

# NICs NETWORK INFORMATION CONNECTION

AN ESSENTIAL SUPPORT RESOURCE FROM THE INSTITUTE FOR NETWORK PROFESSIONALS

## Goal Getting

by Darryl Alder

Do you feel frustration at day's end because you didn't accomplish what you planned? Do you put off big projects while keeping your e-mail in-box clear and then end up working on weekends? Are there white papers and technical journals on your desk that you haven't touched in over a month? Do you keep putting off that important second certification? Do you suffer from an "urgency addiction" (take the Urgency Index Quiz at: [http://www.usaweekend.com/respond/covey\\_urgency\\_quiz.htm](http://www.usaweekend.com/respond/covey_urgency_quiz.htm) to see)?

If you answered yes to any of these questions (or scored above 75 on the quiz), you probably haven't taken charge of your life—at least not as effectively as you could. You may feel a lack of fulfillment and stress. To remedy these feelings, set some new goals this year.



### What the Skill is and Can Do

The following excerpt from Benjamin Franklin's autobiography is a great insight into goal setting and how it leads to accomplishment:

"I wished to live without committing any fault at any time; I would conquer all that ... was right and wrong, ... for this purpose I therefore contrived the following method.

"I proposed to myself, ... thirteen names of virtues all that at that time occurred to me as necessary or desirable, and annexed to each a short precept, which fully expressed the extent I gave to its meaning.

"My Intention being to acquire the habitude of all these virtues, ... I made a little book in which I allotted a page for each of the virtues. ... [so] I might mark by a little black spot every fault I found upon examination ... that day.

"I determined to give a week's strict attention to each of the virtues successively. ... I could go through a course complete in thirteen weeks, and four courses in a year. And like him who having a garden to weed, does not attempt to eradicate all the bad herbs at once, which would exceed his reach and his strength, but works on one of the beds at a time, and having accomplished the first proceeds to a second; so I should have, (I hoped) the encouraging pleasure of seeing on my pages the progress I made in virtue, by clearing successively my lines of their spots, till in the end by a number of courses, I should be happy in viewing a clean book after a thirteen weeks, daily examination. "

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## Benjamin Franklin's Virtues

- |                   |   |
|-------------------|---|
| 1. Temperance     | Eat not to dullness. Drink not to elevation.  |
| 2. Silence        | Speak not but what may benefit others or yourself. Avoid trifling conversation.   |
| 3. Order          | Let all your things have their places. Let each part of your business have its time.  |
| 4. Resolution     | Resolve to perform what you ought. Perform without fail what you resolve.   |
| 5. Frugality      | Make no expense but to do good to others or yourself: i.e. waste nothing.   |
| 6. Industry       | Lose no time. Be always employed in something useful. Cut off all unnecessary actions.  |
| 7. Sincerity.     | Use no hurtful deceit. Think innocently and justly; and, if you speak, speak accordingly.   |
| 8. Justice.       | Wrong none, by doing Injuries or omitting the benefits that are your duty.  |
| 9. Moderation.    | Avoid extremes. Forbear resenting injuries so much as you think they deserve.   |
| 10. Cleanliness.  | Tolerate no uncleanness in body, clothes or habitation.   |
| 11. Tranquillity. | Be not disturbed at trifles, or at accidents common or unavoidable.   |
| 12. Chastity.     | Rarely use venery but for health or offspring; never to dullness, weakness, or the injury of your own or another's peace or reputation. |
| 13. Humility.     | Imitate Jesus and Socrates.   |

Each day he set aside time for reflection.

Franklin lived this plan for most of his life. In his later years he reported progress in all the virtues except humility. Of it he said, "For even if I could conceive that I had completely overcome it, I should probably be proud of my humility."

Franklin's plan, though long in duration, was simple. He thought about what he wanted. He wrote it down and tried to describe it in words. He devised a timetable and evaluated his progress against it. He rewarded himself by removing "spots" as he improved.

His ultimate reward is recorded in his autobiography: "...I entered upon the execution of this plan for self examination, and continued it with occasional intermissions for some time. I was surprised to find myself so much fuller of faults than I had imagined, but I

**had the satisfaction of seeing them diminish."**

### Understanding the Skill: Mission First; Goals Follow

Franklin did not start with his "virtues," but with this resolution: "...I conceived the bold and arduous project of arriving at moral perfection." This was his mission statement and working to gain the virtues helped him accomplish it.

To give your goals a deeper purpose you will need

Making a personal mission statement can take years to develop, but if you would like to draft a quick one, try the FranklinCovey site: <http://www.franklincovey.com/customer/missionform.html>. This short exercise takes about 15–20 minutes and will give you a workable draft to cut and paste into a document on your computer.

a mission and long-range goals. Franklin's example is a powerful model to follow. With friends, he discussed what constituted a virtue. He explored many

good characteristics and decided which would be best for **him**. He reflected on his findings and recorded his thoughts. After a time he was able to identify and define each trait he wanted.

