pack is successfully installed on the computers in the Development OU. What should you do?

A: Add the user accounts from the Development OU to the DACL. Grant the user accounts Read permission to the service pack deployment directory.

95. You are upgrading two computers from NT Workstation 4.0 to Win2000 Professional. You successfully upgrade the first computer. During the upgrade of the second computer, a power failure interrupts the upgrade. The second computer can no longer run NT Workstation 4.0. It also does not support booting from the Win2000 Professional CD-ROM. Using the first computer, how should you recover the failed upgrade?

A: On the first computer, run Makebt32.exe from the Bootdisk folder on the Win2000 Professional CD-ROM. Restart the upgrade with the new disks on the second computer.

96. Which group scope has its memberships listed in the Global catalog?

A: Universal group.

97. Sam wants to be able to work at home on files that were created in the office on the company network. Prior to logging off the network, Sam enables Offline Files. But, when he attempts to access the files, they are not available. What should you instruct Sam to do?

A: At the office, make all files available offline. Sam will be able to access his files the next time he logs off the network.

98. Which services or protocols must be installed to automatically turn off the power of the display and hard disk after a period of inactivity?

A: APM and ACPI.

99. How can you restore short file names to long file names during the Windows 2000 setup?

A: Build \$\$RENAME.TXT file and put it in the folder that contains the files that need to be converted.

100. After a user leaves the company, you move all of the files from his home folder (NTFS, EFS enabled) to his manager's folder. When the manager attempts to open any of the files, access is denied. What should you do to allow the manager to access the files?

A: Log on to the network as a Recovery Agent. Decrypt the files for the manager.

101. Users on the network save their work files in home folders (NTFS, EFS enabled) on a network server. The partition also has disk quotas defined. A user reports that she cannot save or update any files to her home folder, due to insufficient disk space. Other users are not experiencing this problem with their home folders. What should you do?

A: Increase the server disk quota entry for the user.

102. Your network only uses TCP/IP. You install Win2000 Professional on a computer named Client2. Client2 has the following configuration:

**IP address: 10.10.20.234
Default Gateway: 10.10.13.1
WINS Server: 10.10.13.10.**

You cannot connect to shared resources on ServerB and ServerC by using UNC names. You check the configuration settings, and see that the gateway of the subnet which Client2 belongs to is 10.10.20.1 (an exhibit will be shown). What should you do?

A: Configure Client2 to use a default gateway of 10.10.20.1.

103. You configure the Internet connection to enable Internet Connection Sharing. After you configure the connection, you cannot see or connect to any shared resources on your local network. What should you do?

A: Configure the dial up connection to disable shared access.

104. You install Win2000 Professional on a computer named Client2. You connect to shared resources on ServerE daily. Suddenly you are no longer able to connect to ServerE. Other users can connect to ServerE. You ping ServerE. You verify that all of the servers are connected to the network and are running correctly. What is the most likely cause of the problem?

A: The router configuration. It shows Client2's IP is 10.10.167.4, and Client2's Router IP is 10.10.164.3.

105. Your company has two domains; troytec.com and rileyales.com. ServerA is in the troytec.com domain. It runs IIS, Microsoft Proxy Server 2.0, and it is an Intranet site. You want Win2000 Professional computers in the rileyales.com domain to access the Intranet site by connecting to the URL http://ServerA rather than its fully qualified domain name. What should you do?

A: Add troytec.com to the Domain Suffix Search Order on the computers.

106. What kinds of services does Win2000 Professional support for the highest level of security for VPN traffic across the Internet?

A: Kerberos and IPSec

107. You install a DOS application on your Win2000 Professional computer. The application uses the Win2000 Professional default settings Autoexec.nt and Config.nt. Your video adapters are set to 16-bit, 1024 x 768 and default refresh rates. On the first desktop, you create a shortcut for the DOS application, using the default PIF settings. Both monitors are unable to display the application. Both monitors function correctly when you run Windows based applications. What should you do?

A: Change the color setting for both video adapters to 256 colors. Reconfigure the shortcut properties to run the DOS based application in full screen mode.

108. What software specification allows several protocols to be bound to a single network adapter?

A: NDIS

109. How should you configure your laptop to save the contents of memory to the hard disk and then to shut down when the sleep button is chosen?

A: Configure the power settings to use the Hibernation option.

