

# WyvernWorks NetTweak Pro v1.20 For Windows 95/98/ME/NT and 2000

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Point your browser to [www.wyvernworks.com](http://www.wyvernworks.com) to access Technical Support and FREE updates and patches.

Note : This software is FREE from "Spywares"

## WyvernWorks Dot Com

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## Partners Needed

WyvernWorks Dot Com is continuously upheld and committed to make better softwares for the betterment of quality and improved user experience through better alternative-solutions, apart from the mainstream software developers. We, both 16year olds, are Armed and Dangerous with only a Vision. We started out humbly without any capital at all (except our computers) and decided to take the final straw in changing the face of 'buggy programs' and actually make softwares WORK in a way that actually does what its programmed to do. Please take note that this program is FREE from "Spywares"

Any ideas however crazy may they be, as long as it is feasible will be taken into due consideration. In the light of all this, we are seeking **partners worldwide** to join us in this 'Vision' and together synergize our efforts to make only the best.



If you are interested please e-mail us at : [Business@wyvernworks.com](mailto:Business@wyvernworks.com)

## MTU,RWIN,MSS and TTL ?

### • Maximum Transmission Unit (MTU)

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. Windows 95 Default is 1500. Windows 98 Default is 576.

### • RWIN (TCP Receive Window)

RWIN determines how much data the receiving computer is prepared to receive. An RWIN value that is set too high will result in greater data loss if the packet is lost or damaged in transit. An RWIN value that is set too low will produce very poor throughput. Typically, an RWIN value should be set that is 3 or 4 times the size of the Maximum Segment Size (MSS).

### • Maximum Segment Size (MSS)

The MSS is the largest segment of TCP data that the Winsock is prepared to receive on a particular connection. When the TCP connection is initially established, both sides agree to use the minimum of each other's advertised MSS value. If the MSS is too low, the data/header ratio will be low. And if the MSS is too high, this will lead to large IP datagrams and the packets will tend to fragment in transit where other networks may have small MTU's. Hence, performance can increase at times by reducing the MSS value. Since packet headers are normally 40 bytes in length, your MSS value should always be at least 40 less than the value of the MTU. As a rule of thumb, first try setting the MSS value to be the greatest power of 2 that is at least 40 less than the MTU 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.

## Recommended Settings For Windows 95/98/Me and 2000

WyvernWorks NetTweak Pro v1.20 does not guarantee if these recommended settings does not boost up your Internet connection. It is highly recommended that you backup your Windows registry before continuing. If you have any suggestion or recommendation, please e-mail us at [support@wyvernworks.com](mailto:support@wyvernworks.com)



### Windows Default

MTU :1500  
MSS :1460  
RWIN :8192  
TTL :128



### Most Connection Types

MTU :1500  
MSS :1460  
RWIN :8192  
TTL :64



### Modem Connections

MTU :1500  
MSS :1460  
RWIN :2144  
TTL :64



### Modem Connections 2

MTU :1500  
MSS :1460  
RWIN :3216  
TTL :64



### Cable Modem or LAN Connections

MTU :1500  
MSS :1460  
RWIN :8192  
TTL :64



### Cable Modem or LAN Connections 2

MTU :1500  
MSS :1460  
RWIN :29600 \*  
TTL :64



### Windows 95/98/ME, Cable Modem or DSL Speed

MTU :1500  
MSS :1460  
RWIN :372300 \*  
TTL :64

**Windows 2000**

MTU : 1500

MSS : 1500

RWIN : 372300 \*

TTL : 128

*\* These values are provided by us . You CANNOT insert them manually. To load these settings ,click on "Load Settings" and select the type of connection you have.*

**Please make sure that you restart you computer for changes to take affect !**

## Speed Dial

Slow dialing to your ISP or any other places ? Speed Dial increases your overall modem connection speed. The number specified after 40 is the time for each tone in milliseconds. Lower numbers mean faster dialling. If you're having problems connecting, try increasing the number until it works.



Please take note that this will only work with certain networks adapters and countries.

