

Exam #073 – NT Workstation

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Knowing these facts yielded a 93.3% score on the 70-073 exam (28 out of 30 questions correct). I hope it helps you as much as me! If you make it available to others, please keep intact the contact information to the original author.

Look for study guides with questions and answers in one place. Use an index card to hide the answers while you try to get the right answer. Printing a book with an entire pool of questions, and then the same pool again with answers, just makes the book look falsely thick. Find a computer CD-ROM based study guide that lets you answer questions from memory, and then see the right answer if you get it wrong – or at least try it until you get it right. It's unforgivingly annoying if you get it wrong and then can't go back and find what the right answer was to a question you may not see again and can't remember the subtle detail of that made you get it wrong. In my opinion, the goal at this time is *learning*, not accurate *evaluating*.

GENERAL KNOWLEDGE

IPC unidirectional, non-guaranteed comm channel with mail slots.

Permissions specification syntax: (folder)(files).

NT Workstation does not do fault tolerant file systems.

* Restriction is “Least-Least-Most” for Share-NTFS-Combination.

NTFS File permissions override NTFS Folder permissions.

NT permission heirarchy: Execute (X), Read (RX), Add (RWX), Change (RWXD).

NTFS folder permissions: Add (WX).

** NTFSPermission **retained** only if **moved** to **same volume**. (“RMS”)

NTVDM is NT virtual DOS Machine.

NT v4.0 does OS/2 1.3 only, not OS/2 3.0 WARP.

Calculate # FAT entries using “divide by 13, round up, add one” – count the period.

FAT limits – 512 entries, 1 extended partition per physical disk.

POSIX.1 compliance requires 1) hard links (more than 1 name per file), and 2) case sensitive naming.

NT allows MS-DOS to access hardware on none of the platforms.

Volume and Stripe sets use a maximum of 32 (Thirty Two) physical disks.

HKLM has SAM, System, Security, Hardware and Software, S⁴H. (*not Account*).

System default profile & SID in HK_USERS.

? NT Workstation does not support SPARC CPU, nor DOS device drivers.

Viewing security log requires membership in admin group.

Registry entries in HKU have Name, Value, and Type.

Account Disabled is different than Account Locked Out.

Home Directory is different than User Profile, both specified per user (not groups), although \$username\$ can help.

Intel boot order: MBR, NtLdr, boot.ini, ntdetect.com, ntoskrnl.exe, ntbootdd.sys (if scsi).

RISC boot order: MBR, osloader.exe, ntoskrnl.exe, btbootdds.sys (if scsi).

INSTALLATION AND SETUP

Det'n compatibility w/ NT HCL (hardware compatibility list), and NT HQ (hardware qual) program on CD-ROM.

When share is created, default is Everyone Full Control.

Three groups are created on every workstation: Guests, Admin, Backup.

Two group types are created on every *workstation*: Local & System.

To simultaneously edit multiple registries over the net, use System Policy Editor.

Sysdisk.inf and cmdline.txt are used during interactive installs.

Execute a batch file before UPS shutdown via the UPS Execute Command File option.

Set Date & Time in Date & Time tab.

UPS timeout box is in seconds.

To get only short names, set Win31FileSystem = 1.

NT profiles are different than W95, not useable for WFWG or W3.1

NT 3.51 convert.exe does HPFS to NTFS, but NT 4.0 convert.exe does not.

Convert.exe (3.51 or 4.0) will convert FAT to NTFS, but not NTFS to FAT.

HPFS w/ NT v3.x must convert to NTFS before installing NT4.0.

Winnt.exe switches:

/b – floppyless, copies /i386 files to a temp hard drive directory

/t – temporary file location

/x – create 3 floppies.

/ox – omit creating 3 floppies.

/u – unattended (with /s to designate source of \i386 stuff)

ERD can do these tasks: verify NT system files, inspect startup environment, inspect boot sector.

ERD will do registry only if you select “Inspect Registry Files”.

If pswd doesn't replicate to other computers, check if it's a local user account.

Install from MS-DOS (w/CDROM that is not NT compatible) using “winnt.exe /b” or copy /i386 files to a hard drive and run winnt.exe from there.

Undo NT over W95 by restarting w/W95 disks and write system files, and delete NT files and directories.

Roaming profiles on NTWS using UserMgr and CP, System.