Similarly, once you have a mission statement, you make more effective use of your time because goals emerge from a greater purpose. Your goals will be your most important tasks.

Between mission and day-to-day living there is a lot of space. In his book *Time Power*, time management consultant Charles Hobbs explains the other steps we need to take in goal setting. His Productivity Pyramid shows how our immediate goals (daily action list) should be based on intermediate goals. These intermediate goals should come from long-range goals that in turn come of what he calls unifying principles (or mission).



Long and intermediate objectives give us more structure; they are a road map to our ends. Usually long-range and intermediate goals are not urgent; they don't "ring" (like the phone or incoming e-mail) and they seldom have deadlines. Unless we evaluate them against a mission, on a regular basis, they may go undone. Life's urgencies and time wasters have a way of filling an uncontrolled day.

Hobbs suggests planning a personal life goal in each of six categories: spiritual, professional, financial, social, intellectual/cultural and physical/recreational. He feels this leads to more balanced long-range goal setting. You may have to search for your own set or

look to other lists to get ideas (i.e. Sullivan's *Work Smarter, Not Harder*; Calano/Salzman's *CareerTracking*). Personally, I base mine on eight roles in my life (i.e. self-renewal, spouse, parent, employee, supervisor, citizen, etc.)

Once you have long-range objectives, each goal should be broken into several intermediate goals. For example, your professional goal could include continuing education, a reach into management and dressing better. Each of these in turn needs more steps to achieve them. For example, you can't wait for the boss to train you so you will need to schedule several education opportunities. Similarly, to get management ideas you may need to check out a few books for the technical professional (try *Learning to Manage the Technical Professional* by Stein, pub. Addison Wesley). And of course, to improve your wardrobe, start by looking around at those ahead of you in your organization and then go out and get some new duds to mirror their dress. Basically the idea is to break down bigger goals into tasks and record each on an annual calendar.

At the top of Hobbs pyramid is Immediate Goals or Daily Action Lists. Daily evaluating and planning fits into Ben Franklin's method very well. Each night he spent an hour or so reflecting on the day and jotting down ideas for improvement. But my experience suggests our industry does not lend itself to daily planning.

There are just too many unknowns and if you are going to get to those important intermediate and long-range tasks you'll need to schedule them a bit at a time. My solution to this problem is weekly planning. Each Sunday, for 30 minutes,



I sit down and review the week. I look to see if the big tasks were done. I think about my mission and different roles to try and find a task

or two for the week that pushes me closer to my mission. Then I schedule the week and work it as best I can. When things conflict, I look for an alternative activity that gets me toward my mission another way.

## Using the Skill

Darrell Harmon, corporate trainer for ProfileMedia, suggests the SMART acronym as a way to use the skill of "Goal Getting."

**Specific**—it has to be clear in your mind what you want and how you will know when you've achieved it.

**Motivating**—it should get you up in the morning (and even at night) and really give you a purpose for striving.

**Achievable**—it has to be realistic; if not, it is actually demotivating, not only for that particular goal, but also for the whole goal setting process

**Relevant**—it must be based on your mission and be truly meaningful to you. Someone else's goals won't motivate or satisfy you like your own. As Franklin did, it's O.K. to consult others when defining what is important to you, but *you* ultimately decide.

**Time-based**—there should be a deadline or some other clear indication of when your goal is to be achieved. If not, your goal dissolves into a pipe dream.

So get SMART when setting your goals.

## Summary

Many people conduct their careers according to other's expectations. They do what is expected of them—and barely more. But like Franklin, those who set goals achieve a great deal. Strong goals increase your purpose and help your career keep moving. Setting, measuring and reporting goals is a crucial part of leadership—a doorway to management. Goals make more of your day than minutes and hours, they help you focus on things that matter most by connecting you to your mission. Why not give this new year greater focus by setting some new goals this week?

# Troubleshooting Modems

by Keith Parsons

## Basics

If you are experiencing trouble with your modem the first step is to use the control panel applet 'Modem' to determine what modem Windows thinks you have.

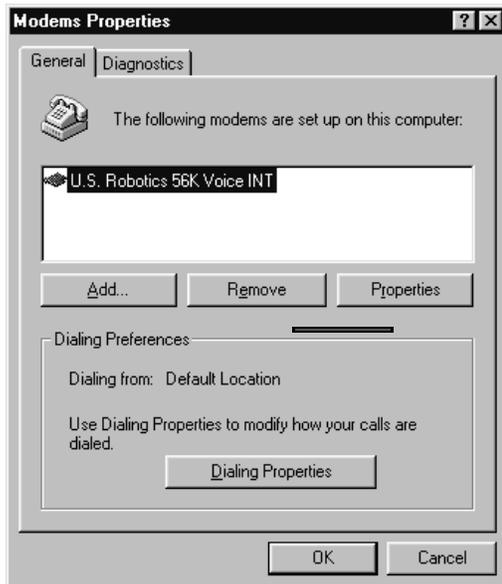
Start – Settings – Control Panel – Modem – Properties

to is compatible with your modem. Inexpensive phone line testers are available at most electronics stores. This tester can test for polarity, and to confirm you are on an analog line, not a digital PBX. PC Card modem's are especially susceptible to the additional current from a digital PBX line.

