

# TweakDUN

By Patterson Design Systems

This utility is designed to automatically change certain Windows default settings including MaxMTU (Maximum Transmission Unit), RWIN (TCP Rcv WINdow) and TTL (Time To Live). Basically, these are settings which can help prevent fragmentation in data transfer using the TCP/IP protocols used on the Internet, and greatly increase modem throughput. For some unknown reason, Windows 95 uses only default settings of 1500 for MaxMTU, 8192 for RWIN, 32 for TTL, which are generally inefficient for dialup Internet connections. In addition, you can also make changes to PMTU Auto Detect, PMTU Black Hole Detect, and Session Keep Alive. Those settings have the following defaults: PMTU Auto Detect Enabled, PMTU Black Hole Detect Disabled, and Session Keep Alive set to 60mins.

With the Final Release version of Windows 98, Microsoft has included an option to manually select the data packet size. This setting is located in the Network applet in Control Panel and has four options: Automatic, Large, Medium and Small. "Large" will set a value of 1500 in the registry for "IPMTU", "medium" sets it at 1000, and "small" sets it at 576. Automatic apparently sets it to 1500 or 576 depending upon the speed of the connection. While this is a definite improvement over Windows 95, TweakDUN still offers you a lot more flexibility to help you fine-tune your system and optimize your internet connection. In addition TweakDUN allows you to set other important variables such as RWIN and TTL, which is not included in Windows 98. Many people have reported no improvement until optimizing their RWIN setting. TweakDUN also has the built-in local hosts feature, which can further speed your internet browsing. Win98 does default to a TTL of 128 however, so this does not normally need tweaking.

**NEW!!!** TweakDUN v2.2x now supports **America Online** v3 and v4 in Windows 95/98. TweakDUN will properly set the MaxMTU for these two versions. Unfortunately America Online hard coded the MaxMTU setting into their dialer. TweakDUN relies on a bug in the AOL software to successfully change the MaxMTU setting. AOL may fix this bug at some point, so watch the TweakDUN website and if AOL releases a new version, we will try to keep everyone posted. No other MTU utility that we are aware of as of the time of release of v2.2 can properly set MTU for AOL.

In the past, the only way to change these important registry settings was to manually edit the registry, a dangerous and time-consuming task. To achieve optimum data transfer rates, it is frequently necessary to experiment with different values for these settings. This is a daunting task indeed with manual registry editing.

TweakDUN is a foolproof method to change these settings easily and quickly. Intalling TweakDUN will create a shortcut under the Programs Menu to launch the application. You will be prompted to reboot your computer after changing the settings in order for them to take effect. TweakDUN works for all versions of Windows 95/98 and Windows NT 4 and for all language versions.

Note: Some people have had good success after only changing MaxMTU. But for maximum efficiency it is often necessary to make an entry for RWIN and in many cases TTL as well. Many people have reported much better data transfer rates **only** after making these additional settings.

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- [Operating System Support](#)
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For the latest Version of TweakDUN and other Program Information visit the TweakDUN web page at:  
<http://www.pattersondesigns.com/tweakdun/>

For more detailed information on the settings that TweakDUN adjusts please visit the NetPro NorthWest website at:  
<http://www.infinisource.com/maxmtu.htm>

## Backing Up the Registry

**TweakDUN involves making changes to your registry.**

Whenever registry changes are made, it is ALWAYS advisable to backup your registry first. Use a software application such as the Win95 utility ERU, or the manual method described at the NetPro NorthWest website at:

<http://www.infinisource.com/restore.htm>

## Installation

This program requires the Microsoft Visual Basic 5.0 Runtimes. These are standard Microsoft support files, which are necessary to run any modern application written in the Visual Basic 5 programming language. These files are automatically downloaded and installed by the TweakDUN installation. If for some reason, you would like to download them separately or if you would like a TweakDUN install that contains all the Runtime files (for an offline install), you can download these other options from one of the links at the TweakDUN TweakDUN Website:

<http://www.pattersondesigns.com/tweakdun/vb5.htm>

Please make sure VB5 Runtimes are installed **BEFORE** you try to run TweakDUN.