NDS requires tree and context.

Install tape driver using Tape Devices in CP, SCSI in CP, SCSI, restart.

If you turn on SCSI tape power after computer power, must CP, Tape Device, Detect.

Answer file (unattend.txt) can do text-mode setup answers.

Always one UDE, one answer file per hardware platform configuration.

Unattend.txt answer file can be created with setupmgr.exe.

Specify drivers during text-mode portion with answer file.

Install NT & non-interactive apps, specify unattend.txt and UDE on command line.

? Install NT & apps requires difference file, snapshot file, and answer file.

Answer file provides answers to some or all questions.

UDF provides specific information for individual users or computers.
Specifying a UDF for use with an answer file (unattend.txt) is optional.
UDF file can specify users, hardware config, set of sections to merge into answer file.
MS-DOS can run winnt.exe to install NT.
After installing MS-DOS over NT, restore the boot partition.
W95 does not do roaming profiles.
Logon banner via LegalNoticecaption and LegalNoticetext in registry.
Specify logon message in NT Workstation by editing the registry.
Auto-logon by specifying DefaultDomainName and DefaultUserName in registry.
* FAT is good to 400 MB, maximum FAT volume is 4 (FOUR) GB (same as vRAM).
What systems are *source* compatible across all NT? Win32 and Posix.
Hardware profiles do NIC/modems/screens.
Profiles do desktop appearance.
On RISC computers, the system is loaded by osloader.exe.
RISC installations require FAT.
Win NT requires 486 and 12MB RAM, minimum of 120 MB disk space.
Create 3 system disks using winnt.exe.
* For Intel boot, require: ntldr, boot.ini, ntdetect.com (*not* hall.dll)
Boot.ini timeout of 0 (zero) doesn't show the boot select screen.
Install in a server domain requires 4 things: domain name, computer name, admin pswd, NIC info.
To install NT from a server, you need: Domain Name, Computer Name, Password for Admin, Network Card Settings.
W95 upgrade to NT requires separate directory, manual configure, reinstall apps.
Volume set gives no performance gains.
Stripe set has the best performance.
* No stripe or volume sets on boot & system partitions.
SCSI w/no BIOS requires ntbootdd.sys.
NT 3.51 to NT 4.0 using winnt32.exe preserves accounts, desktops, network, tool prefs (all four).
Shares create-able by (only) Admin and Power Users.
When *copying* user accounts, Username, Name, ChangeAtLogin, AccountDisabled are left blank.
When templating a new user, only Rights and Permissions are NOT copied.
Setup laptop to do TCP/IP and dial-up nets, choose option Portable.
Typical setup includes NT server and Novell server access for the client.
To setup for *NT and Novell* on the net, choose option Typical.

NETWORK

NetBUI is Microsoft only, and is not routable.
255.0.0.0 is a Class A subnet (know others, too).
A server has a maximum of 256 inbound RAS connections.
A workstation has a maximum of 1 inbound RAS connection.
To run NW app for NT use CSNW (Novell does not do apps on it's servers).
To let NW access an NT server printer (reverse direction), use FPNW.
Default transport for CSNW is IPX/SPX.
Protocol that allows CSNW to work is PPP.
GSNW is better for large network groups.