## Testing Your Modem

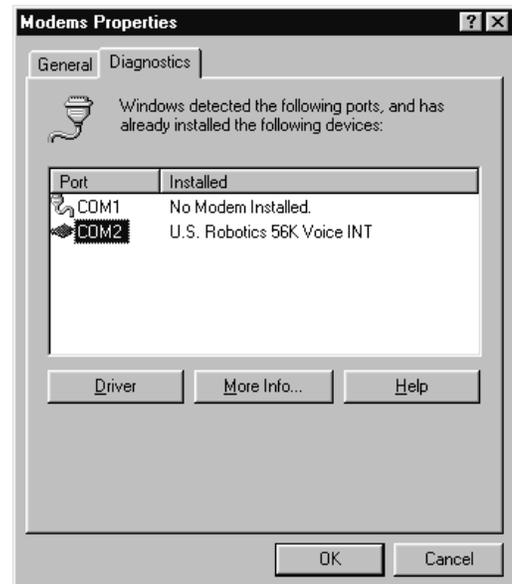
To test your modem,

Start – Settings – Control Panel – Modems – Diagnostics

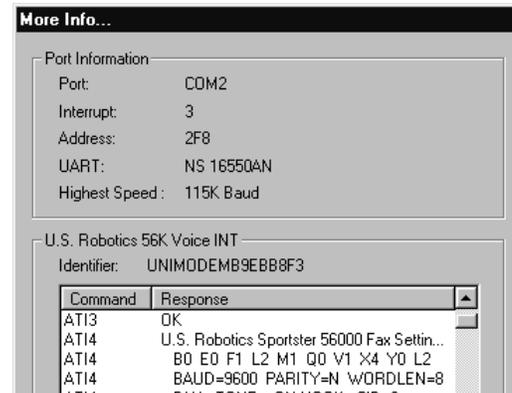


In this dialog box you can see which modems and drivers Windows has loaded. From here you can Add or Remove modem drivers, or even run a quick diagnostics on your modem. Additionally you can check on the following:

- Modem Name
- COM Port Connection
- Maximum Speed
- Connection Preferences
- Call Preferences
- Port Settings



Select the modem you'd like to test from the dialog box, then click on the Diagnostics button. This asks Windows to send a query to the modem. This will test to see if the modem is available, on the port set, and see if it responds. If the modem is available you'll receive the following response.



You would normally want your modem connected to COM1 or COM2 to avoid potential conflicts with other devices.

Set you modem port speed to the maximum possible for your modem.

Check your phone line for possible interruptions, like other phone extensions being used, or call waiting. (Modem's just love getting the little

click that accompanies a call waiting ring, they think its a signal to get off the line)

Test your phone line with a telephone line tester to make sure the line you've connected

The next step in testing your modem is to see if the connection to the telephone system is working by attempting to make a connection to a BBS or ISP using the HyperTerminal Program.

## Modem Initialization Strings

A modem initialization string is a series of simple ASCII commands to instruct the modem to perform certain functions. From HyperTerminal you can access the modem and send these commands manually. Commands to configure the modem to auto-answer, to answer on the 3<sup>rd</sup> ring, or to just turn the speaker off when dialing.

Years ago the modem manufacturer Hayes developed a standard set of commands, each prefaced with AT. Other modem manufacturers have since followed suite and most modems today are programmed to respond to these Hayes compatible command strings.

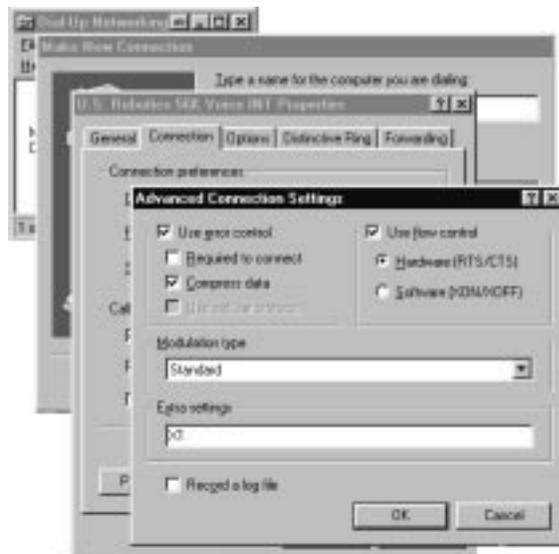
If your modem's initialization string is not correctly configured for your specific modem, you might not be able to connect at all, and at the least your connection will be less efficient than you modem is capable of.