It is not necessary to first uninstall your previous version of TweakDUN, registered or unregistered. This new version will overwrite any previous installations if they were installed to the default TweakDUN directory. The TweakDUN installation will install the following files to your hard drive in the TweakDUN directory:

Tweakdun.exe  
Tweakdun.hlp  
Tweakdun.cnt  
Sample.twk  
Tupdate.exe

These files will be installed to your windows system directory:

COMDLG32.OCX  
MSINET.OCX

## Uninstallation

If you uninstall TweakDUN you can no longer use it to change the values, which will remain where they were last set by the program.

To uninstall the program, follow these steps:

1. Open Control Panel
2. Open Add/Remove Programs
1. Select TweakDUN and Click the Add/Remove button.

This will remove all files listed in the [Installation section](#).

Note: There is no uninstallation for the Visual Basic Runtime files. This should not be needed however, since they are all Microsoft files which are supposed to be all fully backwards compatible. If you wish to take added precautions read the readme file included with the VB5 files and make backup copies of the original VB5 dll's present on your system before you perform the upgrade.

## TweakDUN Settings Overview

- [Command Line Parameters](#)
- [MaxMTU Find Utility](#)
- [Local Domain Name Lookup](#)
- TCP/IP Settings:
  - [MaxMTU \(Maximum Transmission Unit\)](#)
  - [PMTU Auto Discovery](#)
  - [PMTU Black Hole Detect](#)
  - [RWIN \(TCP Receive Window\)](#)
  - [TTL \(Time To Live\)](#)
  - [Session Keep Alive](#)

### **MaxMTU (Maximum Transmission Unit)**

This is the default packet size that Windows uses to negotiate with. When a connection is opened between two computers, they must agree on an MTU. This is done by comparing MTUs and selecting the smaller of the two. If the MTU is set too large for routers that are between the computers, these routers then fragment this information into a packet size that the router can handle. This fragmentation can double the amount of time it takes to send a single packet. Windows has a built-in MTU Discovery that will adjust for this by sending out a packet that is marked as "Not Fragmentable". Then the router sends back an error to the computer saying that the packet was too large, and Windows then lowers the MTU until there are no more errors. If your ISP uses an MTU of 576, then every time you start a connection, Windows must adjust down to this value. Even though Windows automatically adjusts the packet size, it still takes it time to negotiate an acceptable MTU. By setting this value manually, you greatly reduce the amount of work that Windows must do to negotiate. NOTE: Negotiation always adjusts downwards the value you have set, never upwards. Windows 95 Default is 1500. Windows 98 Default is 576.

### **PMTU Auto Discovery**

Enabling this setting causes TCP to attempt to discover the Maximum Transmission Unit (MTU or largest packet size) over the path to a remote host. By discovering the Path MTU and limiting TCP segments to this size, TCP is supposed to be able to eliminate fragmentation at routers along the path that connect networks with different MTUs. This requires implementation of the corresponding server side algorithm, however, and presupposes all of the servers on the entire Internet only running MSFT server software with server-side optimization features accessible from MSFT web-browser client software. Needless to say, this is rather unlikely. Nevertheless, it is not recommended to disable this setting as it would then cause an MTU of 576 bytes to be used for all connections that are not to machines on the local subnet. Disabling this setting can cause severe performance degradation because fragmentation may not be compensated for. PMTU Auto Discovery is Enabled by Default.

### **PMTU Black Hole Detect**

This specifies whether the stack will attempt to detect Maximum Transmission Unit (MTU) routers that do not send back ICMP fragmentation-needed messages. ICMP (Internet Control Message Protocol) is defined in STD5, RFC 792. With this feature enabled, TCP will try to send segments without the Don't Fragment bit set if several re-transmissions of a segment go unacknowledged. If the segment is acknowledged as a result, the MTU will be decreased and the Don't Fragment bit will be set in future packets on the connection. Enabling black hole detection increases the maximum number of re-transmissions performed for a given segment. Setting this parameter when it is not needed can cause performance degradation. However, if the router is not sending back the ICMP messages, then PMTU Discovery will not work. This can cause an even greater loss of performance. PMTU Black Hole Detect is disabled by default.