CSNW “Preferred Server” implies NW 3.x
CSNW “Tree” and “Context” implies NW 4.x
To map a drive to NetWare 3.x, select Preferred Server option and set server name.
If CSNW is unable to find the NW server, check for matching frame types.
CSNW allows access to NW printers and NW files.
Even with CSNW, can’t do any NW administration.
To use only *apps* on NW server, need only NWLink (not CSNW).
When to specify a preferred server in CSNW? When in bindery emulation mode.
NW bindery emulation – select preferred server in CSNW, and specify preferred server.
Netware utilities executable from NT – only syscon.
Change NW 3.x password via CSNW using setpass on the NW server.
Change NW 4.x password via CSNW using Cntrl-Alt-Del.
Set Ethernet frame type in Network, Protocols menu tab.
Manual IP requires default gateway and subnet mask.
TCP/IP on a workstation requires default gateway and subnet mask.
If trouble authenticating under PPP, can edit registry to create ppp.log.
Multi-RAS uses same phonebook, separate phone numbers.
W95 normally gets policies from PDC; get it from others using load balancing.
NT doesn’t do sharing through the CP; instead use the net share command.
RAS ensures same permissions as if locally using Int. Domain Security.
Resolve NetBIOS names over TCP/IP with WINS.
Executive service that controls hardware access is device drivers (not HAL)
Change domain name in the Network option of Control Panel.
HP requires DLC protocol.
Multi-Link callback RAS without ISDN is not possible.
Temporarily disable a protocol with network Bindings tab.
Protocol chosen by the client.
System performance increase by reordering (only) the client bindings.
Modifying the binding order results in connect more rapidly to other computers.
Map IP address to physical NIC address with ARP.
When SLIP dial-up, manually set IP.
When PPP dial-up, ISP provides IP.
Static intranet, then IP for internet ISP connection comes from manual setting via CP, Network.
Accessing subdomains from outside requires DNS Server.
Need to replicate between controllers logon scripts and system policy for domain.
Accessing remotely is same or more restrictive (for shares, L-L-*Most* kicks in).
To install network components without a real NIC, use MS Loopback Adapter.
Mandatory User Profiles are .man, and Roaming Profiles are .dat.
New profiles not received due to conflicting individual system policies.
To gain access to another domain, Mary Jo must 1) use CP, Network to change domain (besides logoff, logon), or 2) ask admin to make trust relationship.
Create system-wide policy in \netlogon on PDC.
New system profiles not received due to \netlogon not replicated to the BDC.
Policy/Profile hierarchy: 1) Individual System Policies, 2) System Group Policies, 3) Local (default user), roaming, or mandatory user profiles (“ISU”).

To disable live internet access for security, disable Server service on the machine.
Resolve UNIX host names with DNS or LMHOSTS file.
LMHOSTS file uses fixed IP addresses; WINS and DNS together use dynamic addresses.
Network adapter card generates errors to the System log file.
RAS callback cannot do multi-link dialing (except 2-channel ISDN).

RUNNING APPLICATIONS

OS/2 subsystem gains graphical capability w/ Presentation Manager.
Schedule backups w/ AT command.
Related backup called a family set.
Single backup operation generates a backup set.
Backups: Normal & Incremental. Backup Copies: Copy, Daily, Differential.
“Differential backup” (really a copy ‘cause it doesn’t set the archive bit) does not change the archive bit.
If the question doesn’t say “no bit change”, you must choose between Normal and Incremental.
Virtual memory space for each application is 4 GB.
MS-DOS apps each in their own NTVDM.
Compatibility w/W3.1 info is retained in HK_CLASSES_ROOT (file associations).
\\admin.ceg.com\policies\admin.ceg.com\policies is an example of \\infoservices.domain\foldername.
To run 16-bit windows app in own space, use cmdline START or Run START from the Start menu.
CACLS.EXE allows command line changes to NTFS rights:
 /e – edit
 /g – grant
 /r – revoke
 /p – replace
The smallest unit to schedule is a thread.
Force bound apps to run in NTVDM rather than OS/2 using forceDOS command.
OS/2 bound application on a *RISC* will always run in an NTVDM subsystem.
Save registry with “Backup Local Registry” checkbox.
Backup can save registry only on the computer where tape drive is installed.
WNT can connect to NW 4.x, NW 3.x, print queues, change pswd (all four).
To start win16 from cmd line, syntax is start /switch executable.exe
With 16-bit programs active, NT uses NTVDM and WOWEXEC.
Memory shared only when in the same NTVDM.
Separate Win3.1 apps in separate NTVDM (only one W16 NTVDM available).
NTVDM accesses files autoexec.nt and config.nt.
Autoexec.nt and config.nt provide a location to load files necessary to run Win16 apps.
Use non-default config files by editing the associated .pif file.
Check if processor usage is high by monitoring %Processor Time or System Object Processor Queue Length.
Only Default NTVDM runs multiple 16-bit Windows apps.
Win-16 apps in same NTVDM share memory, not pre-emptive.
%Processor >90%, check memory and processes before adding 2nd processor.
Disk performance counters enabled with command diskperf -y.

PRINTING

To share printers w/ W95, W3.51, W4.0, must install drivers for each.

MacIntosh printers require AppleTalk.

For MS-DOS (not UNC aware) printing, map physical port to network printer using “net use LPTx \\server\print-share”

When multiple printers point to same print device, higher priority numbers print first.