Below are a couple of good resources for helping your to configure your modem with initializations strings specific to your modem.

- [www.accessone.com/support/modems/modem\\_init.html](http://www.accessone.com/support/modems/modem_init.html)
- [www.ibm.net/cgi-bin/redirect?file=hlpcr/html/modems\\_modem-list.html](http://www.ibm.net/cgi-bin/redirect?file=hlpcr/html/modems_modem-list.html)

Once you have the specific initialization string for your modem, you can attach it by following these steps:

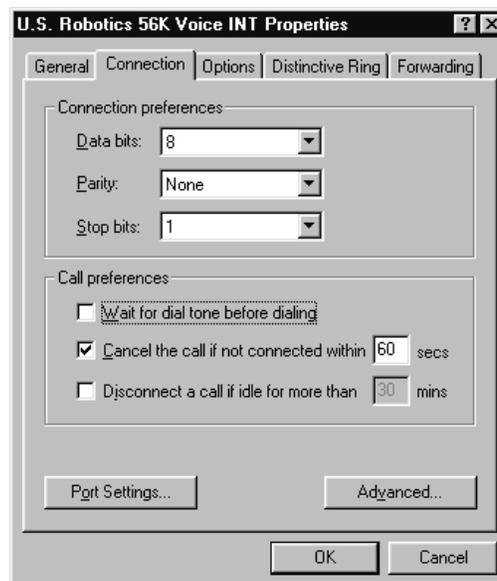
Dial-Up  
Networking –  
ISP Icon –  
Properties –  
Configure –  
Connection –  
Advanced –  
Extra Settings  
– OK



## No Dial tone Issues

On a recent trip to Europe, I was faced with a different challenge. By default, most modems only recognize dial tones created by the phone systems in the US and Canada. My modem couldn't recognize the dial tone in Germany. Thus the modem refused to connect to my ISP in Germany.

To configure a modem to 'ignore' the dial tone, a X1 command needs to be added to the initialization string. You can manually make the changes to the initialization string, or use a special Windows configuration option to make a new Dial-Up Connection configured for no dial tone:



Dial-Up Networking – New Connection –  
Configure – Call Preferences – *Wait for dial  
tone before dialing*

Remember to look at modem troubleshooting using the tools provided by the Windows Operating System to help find, configure and test your modem. Also, be sure to use telephone line test tools to confirm the proper analog telephone line availability. So go out and test those modems.

# Troubleshooting Internet Connections with Windows 95/98

by EdKrach, CNP

PROBLEM	POSSIBLE SOLUTION
<p>You use a notebook to connect to the Internet via a LAN at work and via a modem at home. You cannot browse some web sites or access your email at home.</p>	<p>Check to see if your TCP/IP settings for your NIC are overriding your dial-up TCP/IP settings. Disabling your NIC while traveling will solve the problem in most cases.</p> <p>Another possible solution is to use DHCP to assign IP addresses and DNS servers for your office LAN.</p>
<p>You receive a "Connection with the server could not be established" error.</p>	<p>Make sure you have dial-up network installed with the proper protocol. Check your DNS settings so they are pointing to correct DNS servers. Try pinging a domain like www.domain.com and then ping the IP address. If you can ping the IP address, but not the domain, then you have a DNS configuration problem.</p>
<p>You notice that web sites are loading very slowly</p>	<p>Check your dial-up connection speed. Sometimes you connect at a slow speed and disconnecting and redialing can correct the problem.</p> <p>Line noise can contribute to a slow connection. Have your phone company check your line.</p> <p>Check with your ISP to see if they oversold bandwidth. You might have a fast connection to the ISP, but are sharing their bandwidth with too many other users.</p>
<p>You cannot connect to your Internet service provider.</p>	<p>In Dial-Up Networking, check the Server Types dialog box to make sure your server type is correct.</p> <p>If you have a PPP account, make sure the server type is not SLIP or SLIP.</p> <p>If you have a SLIP account, make sure you have the correct type selected, either CSLIP or SLIP. Also, make sure you typed the correct IP address in the SLIP Connection IP Address dialog box.</p> <p>Select the Network option in Control Panel to make sure TCP/IP is bound to the Dial-Up or network adapter.</p>
<p>You connect to the Internet service provider but cannot obtain information from other Internet sites.</p>	<p>Try using the ping command to connect to other Internet sites.</p> <p>To test a connection using the ping command .</p> <ol style="list-style-type: none"> <li>1. At the command prompt, type ping followed by the name of the host you are trying to reach.</li> <li>2. If ping does not succeed, type ping followed by the IP address of the host.</li> </ol> <p>If this works, you are properly connected to the Internet, but not properly connected to your DNS server.</p> <p>OR</p> <p>If this does not work, you may not be connected to the Internet. In either case, contact your ISP.</p>
<p>You cannot view or download hypertext documents..</p>	<p>To view or download hypertext documents, such as World Wide Web home pages, you must use an Internet browser, such as Netscape Navigator or Microsoft Internet. Both browsers are on all Technical Resource CDs.</p>