## **RWIN (TCP Receive Window)**

The TCP Receive Window size is the amount of receive data (in bytes) that can be buffered at one time on a connection. The sending host can send only that amount of data before waiting for an acknowledgment and window update from the receiving host. Matching the receive window to even increments of the MSS increases the percentage of full-sized TCP segments utilized during bulk data transmission. MSS is the MaxMTU - 40 bytes for TCP and IP headers. The RWIN default is 8192 bytes rounded up to the nearest MSS increment for the connection. If that isn't at least 4 times the MSS, then it's adjusted to  $4 * \text{MSS}$ , with a maximum size of 64K. With the Windows 95 default MaxMTU of 1500, the default RWIN is rounded up to 8760 ( $1460 * 6$ ). You can greatly improve performance by setting this to a lower value such as 4 times your MSS (MTU-40). The idea is to bring it to a value below 8192. Many people have better success with 6, 8 or even  $10 * \text{MSS}$ . In some cases, however, manually setting RWIN may decrease performance because it takes the control away from windows, and if the MTU is negotiated to a different value, then the size of the RWIN is no longer an whole integer multiple. For this to be effective you must make sure your MTU is set where it will not be negotiated to a lower value.

**TTL (Time To Live)**

TTL is a field in the IP header which indicates how long a packet should be allowed to survive before it is discarded. TTL essentially determines the maximum number of hops permitted. Windows 95 default is 32, but with the Internet growing larger all the time, it is worth changing it to the larger setting of 128. Windows 98 does default to 128 now.

**Session Keep Alive**

Specifies how often to send session keepalive packets on active sessions. This will keep connections that have stalled during a particular download session from timing out. The minimum is 1 minute. The default is 60 minutes. Recommended setting is 10.

## Command Line Parameters

NOTE: This is a special feature for System Administrators and anyone wishing to change settings using the command line. Anyone not familiar with this or not needing this capability may simply ignore this section.

These options can be specified in a Windows DOS Window or in a shortcut. All parameters are optional and may be used in any order. It is set up to easily change the values with minimum user input. The unregistered version will still display the program "about" box, the changes are entered when you hit the "OK" button, then operation continues normally. With the registered version the program "about" box is not displayed when changes are made. It is all automatic. On a system with more than one network adapter, the user must select an adapter, then operation will continue normally. These settings are for advanced users only.

TweakDUN.exe [m<INTEGER>:d] [a<INTEGER>:d] [b<INTEGER>:d] [r<INTEGER>:d] [t<INTEGER>:d] [k<INTEGER>:d] [n:<string>] [upd] [s]

- m MaxMTU  
Default is 1500.
- a MPTU Auto Detect  
0 or 1 Default is 1.
- b MPTU Black Hole Detect  
0 or 1 Default is 0.
- r RWIN Registered Version Only  
Default is 8192.
- t TTL Registered Version Only  
1 = 32 hops.  
2 = 128 hops.  
Default is 1.
- k Session Keep Alive Registered Version Only  
<INTEGER> in minutes.  
Default is 60mins.
- n: Add a Domain Name to the Hosts File  
<STRING> is a domain name.
- upd Update All Entries in Hosts File. Registered Version Only.  
This option does require user input at the end of the update.
- s Save values without any user input. **Must be the last parameter to work properly.**  
No dialog boxes will appear with the registered version on systems with only one network adapter.

<STRING> is a text string containing no spaces or tabs.

<INTEGER> is a positive integer.

d is the Default Value. It deletes the setting from the registry.

### EXAMPLES:

To set MaxMTU to 576, RWIN to 2144, and Disable Auto Detect.  
tweakdun m576 r2144 a0 s

To set all settings to default:  
tweakdun md ad bd rd td kd s

To Add an entry to the hosts file:  
tweakdun n:www.microsoft.com s

To Update All the entries in the hosts file:  
tweakdun upd s

### **Local Domain Name Lookup**

Uses the Windows hosts file as a local Domain Name server. This can greatly improve Domain Name lookups. Windows first checks this list, and then searches your normal DNS. Please see the help file for more information.