110. You have 3 sites; Houston, Paris and Rome. Houston is connected to Paris via a 256K WAN link. Houston is also connected to Rome via a 256K WAN link. Paris is connected to Rome via a 56K WAN link. You wish to create site links so that you can optimize Active Directory synchronization traffic. How many site links should you create?

A: 3

111. You have 3 sites; Houston, Paris and Rome. Houston is connected to Paris via a 256K WAN link. Houston is also connected to Rome via a 256K WAN link. You wish to create site links so that you can optimize Active Directory synchronization traffic. How many site links should you create?

A: 2

112. You have a 2 MB Windows Bit Map. You have compression enabled on your C:\ drive. The file has been compressed to 1 MB. You try to copy the file to a floppy disk but you get the message “Insufficient disk space”. How can you copy the file to the disk?

A: You must use a third party compression tool to compress the file.

113. You then attempt to install 32-bit application printer software that came with a new laser printer. During the installation, you receive the error message “failed to load WINPRINT.DLL. Specified module could not be found” (an exhibit will be shown). What should you do before you share the printer with other users?

A: Obtain and install the WDM-compliant device drivers and printing software for the printer.

114. What two types of DFS are supported by Windows 2000?

A: Fault-Tolerant DFS and Stand-Alone DFS

115. What type of event is audited to log changes made to the system time on a computer?

A: Privilege Use.

116. Your Win2000 Professional computer has a built in 33.6 kbps modem. You install a 56K ISA based modem. When the installation is complete, you notice that the 56K mo-

dem is not functioning. Device Manager shows that the 33.6K modem and the 56K modem are conflicting with each other. You want to configure Win2000 Professional to use only the 56K modem. What should you do?

*A: Using Device Manager, disable 33.6K modem.
No action required on 56K modem.*

117. You want to install Win2000 Professional on 100 MPS compliant computers. Each computer has two 550 MHz processors, and are configured identically. One of the computers will be used as a reference computer for deploying Win2000 Professional to the others. You install Win2000 Professional on the reference computer. You view Device Manager and notice that the drivers for the second processor are not installed. You want to add support for the second processor on the remaining 99 computers. What should you do?

A: Use Device Manager to add the appropriate HAL to the reference computer to support the second processor, and then create a disk image.

118. What is the minimum processor specification for Windows 2000 Professional or Windows 2000 Server on an Intel-based computer?

A: P133

119. In a default installation to an Intel-based computer, which folder is used as the destination of Windows 2000 Professional?

A: WINNT

120. What needs to be included in the [UNATTENDED] section of the UNATTEND.TXT file to convert a FAT or FAT32 partition to NTFS during an unattended install?

A: FileSystem=ConvertNTFS

121. You wish to create a Windows 2000 Professional startup floppy disk set. What command would you run to create the disk set?

A: Makeboot A:

122. You want to use the Remote Installation Service (RIS) to install Win2000 Professional on a client computer. What services must be available?

*A: DNS Server.
DHCP Server.
Active Directory.*

123. How can you apply OU GPO settings to only some of the user objects in the OU?

*A: Create a security group containing only the users that will use the GPO settings. Give this only this security group both READ and APPLY GROUP POLICY permissions on the GPO.
Move the user objects that do not require the GPO settings to a sub OU within the parent OU. Use the block inheritance setting on the child OU to stop the parent GPO settings being applied.
Create a security group which contains all the users that will not use the GPO settings. DENY this security group APPLY GROUP POLICY permission on the GPO.*

124. You are working from home using a dial-up connection. You can access resources on the first subnet, where the dial-up server is located, but you cannot access other resources on the network. What dial-up parameters should you change?

A: The default gateway on remote network.

125. What are the two types of user groups in Windows 2000?

A: Security and Distribution.

126. You have associated a GPO with both a parent OU and one of its child OUs. What statements are true of how the GPO settings will be applied?

*A: If the GPO settings are compatible with each other then BOTH GPOs will be applied.
If the GPO settings are not compatible then the child OU GPO settings take precedence.*

127. You have created three GPOs for your site, domain and OU. Each of the three GPOs has been configured with “No Over-Ride”. Which GPO settings are guaranteed to be applied to the OU?

A: Site.

128. Where in the Group Policy settings would you configure computer Startup and Shutdown scripts?

A: Computer Configuration.