PROBLEM	POSSIBLE SOLUTION
The modem is dialing but not connecting	Check the modem configuration; change the configuration if necessary. Verify all parameters, such as access codes, area code, country code, and dialing properties. Try choosing the driver for Generic Modem Drivers. If you are using an external modem, check the cable and verify that it is connected correctly. Check the COM port configuration in Device Manager.
The modem repeatedly drops the connection.	Check for a bad or loose serial cable to the modem. If all connections are tight, test for a faulty cable by replacing it with a working cable, and retest the modem communications. Check the connection between the RJ-11 telephone outlet and the modem. Verify that the connection is firmly plugged in and well connected. Try using a different telephone line. If you have ruled out other factors, consistent modem errors might be due to problems in the telephone line used for communication. Disable call waiting, if it is in use. The call-waiting feature can interfere with remote connections and file transfers. If you use this feature regularly, disable it only temporarily, when the modem is in use. Check communications with the host computer. The communications problems might be due to the host computer not connecting or repeatedly dropping the line. Try using a lower speed in Modem Properties, in the Modems option in Control Panel.

## Keyboard Shortcuts for Windows 98

*As listed in the Windows 98 Resource Kit.*



To copy a file.

Press CTRL while you drag the file to a folder

To create a shortcut

Press CTRL+SHIFT while you drag the file to the desktop or a folder

To close the current folder and all of its parent folders

Press SHIFT and click the Close button on the folder.

To tab through pages in a properties dialog box

Press CTRL+TAB or CTRL+SHIFT+TAB

To switch between opening a new window and closing an existing window

Press CTRL and double-click a folder.  
If you have more than one window open, this operation closes the active window.  
If only one window is open, this operation will open a new window.

To bypass Autorun when inserting a CD-ROM

Press SHIFT while inserting the CD-ROM

# Implementing Supporting Microsoft Internet Information Server 4.0 Exam Preparation

by RexMoffitt

## Exam Details

Exam Name: **IIS 4.0**

Exam Number: **070-087**

Current Status of Test: **Available**

Number of Questions: **55**

Passing Score: **727/1000**

Time to take Exam: **90 minutes**

Simulations: **Yes**

Certifications Exam Counts Toward: **MCSE Core, MCP, MCP+I, and MCSE+I**

## What to Know for the Exam

- Index Server SSL and certificates Security rights needed to run ISAPI and CGI scripts.
- Subnetting Performance tuning like bandwidth throttling, HTTP Keep-Alives, etc.
- Management Console (MMC) Know where MIME mappings are stored
- How to allow users to use files with non-standard extensions How to troubleshoot ODBC and SQL errors.
- How to restrict IP addresses.
- How to create Virtual Directories on an FTP Server and a WWW server.
- Logging with FTP and WWW servers.
- How to assign different ports to servers
- Security settings.
- How to improve performance without limiting the number of connections.
- ISAPI filters.
- Which ports are used for the different services?
- How to implement HTTP headers.
- Authentication methods.
- Directory annotation.
- Minimum requirements for IIS.
- SMTP settings NTFS and share rights



## Administration

### MMC - Microsoft Management Console

Properties are inherited through the site heirarchy (Site, Directory and Files), unless specified otherwise in the individual property sets of the lower level items. For example, the directories and files beneath them will inherit Site settings.

A web site operator is an individual who has limited administration rights on an individual website. This administrator only has the rights to change website settings, not IIS settings. Web site operators can be assigned to a website by accessing the website's properties, clicking the Operators tab, and adding the proper user accounts in the web site operator window.

The MMC can stop, start or pause services.

To stop, start or pause services, either:

- A) Click the respective stop, start or pause icon in the toolbar menu.
- B) Right-click the service you would like to affect, and click *Start*, *Stop* or *pause*.

To remotely administer IIS, specify within the address which port to connect to, such as: <http://www.cramsession.com:6967/iisadmin/>.

HTML administrator cannot start, stop and pause services, and cannot add MIME registry changes.

### Authentication

Authentication methods available:

- Allow Anonymous - Any visitor can access your site.
- Basic - Uses user names and passwords to verify access.
- Windows NT Challenge/Response - Uses user login access through the domains User Manager to verify rights.
- SSL Client Certificate - Certificate installed on the client system is used for authentication verification.