## Local Domain Name Lookup

Uses the Windows hosts file as a local Domain Name Server. When a request for a Domain Name to IP address lookup is sent out by Windows, it will first look for a Domain Name Table on the local computer's hard drive prior to sending a request to the ISP's Domain Name Server (DNS). The local Domain Name table is held in a file under the Windows directory, named "hosts". By default, this file doesn't exist. A sample hosts file named hosts.sam, which includes a brief description of a hosts file, is included under the Windows directory. This file is not active unless it is renamed to hosts with no file extension. The hosts file is still useless until some Domain Name to IP address information is included in the file. Windows doesn't provide an easy way to enter this information and keep it current as IP addresses change. Without a utility such as TweakDUN, which can refresh your hosts file at the click of a button, a hosts file is more trouble than it is worth and can be quite a headache if an IP address for a particular site changes and you forget to update your hosts file. If properly used and maintained a hosts file can speed up browsing considerably by eliminating the several seconds associated with a remote DNS lookup. Putting your POP3 (mail receiving), SMTP (mail sending), NEWS, IRC, and/or other often-used servers can speed up your Internet considerably. It is also helpful to add the server of your browser's default start page.

**NEW!!!** You can now import your Bookmarks from Netscape Navigator v3 or v4 and you can also import your Microsoft Internet Explorer v3 or v4 favorites into your hosts file. Note: Netscape Communicator 4.5 handles bookmarks differently and is not supported in the current version 2.21. This new feature makes it much easier to add all your favorite sites to your hosts file, and will greatly speed up the time it takes to connect to them from now on.

**WARNING:** If the Hosts file contains a host name with a bad IP address, the domain name will not be accessible through your browser or any other networking utility. Your web browser will typically respond with a message that "the server is not responding." For this reason, you should completely update your hosts file often, or any time you get the "server not responding" message when trying to access a website for which you have entered the IP address in your hosts file.

### Enable Check Box

Enables or Disables the Windows Hosts File. When disabled, a copy is kept in the TweakDUN working directory named "Disabled Hosts.twk". When enabled this file, if present, will be written to the hosts file.

### Configure Hosts Button

Allows you to configure your Hosts File. You can easily Add, Remove, Search, or Update entries in your Hosts file. Registered users also have the option to update the entire hosts without any prompts.

### Hosts Configure Options:

- **Search** This searches the hosts file for the Domain Name you entered.
- **Remove** This removes the entered Domain Name from the hosts file.
- **Add** This will lookup the IP for the entered Domain Name and enter it into the hosts file.
- **Update IP** This looks up the IP address of the selected Domain Name and updates it in the hosts file.
- **Manual Add** This will add the specified domain name and let you manually provide the IP address.
- **Manual Edit** This will let you manually edit the IP address of a domain name in your hosts file.
- **Update All** This will Update all of the entries in your hosts file and automatically update IPs and remove bad Domain Names. Registered Version Only.

## Configuring and Editing Your Hosts File

1. It is necessary to be connected to the Internet BEFORE you attempt to add domain names to your Hosts File. If not you will get a "Bad Domain. No IP can be found." error message.
2. Run TweakDUN and place a check mark under "Local Domain Name Lookup" next to "Enable"
3. Then click on the "Configure Hosts File" button
4. You will get a reminder warning that the Hosts file needs to be updated often. If a domain name changes its numerical IP address, you will not be able to connect to that site until you update or disable your hosts file.
5. This warning will also mention that you can "import" the sample hosts file, sample.twk, as a starting point. To do that, from the program's File menu choose Import/From File/Over Current if you have nothing there to begin with. This sample file will give you a number from common domain names and their IP addresses.
6. If you import the sample.twk hosts file list, the very first thing you should do is update the list. You can do this individually for each entry by selecting the domain name clicking on "Update IP" and then hit the "Go" button. With the registered version, you can simply hit the "Update All" button at the bottom which is the fastest way to update all the IP addresses.
7. You can also import your Netscape bookmarks or IE Favorites by clicking the appropriate toolbar button, or from the File Menu. Here again, you MUST be connected to the Internet before importing bookmarks or favorites. Do not use the dial on demand capability here... connect to the Internet FIRST.
8. If you are importing your bookmarks or favorites and you have a large collection of these, you may wish to backup your bookmark.htm file or your favorites folder and then edit your bookmarks/favorites to leave only the sites you visit regularly. Import

only the edited collection, then restore your original file or folder, and only manually add domain names thereafter. Remember you must update your IP addresses often and this can take a while if you have a large collection.