129. What is true of L2TP?

*A: L2TP supports header compression.
L2TP supports tunnel authentication.*

130. What is true of PPTP?

*A: PPTP require an IP-based network.
PPTP provides data encryption.*

131. What is the maximum number of WINS server addresses that can be listed on a WINS client?

A: 12

132. You are planning to install Win2000 Professional on your Win98 computer. You want to select the best file system and features. You must to be able to use both operating systems to access all disks. Which file system do you use?

A: FAT32

133. A user wants to use a dial-up connection to your network. He will be using a Smart Card for authentication. Which authentication protocol must he use?

A: EAP

134. True or False: A domain and a workgroup can share the same name.

A: True

135. What parameter in the [GUIUnattended] section of the UNATTEND.TXT file allows you to skip presetting the regional Settings?

A: OEMSkipRegional

136. What must be done before a computer running Windows 2000 can join a domain?

A: A computer account must be created or added to the domain database.

137. What name is given to the site link created by default on Windows 2000?

A: DEFAULTIPSITELINK

138. Which information is available in the Windows 2000 Security Dialog Box?

*A: Name of user account in use.
Name of domain user logged onto.*

139. What entry is required in the [Data] section of the .SIF file during a Win2000 CD-ROM boot pre-installation?

A: [Data] Unattendedinstall=yes Msdosinitiated =0 Autopartition =1

140. What protocol allows users to print to a URL over an Intranet or the Internet?

A: IPP

141. Which user interface provides additional feedback and sort options to view installed or available application by size, frequency of use and time of last use?

A: Add/Remove Programs Wizard.

142. What switch is used with WINNT.EXE to specify the file name for the setup information file?

A: WINNT.EXE /I

143. What is required to join a workgroup?

A: A new or an existing workgroup name.

144. What statements are true of assigning an application using Group policy?

*A: Assigned applications can be installed by document invocation.
Assigned applications are resilient and can automatically repair themselves.
Assigned applications are advertised on the user's desktop.*

145. You realize as you attempt to install Windows 2000 Professional that your computer does not support booting from the CD-ROM. What should you do?

A: Start the computer by using the Setup boot disks. Insert the Windows 2000 Professional CD-ROM when prompted, and then continue Setup.

146. Two of your users have connected to their home folders on the same file and print server. When the users query the amount of free disk space on the server they receive different answers. Why is this?

A: The users have different amounts of unused disk quota on the server.

147. Which feature of Windows 2000 allows you to secure your network traffic so that it cannot be easily read by anybody capturing the packets?

A: IPSec

148. You have just installed a DHCP server on your Windows 2000 network. No leases are being obtained from the DHCP server. You have checked the scope settings and they all appear correct. The scope has been activated. Why are no clients obtaining leases from this DHCP server?

A: The DHCP server has not been authorized.

149. Why can't users log on locally to a domain controller?

A: PDCs do not maintain local security databases.

150. What statements are true of moving objects in Active Directory?

*A: Any permission assigned directly to that object will be moved with the object.
Multiple objects can be moved simultaneously.
Any currently inherited permission on the object will be lost and replaced with inherited permissions from the new container.*

151. How many domain controllers and DNS servers must be online to allow you to join a domain?

A: One DC and one DNS.

152. Your company has a forest consisting of two Domain trees. Each Domain tree contains a root Domain and two sub-Domains. You have just created a Domain Local group and would like to assign permissions to this Domain Local group to resources within your company. To which resources can permissions be given to this Domain Local group?

A: Only resources in the same Domain as the Domain Local group.

153. Your company has a forest consisting of 2 Domain trees. Each Domain tree contains a root Domain and two sub-Domains. You have just created a Global group and would like to assign permissions to this Global group to resources within your company. To which resources can permissions be given to this Global group?

A: Any resource in the forest.

154. How can you reduce the time it takes for a client to process a GPO, that only modifies user settings, to determine what settings need be applied?

A: Disable the computer configuration settings for the GPO.

155. Where in the Group Policy settings would you configure user logon and logoff scripts?

A: User configuration.

156. Which folder redirection option would you choose to enable folders to be redirected to different alternate locations?

A: Advanced

157. Using a Group policy, you want to automatically remove software on a user's computer. What two removal options are available?