## Extra Options

### MTU Auto Discovery

Checking the [MTU](#) Auto Discovery box allows the TCP connection to sort out the [MTU](#) automatically. Favorable results have been realized with this on and off. It is recommended to try both settings with each profile and use whichever works best. This can be used in conjunction with other [MTU](#) settings. Setting this option causes TCP to attempt to discover the Maximum [MTU](#) (largest packet size) over the path to the remote host. By discovering the Path MTU and limiting TCP segments to this size, TCP can eliminate fragmentation at routers along the path that connect networks with different [MTU](#)'s. Fragmentation adversely affects TCP throughput and network congestion.

### Black Hole Detection

Black Hole Detection specifies whether the stack will attempt to detect Maximum Transmission Unit routers that do not send back ICMP fragmentation-needed messages. Enabling black hole detection increases the maximum number of re-transmissions performed for a given segment. Setting this parameter 'enabled', when it is not needed, can cause performance degradation. If the router is not sending back the ICMP messages, then PMTU will not work. This can cause an even greater loss of performance. It is recommended that PMTU Black Hole Detect be disabled.

### Increase the Maximum Number of HTTP Sessions Allowed

To abide by the HTTP specifications Windows limits the number of simultaneous connections that it will make to a single HTTP (web) server. This affects all Windows Internet applications that use the standard API, including Internet Explorer. The behaviour can be seen when downloading multiple files from a web site only a certain number (2 or 4) will be active at any one time. Windows will limit connections to a single HTTP 1.0 server to four simultaneous connections. Connections to a single HTTP 1.1 server will be limited to two simultaneous connections. The HTTP 1.1 specification (RFC2068) mandates the two connection limit while the four connection limit for HTTP 1.0 is a self-imposed restriction which coincides with the standard used by a number of popular Web browsers. The default values are 2 and 4 respectively.

Warning : *By changing these settings you are causing Windows to break the HTTP protocol specification for any Internet applications running on your machine.*

### NDI Cache

The NDI cache size is the size of the cache of the Network Device. The supported values are 0, 16, 32 and 64. You will notice improvements when setting this value to 16, especially with the MaxMTU set to 576 and RWIN set to 2144. If you are using higher MTU and RWIN values, you may want to adjust the NDI cachesize to 32.

### PMTUDiscovery

Specifies whether the TCP/IP stack will attempt to perform path MTU discovery as specified in RFC 1191

### SackOpts

Enables support for selective acknowledgements as documented by Request for Comment (RFC) 2018.





## **Tcp1323Opts**

Controls RFC 1323 time stamps and window scaling options.

## Backing Up & Restoring Windows Registry

### Windows 95 Backup:

Open My Computer and go to your Windows root directory. Typically this would be c:\Windows. Click the View menu item and choose Options. Make sure the checkbox for Show all file types is checked. Checkbox for Hide MSDOS file extensions should be unchecked. Locate the 2 files system.dat and user.dat in the Windows root directory and copy them to another existing directory. You must create a folder named Backup or other than that, this folder can be created in Windows mode or MS-DOS Mode (e.g. Md C:\Backup)

Example : copy c:\windows\system.dat c:\backup)

### Windows 95 Restore:

- Reboot your system in MS-DOS mode
- At the DOS prompt, change to Windows (e.g. cd c:\windows)
- attrib -h -s -r system.dat
- attrib -h -s -r user.dat
- Now copy the two files system.dat and user.dat from where you copied them to the Windows root directory, overwriting the existing files.
- Example : Copy C:\Windows\System.dat c:\Backup)
- attrib +h +s +r system.dat
- attrib +h +s +r user.dat
- Reboot your system

### Windows 98/ME Backup :

Step 1 : From File | Registry | Backup .Click Yes to backup your Windows Registry.

OR

Step 2 : Follow the instruction used in Windows 95 Backup/Restore

Note : Step 1 will prompt you if you have already backup your Windows registry. It is highly recommended that you backup again.