9. You can also Add, Remove, Search, or Manually add entries to your list as explained above.

10. Once you are finished configuring your hosts file, you can simply close the hosts file utility and close TweakDUN and continue to surf the web. You should notice that the sites in your hosts file are contacted and begin to load much more quickly than before. Enjoy!

Enables or Disables the Windows Hosts File. When disabled, a copy is kept in the TweakDUN working directory named "Disabled Hosts.twk". When enabled this file, if present, will be written to the hosts file.

Allows you to configure your Hosts File. You can easily Add, Remove, Search, or Update entries in your Hosts file. Registered users also have the option to update the entire hosts without any prompts.

## **IP Address**

Computers communicate with one another over the Internet using IP addresses. An IP address is a number that identifies a computer on the network. A typical IP address will be a series of numbers such as 111.222.333.444. Every computer on the network has its own unique IP address. This address can be fixed, which is the case for most servers, or it can change dynamically to spread out server load on large websites. If you are connecting to the Internet with a modem your Internet Service Provider normally temporarily assigns your computer's IP address. The IP address assigned to your computer by your ISP's server will usually change every time you connect. Every ISP is assigned a limited number of IP addresses. Assigning these addresses to each computer via DHCP only when they are connected to the Internet drastically reduces the number of addresses needed to uniquely identify each computer connected. To find out what IP address has been temporarily assigned to your computer, click Start, Run, and on the Open command line type "winipcfg". This IP address is valid for your computer only for the period of time that you are connected. The next time you connect your IP address will probably be different.

**Domain Name**

This is the name that identifies a computer to a specific IP address. These Domain Names are assigned a specific IP address by the InterNIC organization.

## Domain Name Server (DNS)

All communication between computers over the Internet is done using IP Addresses. A typical IP Address will be a series of numbers such as 111.222.333.444. Since it would be nearly impossible to remember IP numbers for all the sites on the Internet we visit, an easy way to reference a name to an IP address was devised. This reference between a common name and an IP Address is called a Domain Name. A Domain Name contains enough information to give us some idea about what type of site is located on a particular server. The domain name www.microsoft.com tells us that the site probably belongs to Microsoft and the .com tells us it is a commercial site. The name www.auburn.edu tells us this site belongs to Auburn and the .edu tells us it is an educational institution.

The Domain Name to IP Address directory is held on different servers throughout the world. When you type a Domain Name into your browser the request is sent to your ISP for an IP address for that Domain Name. The ISP server then sends a request to one of the "master" servers, which contain the directories for .com, .edu, .net, etc. The "master" server then directs the request for the Domain Name lookup to the appropriate server that supplies DNS for the particular company or organization. That server in turn may pass the request on down to a sub-domain server. When the DNS server which contains the IP address for the requested name is finally reached, it returns an IP address directly to the ISP server from which the DNS request originated, and in turn is passed on to the individual computer making the Domain Name to IP address request. The IP address for that particular Domain Name is also stored on the ISP's server for a short period of time, usually about 24 hours. All Domain Name Servers are set up in a hierarchical type structure, whereas the IP addresses for a Local Area Network are usually held in a Domain Name Lookup Table on a local server. Another server on up the chain will handle the redirection of a lookup request to the appropriate DNS server below it. At the top of the DNS chain will be the "master" servers, maintained by the Internic organization. The use of this method allows hundreds of thousands of Domain Name to IP addresses to be stored and retrieved quickly from anywhere in the world, usually in a matter of seconds.

**InterNIC**

A cooperative activity between the National Science Foundation, AT&T and Network Solutions, Inc. This organization handles registrations for Domain Names, assigns IP addresses, maintains "master" servers for top level Domain Name to IP resolution, and in general takes care of a number of administrative tasks concerning the Internet.