A: Forced, Optional

158. What are the differences between assigning an application to a user and assigning an application to a computer?

A: Applications assigned to the user will be available whenever the user logs on. Applications assigned to the computer are available to all users of that computer. Applications assigned to a user require the user to either invoke a program before it installs. Applications assigned to a computer are automatically installed the next time the computer restarts.

159. What tool is used to create a distribution tool and create a single UNATTEND.TXT file to pre-install 500 Win2000 computers?

A: Setup Manager.

160. You have recently published a software upgrade to your users using a Group policy. You have noticed, however, that when a user invokes an associated document, the older version is installed. How can you install the newer version using document invocation?

A: Change the upgrade to be mandatory. Alter the software order listed in the GPO so that the newer version is higher than the older version.

161. By default, what is available on Windows 2000 Professional?

A: Customized Start Menu and Automated Recovery System (ARS).

162. What is true of a Global catalog in Windows 2000?

A: A Global catalog contains only the commonly queried objects and attributes for a forest.

163. You install a new video card into your Win2000 computer. After the installation, the system will not start. What should you do?

A: Use Recovery Console

164. You want to create a shared Internet connection on your network. Users should not have any permission other than HTTP and FTP access. How should you configure the port settings?

*A: Configure HTTP port settings to 80.
Configure FTP port settings to 21.*

165. You have installed and configured fax service on your Win2000 Professional computers. A user states that she is not able to receive faxes, but can send them. What should you do?

A: Use the Fax Service Management tool to enable the device to receive faxes.

166. You update some Windows 98 machines to Win2000 Professional. After rebooting, you get a virus warning from your BIOS. The MBR is damaged. What should you do?

A: Boot from the Win2000 Professional installation CD-ROM and repair the Master Boot Record.

167. What section do you need to add to your answer file to load third party SCSI drivers?

A: AC

168. Windows Installer Service should be run in what security context?

A: In the security context of the system, not the context of the current user to avoid lack of rights or permissions.

169. By default, what happens to the files that were redirected when a folder redirection policy is removed?

A: The redirected files remain in the redirected location.

170. A single network logon is made possible in Windows 2000 due to support for which protocol?

A: Kerberos.

171. You have a laptop that is configured for a SCSI adapter when docked. You want to maximize the battery performance of your laptop computer. You do not want the SCSI adapter available when you are not docked. What should you do?

A: Start the system without the docking station. Disable the SCSI adapter device for the current profile.

172. You are creating a dial-up connection on your Windows 2000 portable computer to connect to your customer's dial-up server. Although you are not sure which type of server your customer is using for dial-up connections, you still want to ensure that your dial-up connection authentication is secure and that your logon information is not sent in plain text. You view the Advanced Security Settings dialog box. What options should you select to obtain your goals?

A: Challenge Handshake Authentication Protocol (CHAP)

*Microsoft CHAP (MS-CHAP)
Microsoft CHAP Version 2 (MS-CHAP v2)*

173. How do you stop the printer from notifying you when a print job has printed?

A: In the server properties of the Printers system folder, clear the Notify when remote document has been printed option.

174. When you perform a new installation of Windows 2000. As Setup must request a DHCP (server assigned) IP address during GUI-mode Setup before you can choose between using a static IP address and using DHCP to obtain an IP address automatically, this may cause a Dynamic Domain Name System server to retain an incorrect DNS-host-name-to-IP-address mapping. How can you prevent this from occurring?

A: Create a Setup answer file (WINNT.SIF) that contains the static IP address you intend to use.

175. How do you make a web page available for offline viewing in Windows 2000?

A: On the Favorites menu in Internet Explorer, click Add to Favorites. Select the Make Available Offline check box. To schedule updates for the page, content download, click Customize.

176. You want a certain group of your Windows 2000 Professional computers to be able to communicate with other Windows 2000 computers on your network. However, you do not want the computers to communicate with computers that are not running Windows 2000. How should you configure a security policy on each computer to ensure that the computers can only communicate with other Windows 2000 computers?

A: Use Security Configuration and Analysis to import the hisecws.inf security template file to modify the security settings.

177. You are upgrading several Windows 95 computers to Windows 2000 Professional. Most have the same hardware, but there are many different peripheral devices throughout the company. How can you verify that all of the hardware in use is compatible with Windows 2000 Professional?