If user access rights are changed while IIS is loaded, you must either wait 15 minutes for the change to happen, or stop and restart the corresponding service for an immediate change.

Web users are prompted for authentication only when either:

- Anonymous access is disabled.
- Anonymous user is denied access to a resource.

When challenge/response is required, a non-challenge/response browser (non-MS browser) will receive an *Access is Denied* error message.

If a browser supports only basic authentication, do not turn basic authentication off in IIS to prevent site inaccessibility.

IIS read permission allows the visitor to read or download files.

You must provide a user name and password for directories that are located on an NTFS partition on a remote server.

To avoid passing user ids and passwords on the network, use challenge/response in WWW and allow ONLY anonymous in FTP.

Remote virtual directories require an NT user account that can access them.

If IIS is located on server1, and a virtual directory is located on server2, and the two systems do not share a common NT domain, you must add an equal user account to both server1 and server2.

Client certificates can be mapped to NT accounts.

NTFS permissions and IIS:

- Content = Read
- Programs = Read and Execute
- Database = Read and Write

To prevent anonymous user access to certain directories:

- Remove guest group from NTFS permission
- Assign IUSR\_WEB no access

When only anonymous accounts are used in FTP, Check both Allow Anonymous Connec-

tions and Allow Only Anonymous Connections in the Security Accounts tab of the FTP site's properties.

## WWW

There are two ways a user can access a virtual directory:

- Links.
- Type the alias in the URL name space.

Spaces in virtual directories will cause problems for older browsers.

If you don't specify the IP address of a virtual server to a virtual directory, all virtual servers will see the virtual directory.

When replicating your web site to multiple servers, use the same name to get to any site. Create separate entries with the name of the web server as an alias.

The default user must have the logon local right in order to access the WWW pages on the server.

To improve download time for web pages, increase the HTTP keep alive time.

Virtual directories on another server:

- Create a share on the remote server
- Use UNC path for remote server and share
- Enter a user ID and password to connect with
- The remote server must be in the same domain, or add a user ID from with access in both domains.

You can only create one home directory per virtual server.

A scripts directory under a virtual home directory handles the scripts for that virtual home directory.

A common scripts directory not assigned to a virtual home can handle scripts for all virtual servers.

Directory browsing is enabled per site, not per page, directory or virtual server.

Virtual servers are for the WWW services only.



Virtual directories are referenced by alias names. The alias is tied to a virtual directory in the directory tab.

If you delete the IIS admin virtual directory on the server that you are administering, you'll be unable to use the HTML administrator.

### **FTP**

To enable directory annotations:

- Insert AnnotateDirectories REG\_DWORD=1 in registry.
- Create ~ftpsvc~.ckm in each directory.



Some browsers cannot handle having more than one line in the FTP welcome message, and will receive a 404 error.

Changing the TCP Port number within the FTP Site Properties will

require the client to change their FTP software to the corresponding TCP port in order to connect properly.

Types of FTP directory listings:

- DOS - date, time, size, name
- UNIX - permissions, owner, group, size, date, time, name.

### **Ports**

Port	Number
HTTP	80
FTP	21
GOPHER	70

### **Logging**

Logging can be enabled for only the services desired, not for pages, files, etc.

Text file logging has minimal performance impact.

Logging to a SQL database takes more resources.

You can determine hit counts for page from the logging file.

Only one log file can be created for all WWW virtual servers.

You can track the logins of Anonymous users within the log file.

CONVLOG.EXE - Used to convert IP addresses to DNS names, and to convert web log files to the NCSA Common Log File format.

### **Performance Tuning**

You can limit bandwidth for IIS by clicking the limit bandwidth box. This limits the bandwidth available for WWW services (specifically .HTML file transfers), to make more bandwidth available for other services.

Bandwidth can be limited individually per site.

ASP applications, CGI scripts and databases are CPU-intensive, in comparison with standard .HTML and FTP file transfers.

Calculate bandwidth by adding 4 bits for a total of 12 bits per byte:

- i.e. 56,000 bytes take 56k\*12 to transmit.

Upgrade to faster network architecture (100 BaseT, FDDI) when the network utilization is over 60%.

### **IIS/SQL**

.IDC files contain the name and location of the .HTX file, ODBC datasource name (DSN), SQL statements, and user ID/password (both optional).

.IDC communications require 32-bit ODBC drivers.

.HTX file is an HTML template to display requested SQL data.

Changing the transport protocol between a SQL and IIS servers (on different machines) prevents hackers from accessing SQL via TCP/IP.

Three files are required for connectivity between IIS and SQL:

- .IDC
- .HTX
- HTTPODBC.DLL

If IIS and SQL servers are in different domains, either a trust must be setup between the two

domains or the IUSR\_WEB account has to be added to the SQL domain.

A special one-user license (per SQL Server) is necessary to will allow unlimited internet access.