### Windows 98/ME Restore:

You cannot restore Windows Registry Files when you are in Windows Mode. To restore your Windows registry press the F8 key when you see the "Starting Windows 98/ME" message, and then choose Command Prompt at the Startup menu.

Type : Scanreg /restore

When you do so, you can choose up to five registry backup files listed for you to restore.

OR

Step 2 : Follow the instruction used in Windows 95 Backup/Restore

#### Windows NT 4.0 Backup:

Click Start, Run, and type "regedit.exe" without the quotes. In Registry Editor, from the "Registry" menu, choose "Export Registry File." Navigate to the folder in which you want to create the backup, type in a name, select "All" as the Export Range, and click the "Save" button. This will create a (large) text file that is the entire contents of your Registry. You can use this method to back up just a portion of your registry, also. Simply highlight the key that you want to backup, and then choose "Export" from the Registry menu, and don't select "All" before clicking Save.



#### Windows NT Restore

Double click on the backup file you created will undo the change.



#### Windows 2000 Backup:

Click Start | Programs | Accessories | System Tools | Backup

Click the Emergency Repair Disk button.

Be sure to have a blank formatted floppy disk ready and insert it when prompted. This will copy your system configuration and registry to the Emergency Repair Disk (check the registry backup checkbox).



#### Windows 2000 Restore:

Boot your system from the Windows 2000 CD-ROM disc.

When prompted, choose Repair Windows 2000 Installation and follow the prompts to restore your registry to the hard drive.

Reboot your system

If you having trouble backing up or restoring your Windows Registry, please e-mail us at  
[support@wyvernworks.com](mailto:support@wyvernworks.com)

## \* Updates,Patches And Fixes

WyvernWorks NetTweak Pro v1.20 offers free \* updates, patches,tips,tricks and fixes so that you can improve your Internet connection. If you would like to update, just go to "Start","WyvernWorks","NetTweak Pro" and click on "Update Now". Press the Yes button to check whether there's a newer version. If one is found, you will be automatically redirected to our website to start downloading. Visit our website if you wish to check out the News and newer software made by us.

Note : **WyvernWorks Update will not transmit any information about you or your system during the update process.The transaction is completely private and secure.**

*\* Only applies for registered users*

## WyvernWorks NetTweak Pro Online Help

ICQ UIN :27111560  
62965502



E-mail : [support@wyvernworks.com](mailto:support@wyvernworks.com)

## WyvernWorks NetTweak Pro Version History



### **WyvernWorks NetTweak Pro v1.20**

- \* Works with Windows 95/98/ME/NT/2000
- \* Compatible with any adapters.
- \* Logs reports.
- \* Fixed bug causing MTU/IPMTU to not be saved under Windows 95/98/ME.
- \* Presetable settings
- \* Added "Extra Values" which includes MTU Auto Discover and may more.
- \* Supports AOL
- \* Fixed for Black Hole Detection
- \* Improved version if Speed Dial
- \* Registry Backup/Restore option (Only for Windows 98 and ME users)
- \* Revamped version of Help file
- \* Supports NDI cache for Windows 95/98 and Me users
- \* Registration fee is \$15 ( Including transaction fee \$ 2 for Softwrap and other side charges )
- \* Includes "Modem Optimizer "



### **WyvernWorks NetTweak Special Edition 1.15**

- \* Problem with adapters not being found
- \* Fixed bug causing MTU/IPMTU to not be saved sometimes under Windows 98.
- \* Black Hole Detection check box error
- \* Registration is free



### **WyvernWorks NetTweak 1.14**

- \* Fixed bug causing MTU/IPMTU to not be saved sometimes under Windows 98.
- \* User entered RWIN values now supported.
- \* Registration is free

## Acknowledgments

- Thanks to the Max Petersen

- Thanks to the beta testers who help track down problems before WyvernWorks NetTweak Pro v1.20 is publicly released.

- Thank you to all other users who have contributed to WyvernWorks Dot Com by communicating problems and suggestions.

- Finally, thanks to all users who supported the development of this software by registering and recommending it to their friends and colleagues

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