**Find MaxMTU**

This runs the TweakDUN Find MaxMTU Utility. This attempts to find the MaxMTU for your connection to a chosen server.

Type the Domain Name of the server you wish to test. This will find the MaxMTU for every router between your computer and the server.

Starts the search for the MaxMTU to the entered server.

Applies the found MaxMTU setting.

This tells the entry selected, and the total number of entries in the hosts file.

This is a list of all of the entries in your hosts file.

Enter a Domain Name here to Add, Remove, Search, or Update in your hosts file.

This is the IP address of the selected hosts entry.

This searches the hosts file for the Domain Name you entered.

This removes the entered Domain Name from the hosts file.

This will lookup the IP for the entered Domain Name and enter it into the hosts file.

This looks up the IP address of the selected Domain Name and updates it in the hosts file.

This begins the action you have selected on the Domain Name that you have entered.

This will Update all of the entries in your hosts file and automatically update IPs and remove bad Domain Names. Registered Version Only.

## MaxMTU Find

This utility is intended as an additional tool if you are not getting good results with TweakDUN's recommended settings or typical variations of those settings. It is not intended as a foolproof way to determine the settings with which you will achieve your fastest download speeds. That can only be determined by experimentation.

Please do not use this tool indiscriminately. ISP's can get very annoyed by constant pinging. This is not a good way to maintain a good relationship with your ISP. In other words, "If it ain't broke, don't fix it."

If you suspect your ISP may be using a Maximum Transmission Unit (MTU) setting lower than 576, or if you need to try to determine the MTU settings enroute to a particular IP, Find MaxMTU may help.

Find MaxMTU will send numerous packets to the chosen server, using the Windows 95 ping utility behind the scenes and reporting the results without the necessity of opening a DOS window. It will mark the "Do Not Fragment" bit in each packet and determine the exact MTU to a server. To use this feature, click on the "Find" button under MaxMTU, and enter a server name like www.domain\_name.com in the box labeled "server". The search is finished when the utility reports the status as complete.

This method can sometimes help to find the lowest MTU between your computer and a download site, or the MTU of your Internet Service Provider. Note that if you have already your own MaxMTU set lower than the Windows default of 1500, that is where the Find MaxMTU will stop. If you want to experiment with this utility, you will need to set your MaxMTU to default and reboot first.

In many cases, Find MTU will consistently report an MTU of 1500, even where experimentation has demonstrated that the fastest data transfer rates are achieved using a lower MaxMTU setting. This can be due to a number of variables, but it probably means that your ISP does indeed have his MTU set to 1500.

While Find MaxMTU can determine the MTU setting your ISP is using, in most cases that is not the key issue, but rather what is the lowest MTU setting you encounter when surfing the internet. That becomes "the weakest link in the chain." And since many routers on the Internet are set to a MTU of 576, sometimes referred to as the "Internet Standard", most people experience their best results with the 576 setting, the "recommended setting" with TweakDUN.

If the Find MaxMTU determines that your ISP's MTU is lower than 576, then you may achieve your fastest data transfer rates by using that setting. This can help to eliminate packet fragmentation at that level. You can then select a corresponding RWIN and experiment from there.

**Warning:** This feature may be incompatible with certain video cards and may cause the program to freeze in those rare cases. A simple Ctrl+Alt+Delete should enable you to close TweakDUN without any difficulty.

## TweakDUN Operating System Support

S = Shareware Version (Unregistered)

R = Registered Version

Feature	Windows 95/98	Windows NT 4
	S	S
	R	
	S	S
	S	S
	R	R
	R	R
	R	
	S	S
	R	R
	R	R

## **How to Register**

Please visit the Patterson Design Systems website for registration information:

<http://www.pattersondesigns.com/tweakdun/register.htm>

## **CTL3D32.DLL Error**

Some people may get the following error message when installing TweakDUN on Windows 95: "This application uses CTL3D32.DLL which is not the correct version. This version of CTL3D32.DLL is designed only for Windows NT systems." TweakDUN does NOT install this file. In fact, TweakDUN does not even require this file to run. This is a Windows system error message which occurs because you apparently already have the Windows NT version of this dll installed on your computer. A previous installation of some other program has most likely done this done this. It is a very common occurrence. It is nothing to worry about. You can safely ignore the message and proceed. TweakDUN will install and run normally.