A: Use Setup Manager to create a Setup.inf file. Add the entry ReportOnly=Yes to the [Win9xUpgrade] section of the answer file. Run Winnt32.exe /Unattend:Setup.inf.

178. You install Windows 2000 Professional on a new APM-compliant laptop computer. But whenever you attempt to shut down the computer, the power remains on, even when you use the power button. What should you do?

A: Restart the computer, use the Power Options in Control panel to enable APM, then reboot.

179. You configure a user's Windows 2000 Professional computer to use the on-screen keyboard and StickyKeys options. You save the accessibility option settings to a shared folder on the local hard disk of the user's computer. You want to configure the same options for another user. You log onto the second user's computer using his local user account. You access the shared folder over the network, and select the .acw file from the shared folder. You receive an error message stating that there was a problem loading the specified file. What should you do?

A: Change the permissions of the .acw file on the shared folder to allow read access for the second user's account.

180. You are configuring a roaming user profile for a Drew Morgan. You create a user account named DrewM on a Windows 2000 Server. You define a network profile directory path named \\Server1\Profiles\%Username%. When Drew logs onto the computer, he receives the error message, "Cannot locate your roaming profile". What should you do?

A: Change the %Username% variable to DrewM.

181. You replace the uniprocessor computer in your design department with new MPS-compliant computers. Each computer has two 550-MHz processors. You install design software that includes Win32, Win16, and DOS-based applications. When users use a Win16-based application, they do not notice an improvement in performance compared to using the uniprocessor computers. What should you do?

A: Replace the Win16-based applications with available Win32-based applications.

182. Your computers have both Windows NT Workstation 4.0, and Windows 2000 Professional. You configure the hard disk on each computer to have a two 4-GB partitions. Windows NT Workstation is installed on drive C, and Windows 2000 Professional is installed on drive D. You configure a disk quota on drive D to prevent users from saving data on the disk. How can you prevent users from saving files to drive D in either operating system?

A: Use Windows NT Workstation to configure NTFS permissions on drive D to deny users Write permission.

183. A user in your Accounting OU reports that their mouse is not working. You log onto the domain from that user's computer by using the domain Administrator's account. You discover the user is using an old mouse driver. You install an updated mouse driver, and restart the computer. The mouse is still not working correctly. You view Device Manager, and notice the previous mouse driver is still installed. What should you do?

A: Set the Accounting OU policy for security to warn and allow the installation to override the local security.

184. You schedule a task to run after 15 minutes. After an hour, you check the Event Viewer system log. It contains the error message: “The Task Scheduler service failed to start”. You want to run the scheduled task again. What should you do before restarting the Task Scheduler?

A: Set the Task Scheduler service to log on as a Local System account.

185. A user downloads a video card driver from the Internet. You are unsure of the source of the driver. You want to ensure the user does not lose production time because of an incompatible driver. What should you do?

A: Install the driver. If the computer fails after installing the driver, restart the computer with the Last Known Good configuration to recover the original driver.

186. A user reports that their Windows 2000 Professional computer is running very slowly. What methods can you use to improve performance? (Choose all that apply)

*A: Perform a disk analysis, and use disk defragmenter.
Use Disk Clean to delete temporary files and unnecessary program files.*

187. You install a SCSI adapter and a SCSI tape drive on your Windows 2000 Professional computer. Windows 2000 Professional detects and installs drivers for the new SCSI devices. After you restart the computer later that day, the computer stops. What should you do to enable your Windows 2000 Professional computer to start successfully?

*A: Start the computer using the Recovery Console.
Disable the SCSI adapter device driver by using the disable command.*

188. You attempt to install a printer driver on a Windows 2000 computer, but receive an error message: “Error 11 – Cannot install printer driver”. How should you configure the computer to check for driver integrity and to allow you to install the driver?

*A: Use the Print troubleshooter.
Configure the computer to prevent the installation of unsigned drivers.*

189. You are preparing to deploy many new Windows 2000 Professional computers on your network. You want to be able to recover from disk failures and corrupt system files on the new computers. What should you do to configure the computers to automatically update their system configuration and emergency repair files on a scheduled basis?

A: Use Windows Backup to schedule a backup of System State data.