If challenge authentication is enabled in IIS, it prevents logging onto remote SQL server. You will need to use basic authentication, or install SQL server on the same server as IIS.

### **Index Server**

Index files occupy approximately 40% of the corpus.

Index Server can search ONE catalog per query.

There are two ways to monitor the performance of Index Server:

- Performance Monitor
- .IDA script

You can make Index Server merge more frequently by forcing a merge from the web administration page, or by reducing the maximum number of persistent indexes in the registry by decreasing MaxIndexesValue.

Index server is started when a query is executed and is stopped when the WWW service is stopped OR the server restarted.

.IDQ are similar to .IDC files, and are used as helper files to assist in query conversion from WWW. They contain the input from the HTML form filled in by the user. They specify information such as:

- Scope of query
- Query restrictions
- Query itself
- Name of .HTX file

Avoid irrelevant Index Server hits by adding noise words to  
WINNT\SYSTEM32\NOISE.ENG.

Avoid unwanted hits in Index Server by creating separate catalogs for each virtual directory with different contents, and associating separate catalogs with respective virtual servers.

Having separate catalogs in IS fixes *I know the document is there but my query doesn't return it.*

Index Server queries that take too much CPU time and return null results.

[www.inpnet.org/NICs](http://www.inpnet.org/NICs)

Three step filtering process for Index Server:

- Content filtering - Extracts text from the file.
- Word breaking - Identifies words within character stream
- Normalizing - Removes capitalization, punctuation, and noise words.

Types of indexes:

- Word lists - Words extracted from docs in memory as soon as document is filtered.
- Shadow indexes - Persistent (stored on disk, not memory) - created by merging word lists and other shadow indexes.
- Master index - Persistent, highly compressed; contains indexed data for large number of documents created by master merge. Merges shadow indexes and current master index.

Can have multiple shadow indexes in a catalog.



### **Subnetting**

Decimal	# Class A Hosts	# Class B Hosts	# Class C Hosts
.192	4,194,302	16,382	62
.224	2,097,150	8,190	30
.240	1,048,574	4,094	14
.248	524,286	2,046	6
.252	262,142	1,022	2
.254	131,070	510	NA
.255	65,534	254	NA

### **Error Description**

Unauthorized; Requests required user authentication.

Forbidden; Server understood the request but refuses to fulfill it. Authentication will not help. Common when trying to access SSL enable web page without SSL enabled browser.

File not found; Requested resource can not be found. Virtual Directory could have a space in its name.

Internal Server Error; Anonymous user account does not have the log on local right.

Bad gateway; Error could be caused when trying to access SQL database with incorrect DSN in the .IDC file.

# The Certified Network Professional

by DeniBerger



Respected, experienced, professionalism — all are characteristics that we like to be known for. How do we gain such titles?

**Respect...** *To feel or show deferential regard for; esteem.* In today's society many people will do anything to gain another's respect. Teenagers often join gangs to gain respect among peers. People in business sometimes fall into politics to gain corporate respect. What can set you aside from the rest?

**Experience...** *Active participation in events or activities, leading to the accumulation of knowledge or skill.* Experience comes from weeks, months, and often years of hard work. Experience is not something that can be handed over on a silver platter.

**Professionalism...** *Professional status, methods, character, or standards.* Being a professional according to Rusaw is "a person who, by education, training, and experience, performs work, analyzes and solves problems, makes decisions, and promotes ethics associated with a particular field of study."

Getting to these characteristics is what the founders of the Certified Network Professional (CNP) envisioned as they crafted the CNP in their minds.

For two years planners mulled the idea of the CNP. Then Keith Parsons became the project manager and synthesized those ideas into what is now the Certified Network Professional. Since that time there have been 172 individuals that have earned the CNP credential.

## Why Obtain the CNP?

Just like the IEEE committee needed a quality standard for the hardware industry, the network computing industry needs a quality standard

for network professionals. Back when computers were new each computer company had their own hardware and software, each was proprietary to its own kind. The IEEE committee was formed and they set standards that each company had to abide by. These standards have become known among all parts of the computer industry. Now, there are many quality standards for each vendor, all that are compatible with another.

Becoming certified in a specific field shows that you are specialized in a particular vendor's product. For example, those who certify as a CNE show that they are specialized in Novell. Likewise, those who certify as MCSE show that they are skilled in Microsoft products. But having both certifications shows that you are committed to the networking industry. It tells others you are knowledgeable, skilled, and professional. That is where the CNP Program begins.

In order to become CNP you must have at least two certifications. Each certification or area of specialty must be from different vendors. For example, if a candidate has a Novell CNE and a Novell ECNE, the candidate may only use one certification to count towards their certification. Currently, the CNP program accepts certifications from 10 vendors listed below.