If you wish to take corrective action, the full instructions for how to proceed can be found on the NetPro Northwest site at <http://www.infinisource.com/ctl3d32.htm>

## Known Bugs and Limitations

Bugs:

[CTL3D32.DLL Error](#)

[Find MaxMTU: Tries to restart computer in MS-DOS Mode](#)

Limitations:

[Dialup Adapter Detection Limitations for Windows 95](#)

[Windows 95 and NT 4 Supported Features](#)

Please e-mail [support@pattersondesigns.com](mailto:support@pattersondesigns.com) if you have any questions.

## **Dialup Adapter Detection Limitations for Windows 95**

All known limitations have been resolved in the v2.21 release. TweakDUN now supports Hardware and Software adapters under Windows 95, 98 and NT4.

Your adapter must have a TCP/IP protocol binded to it.

**TweakDUN will function properly if no qualifying adapter is detected. MaxMTU features will simply be disabled.**

This will add the specified domain name and let you manually provide the IP address.

This will let you manually edit the IP address of a domain name in your hosts file.

## **Find MaxMTU: Tries to restart computer in MS-DOS Mode**

On some systems, running TweakDUN's Find MaxMTU feature may produce this warning:

"This program is set to run in MS-DOS mode and cannot run while other programs are running. All other programs will close if you choose to continue. Do you wish to continue"

This error is produced by a default setting in the way a DOS window is opened on your computer. If the Command.pif file in C:\windows or C:\ is set to warn before entering a DOS mode, it will produce that error. This can be changed in the internal settings, however the simplest way to handle it is to use "find" from the Start Menu and search for command.pif. Delete any that are found. Now when you run TweakDUN again, a new one will be created without that warning configuration and Find MaxMTU should work normally.

## Windows 98

Windows 98 has a built in option to change the MaxMTU for a Dial-Up Adapter. TweakDUN will also change these settings. Windows 98 has a new "Automatic" setting that enables programmatic control and is the default and recommended setting. When you use Automatic mode, all Point-to-Point Protocol (PPP) connections at speeds below 128kbps are made with an MTU of 576. At speeds above 128kbps, all connections are made with an MTU of 1500. Regardless of the MTU setting, the MTU will be further reduced to account for the network overhead if Virtual Private Networking (VPN) is used.

With Windows 98, you may still find that choosing an optimal combination of MaxMTU, RWIN and TTL permits faster data transfer rates than simply using the default options. 512, 552, 556, 1006, 1024, 1064 & 1152 are all values that other people have reported better luck with. 1024 is a value that some people using ISDN have reported success with. Some NT users have reported better results with default MaxMTU and a specified RWIN like 4x or 6x. Unfortunately, there is no shortcut for experimentation if you truly wish to optimize your connection. Try various combinations of settings and watch your download speeds using any good throughput monitor and see what works best for your particular combination of ISP, modem, phone lines, and system configuration.

## **Internet Update Feature**

This is a TweakDUN exclusive!!! Using the Internet Update Feature found in Registered versions of TweakDUN in the Product Updates menu, you can automatically update your current version as soon as a new one becomes available. Select "Download from the Internet" from the Product Updates Menu. This produces a message that reads "This will exit TweakDUN and run the Internet Update Utility, do you wish to continue?" Hit the "Yes" button and this will bring up the TweakDUN Internet Update screen. Click on "Check for Update" and it will tell you if any updates are available. If an update is available, you can choose to automatically download and install your free program upgrade. You must be online first to use this feature. No other utility of this kind offers this convenient feature, which ensures that you, as a registered user, can always have access to the latest upgrades to your current version 2.x

Note: In some cases, people on proxy servers may have a problem with the Internet Update feature. Visit the following page at the TweakDUN website for more on this:

<http://www.pattersondesigns.com/tweakdun/proxy.htm>