190. Your Windows 2000 Professional computer has a shared printer that several departments use. The Accounting department prints extremely large ledgers causing others to wait. How can you improve printing efficiency so that other users do not have to wait for their print jobs?

A: Configure the priority of the printer to 50. Add a new printer, and set the priority to 95. For the new printer, deny Print permissions for users in the Accounting department.

191. The computers in your design department have built-in USB controllers. You install a USB tablet-pointing device on each computer. A tablet icon appears in Control Panel to configure the device, but it doesn't work. What should you do?

A: Enable the USB ports in the BIOS, and re-install the USB tablet device drivers.

192. Your computer has a built-in 10-MB Ethernet adapter. You then install a 100-MB Ethernet PC Card adapter. You notice that the 100-MB adapter is not functioning. What should you do so that the Windows 2000 Professional computer uses only the 100-MB Ethernet PC Card adapter?

A: Use Device Manager to disable the device for the 10-MB adapter.

193. Your network has five Windows 2000 Servers, and 50 Windows 2000 Professional computers. The Professional computers were installed by using a RIS image on one of the Windows 2000 Servers. You need to upgrade several applications on the Windows 2000 Professional computers. The applications do not have built-in support for scripted installations. You want to accomplish the following goals:

- The upgraded applications will be installed using the unattended installation method.
- Existing user environments will be maintained.
- The network name will be changed to match its serial number.
- The RIS image and the upgraded applications are enabled as they are added to the network.

You take the following actions:

- Install the RIS image on a Windows 2000 Professional computer named Pro1.
- Install the upgraded applications on Pro1.
- Change the network name of Pro1 to %DMI-SERIAL_NUM%.
- Run RIPrep.exe on Pro1.
- Start all of the Windows 2000 Professional computers and load the RIS image.

Which results do these actions produce? (Choose all that apply)

A: An unattended installation of the upgraded applications is performed.

194. You want to configure all of your Windows 2000 Professional computers to allow access to the Internet. You do not plan on installing a permanent Internet connection. You do have a single dial-up account at a local ISP, and a 56-Kbps modem. What should you do to configure access for the Windows 2000 computers? (Choose all that apply)

*A: Configure the dial-up connection to enable on-demand dialing.
Configure the dial-up connection to enable Internet Connection Sharing.
Attach the modem to one of the Windows 2000 Professional computers, and create a dial-up connection to the ISP.*

195. You create a new dial-up connection to connect to your company's remote access server. You can connect to servers on the same segment as the remote access server, but cannot access shared resources on remote segments. What should you do?

A: Configure the TCP/IP properties for the dial-up connection to use the default gateway.

196. You create a new dial-up connection to connect to the Internet. You configure the Internet connection to enable Internet Connection Sharing. However, you cannot see or connect to any shared resource on your network. What should you do?

A: Use the ipconfig command to release and renew your network TCP/IP address.

197. You are install Windows 2000 Professional on several MPS-compliant computers. The computers are configured identically with two 550-MHz processors. You intend on using one of the Windows 2000 Professional computes as a reference computer for the other computers. After you install Windows 2000 Professional on the reference computer, you notice that the drivers for the second processor are not installed. How can you add support for the second processor on the other computers?

A: Use the System Preparation Tool with the -pnp parameter to set up the reference disk.

198. You are adding new PXE-compliant computers to your network which contains Windows NT Workstation 4.0 computes. The hardware on the new computers is identical. You are using a RIS image to deploy Windows 2000 Professional to the new computers. You successfully deploy Windows 2000 Professional on the first ten computers, but cannot install it on the remaining computers. What should you do?

A: Configure the DHCP scope to add additional IP addresses.

199. You want to create a standard installation image to install Windows 2000 Professional. The computers have different hardware and component configurations. You install Windows 2000 Professional and other standard software on one of the computers. You log on to the computer by using the local Administrator account. After configuring the applications, and customizing the desktop settings, you run Setup Manager and create the Sysprep.inf file. You copy Sysprep.exe and Setupcl.exe to the \Sysprep

folder. You run both Sysprep.exe and your third party disk imaging software. You then copy the image to several test computers and restart them. Some of the computers do not start. Some of the desktop settings are different that the original computer. What should you do? (Choose two)

A: *Copy the Administrator profile to the Default User profile. Grant permissions to the Everyone group to use the profile.
Include the -pnp parameter for the Sysprep.exe when you rerun that utility.*

200. You are upgrading Windows NT Workstation computers to Windows 2000 Professional. You create an Unattend.txt file and copy the file to a floppy disk. You start the installation on a test computer by using the Windows 2000 Professional CD-ROM. You insert the floppy disk after the computer starts. You had set the user interaction level to full unattended mode, but you are still prompted for parameters. What should you do?