For a TCP/IP print device, must know IP of print server, and printer name.

For print notification when using CSNW, select “Notify when printed” in CSNW.

For page separator using CSNW, select “Print Banner” option.

Protocol for printers direct on net is called DLC.

* To restart a jammed print job, select Restart from Document Menu.

Disk thrashing while printing implies insufficient disk space for spooling.

Disk write, then print job doesn't appear, free disk space, or move spooler location (registry pointer).

Same printer, mine first: create a separate Printer, same device, priority 99.

(same for groups by leaving only one local group access per printer).

Audit printers with File and Object Access.

Printer, File, Sharing selects groups w/access – diddle w/their jobs only.

Printer control levels: No Access, Print, Manage Documents, Full Control.

If you give Everyone Manage Docs permission & they can diddle w/others'.

Others' print queue entries can be accessed using Manage Documents.

Modify only my own print queue using Print permissions.

Monitor printer use with File & Object access events in User Mgr, and Print Access in Printers Folder.

TROUBLE SHOOTING and REPAIR

View STOP errors with Event Viewer.

Search registry with regedit (not regedit32).

Boot with VGA base video is /BASEVIDEO (not /VGA)

To take back the boot sector, use the emergency repair disk.

Monitor CPU usage with Task Manager, Performance Monitor (NT Diagnostics gives static *information*, not *monitoring*).

Monitor paging file and log over several days with PageFileBytes or PoolPagedBytes.

To determine memory leak, monitor Page Faults/Second.

To forward trap messages across net, use SNMP services.

To remotely monitor, use SNMP software.

Monitor remotely using protocol SNMP.

Device.log is in \winnt\system32\ras.

If boot failure, start NT with 3 setup disks (not ErepairD, “repair” <> “boot”).

User account and file Security done with rdisk /s. (SAM)

STOP error info written to file by specifying properties in Startup/Shutdown Tab.

User data base lost in a crash, restore by rebooting 3 floppies & select Inspect Registry Files.

Roaming profiles with User Manager and Control Panel, System.

Application “out of error” and can't select fonts, default printer is undefined.

If ntoskrnl is reporting missing or corrupt, check ARC pathname (ntoskrnl is last off the boot disk – uh.., “system” disk in NT lingo—, after boot.ini points to it).

Save memory with Savedump utility.

STOP error dump to pagefile done by Savedump.
Memory dump to floppy with Dumpflop.exe.
Read memory dump and generate text file with Dumpexam.
Crash dump for an application program specified with Dr. Watson.
If nt detect fails, use Setup Boot Disk, and use Emergency Rescue Disk.
Operating System support files on “boot” partition, boot stuff on “system” partition.
Environment variables changed via CP, System.
If get “BOOT: couldn’t find ntldr,” you need to use Setup Boot and ERD (ntldr is first off the disk – this message is from the MBR).
If “ntdetect failed”, restart with disks and repair installation.
If “I/O Error processing boot sector file”, bootsect.dos is missing.
If MS-DOS says “non-system disk” bootsect.dos is missing.
Improve paging performance with one for each disk, off /winnt volume, “optimal” initial setting.
Page file changed via CP, System.
Paging file change by System Prop, Performance, Change.
Page file size is Physical RAM + 12 MB.
Pages being written to free up working set for page faults w/pages/sec (not faults/sec).
Screen blanks during changes: Frequency, Palette, or Desktop Area.
Debug RAS with device.log, and Dial-Up Network Monitor.
NT Virtual Memory Manager manipulates pages.

AND A FEW FINAL THOUGHTS:

Setup.inf? No. 3 other install files. An .exe counts as a “file”.
2 ISDN, 4 channels, each w/ it’s own phone number.
Video – last known good.
DHCP
Boot.ini timeout, or registry change.
Must have an unattend.txt, or required install is not accomplished.
One UDF for individual user and computer info, not hardware info.
Bad Win-16 apps. How isolate? One default NTVDM (the WOW).
Install from DOS w/ winnt (not winnt32).
Install DOS over NTFS with fdisk.exe.
How make shutdown tab go away on login screen? Key and Tab?
v4.x tree & context; v3.x specify a preferred server name.
To get rid of blank page in CSNW, remove “FF” option (not banner page).
When trouble shooting, monitoring (real time) is different than getting static config info.