Area of Specialty	Approved Vendor Programs
Network Operating Systems	Novell CNE*/ECNE/MCNE, Banyan CBE/CBS, Microsoft MCSE, IBM CLSE, Bay Networks Expert
Groupware	Lotus CLP
Internetworking	CISCO CCIE
Network Analysis	CNX
Networked Hardware	Compaq ASE, IBM PSE

\*CNE 2.x track is not eligible unless updated to a CNE3 or CNE4

## Work Experience

Work experience is another aspect of the CNP that sets individuals apart from their peers. Many of us have heard the term "Paper CNE" or "Paper MCSE". The founders of the CNP wanted to be sure that you could not have a "Paper CNP". So they created the work experience requirement. A CNP candidate must have a minimum of 24 months work experience. This ensures that CNPs have not simply studied to pass the test, but in fact have the experience to prove their value.

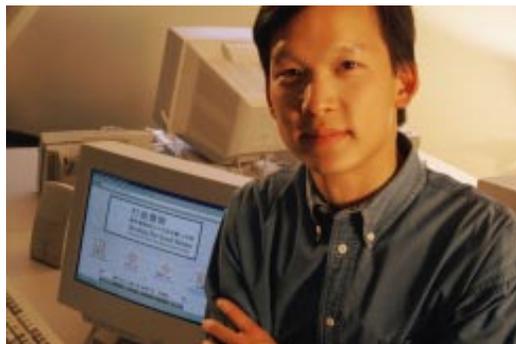
## Continued Education

Many of us have known or come in contact with someone who has reached his or her certification but stopped learning. Technology is changing everyday. The strategies that were used 10 years ago and strategies used today are very different. The continuing education requirement was crafted to meet the needs of customers. CNPs must have 20 units of continued education per year. (More information can be found at [www.inpnet.org/cnpweb](http://www.inpnet.org/cnpweb).) By abiding by this requirement, CNPs can serve to the best of their ability. Thus meriting respect, experience, and professionalism.

## Code of Ethics

In the last issue of NICs I talked about the importance of having a Code of Ethics in a company. The founders of the CNP saw the importance of this as well. The ethics committee researched codes from other industries. Much of the research pointed out what should be mentioned in the code. Points the committee thought were appropriate are:

- Define the principles and practices of a networking professional
- Provide for high standard of skill and knowledge
- Provide for a confidential relationship with people served
- Provide for a discipline and revocation process that meets the criteria suggested by the National Organization of Competency Assurance (NOCA)
- Ensure public confidence in and reliance upon the codes, principles, and practices of the CNP.



Each CNP is required to sign the code of ethics. By signing they agree to abide by the points that were carefully crafted. It also sets a standard that can be followed and looked upon by others.

The CNP credential sets individuals apart from the

rest of the world. Hard work is put into gaining and maintaining this unique certification. To be a CNP means that you are committed to your profession and that you deserve the respect you have worked so hard to earn.

[www.inpnet.org/NICs](http://www.inpnet.org/NICs)

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# Seven Reasons to Associate

by Ken Sommer, *American Society of Association Executives*

## Common Voice

The phenomenon of people joining together in associations to pursue common goals or interests to solve common problems, to speak in a common voice on matters that affect their lives, or to volunteer their time and talents, is as fundamentally American as apple pie.

## More Clout

Memberships in trade associations increases your clout. By becoming an active participant, your company can develop new business between members through referrals, as well as with marketing blitzes aimed at retailers and consumers. The collective marketing and networking opportunities can mean more business for your company.

## Setting the Standard

Setting industry standards is one of the most crucial and least visible contributions that associations make to the greater good. Associations set voluntary standards for hundreds of consumer products and services, protecting our safety and health. Standards help ensure products work, maintain high quality, and remain compatible with related products.

## Research

While you may have neither the time and money, nor the resources, your association collects and keeps valuable industry data, which allows you to concentrate on the company. From the big picture to the minute details, this information is helpful to everyone, from consumers to government officials, to

educators, and the media. Without the work of these associations, just think how much we wouldn't know.

## Learn to Lead

For those seeking leadership experience within an industry, getting involved in the affairs of your association can do wonders for your career. Volunteering for a committee is one way to expand your professional knowledge and leadership skills, helping you to advance to a position of leadership within your company.



## Resource Central

With its finger on the industry's pulse, your association can easily direct you to the best publications, surveys, research, public relations material, and legislative analyses you need to focus your business strategies. Get your hands on what could help you stay current.

## Question

When lawmakers decide how to vote on major legislation, where do they turn?

## Answer

Lawmakers rely on associations to provide expert knowledge and specialized data, helping them judge the likely effects of legislation before it becomes law. Because associations represent the industry as a whole, they bring a voice of reason and credibility to the table when supplying industry data to policymakers about everyday issues that affect citizens.

Associations work tirelessly to keep your finger on the pulse of the industry's heartbeat.

The next time you need a resource or two, contact your association.