A: *Rename Unattend.txt on the floppy to Winnt.sif.*

201. Users have attached USB devices and have installed device drivers that were not supported by Windows 2000 Professional. You want to configure the computers to install device drivers only for devices that are included on the current HCL. Which option should you enable in the Driver signing Options dialog box?

A: *Block – Prevent installation of unsigned files.*

202. You install an updated driver for the Zip drive in your Windows 2000 Professional computer. The computer stops responding. You restart in safe mode. The computer stops responding again. What should you do? (Choose three)

A: *Use the disable command to disable the Zip device driver.
Select Recovery Console from the Repair menu.
Start the computer by using the Windows 2000 CD-ROM.*

203. You are configuring your Windows 2000 Professional portable computer to use a dial-up connection to connect to a Routing and Remote Access server. Your computer has a smart card, and has the appropriate drivers installed. You use MMC to request a new certificate. What options should you enable in the Advanced Security Settings dialog box? (Choose all that apply)

A: *Use Extensible Authentication Protocol.*

204. You install 25 new Windows 2000 computers. Three weeks later the users indicate that 5 of the computer have stopped responding. You find that users have install USB devices that use drivers that are not Windows 2000 compliant. You want to prevent this from happening again. What would you do?

A: Configure computers to enable driver signing verification.

205. You want your Win 2000 computers to support 2 monitors. The computer is currently using 16-bit color, 1024 x 768 resolution and the optimal refresh rate. After you install the HCL compliant plug and play video adapters you notice that the secondary monitor has no image. What would you do?

A: Run Dxdiag.exe to configure adapters and configure the secondary adapter to use the optimal refresh rate.

206. You want to install Windows 2000 and a service pack on 100 new computers on your network. What would be easiest?

*A: Install Win 2000 from the Network Share
Add the service pack files to a second Network Share
Then install the service pack*

207. You have a Windows NT 4.0 Domain which has 35 Windows 2000 Professional computers. The network is divided into 5 TCP/IP subnets. You are going to install 10 more Windows 2000 and you want them to be able to resolve NetBIOS names to TCP/IP addresses. What would you do?

A: Install a WINS server and configure each computer to use WINS.

208. You are installing a Windows 2000 computer named COMP2 to your network. You have a single TCP/IP domain named HOME. You want COMP2 to be a member of the HOME domain and be able to access resources on SERVER1. What would you do?

*A: Create an account for COMP2 in the HOME domain.
Configure COMP2 to have an IP addressing of 10.10.20.78 and a default gateway of 10.10.20.1*

209. You install Windows 2000 Pro on a computer named COMP2. Afterwards you are unable to connect to a web server on the Internet using its URL. However, you can connect using the server's IP address. You want to enable COMP2 to connect to the web server by using the URL. What would you do?

A: Configure COMP2 to use a DNS server.

210. You install Windows 2000 on a computer that has a non-plug and play video adapter. You want the video adapter to use 16-bit color and 1024 x 768 resolution. The color settings are set at 16 colors and you cannot change these settings. What would you do?

A: Install the WDM-compliant video adapter and monitor drivers.

211. You want to install Windows 2000 Pro on 10 non-PXE-compliant computers on your network. These computers currently have no operating system installed. You attempt to load the computers using an existing RIS image that is on the RIS server. However, these computers cannot connect to the RIS server. You notice that the server computer running WINS has stopped responding due to disk failure. How would you solve this problem?

*A: Configure the Active Directory Server to run DHCP.
Create and use the RIS boot disk*

212. You want to install Windows 2000 Pro on 10 non-PXE-compliant computers on your network to the Accounting segment. You attempt to load one of the computers using an existing RIS boot disk. However, you cannot connect to the RIS server. The router does not support BOOTP, so existing computers use manually configured IP addresses. How would enable the computers to connect to the RIS server?

A: Move the Windows 2000 Server running AD to the Accounting segment.

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