



# Cisco 678 Configuration

***This will guide you through the procedures needed to get your DSL modem installed and set up in order to access the Internet with your new DSL service and WebGuy Internet.***

## **Step 1 -**

The first step is to setup your hardware. Please consult your Cisco DSL Modem Users Guide for DSL/phone line hookup configurations that best suite your needs.

## **Step 2 -**

You will need to connect the management serial cable (the light blue cable) that came with your Cisco 678 between your computer and DSL modem. It will need to be connected to the "MGMT" port on the back of the 678 and a serial port on your computer. You will then need to connect to the 678 with terminal software (e.g: Hyperterminal, ZTerm, Minicom, Telix). The speed the terminal software will communicate with the 678 will be 38400, no software or hardware flow control.



- To open Hyperterminal in Windows 98/ME/2000 click on Start > Programs > Accessories > Communications > Hyperterminal
- To open Hyperterminal in Windows XP click on Start > All Programs > Accessories > Communications > Hyperterminal

\*NOTE : If you do not have Hyperterminal installed follow the instructions below.

- To install Hyperterminal –

1. Double click on the My Computer icon on the desktop.
2. Double click on Control Panels folder.
3. Double click on the Add/Remove Program control panel.
4. Click on the Windows Setup tab.

\*Windows XP users click on the Add/Remove Windows Components button on the left of the window.)

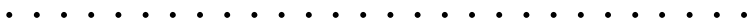
5. Double click on Communications.
6. In the window that comes, there should be a line which says HyperTerminal. Put a check in the box in front of it, if there isn't already one.
7. Click on *OK*
8. Click on *OK* again.
9. If it prompts for the Windows disks/CD, then you need to supply them in order for the program to be installed.

## **Step 3 -**

Now it is time to connect to your Cisco DSL modem and configure it.

\*Make sure the phone line is UNPLUGGED from the modem and that the power plug is connected. You should see the "power" light on the modem lit.

If you do not already have Hyperterminal open, open it now and tell it to connect to the serial port the management cable is connected to. (Normally COM1 or COM2) You may need to press the ENTER key once or twice for Hyperterminal to connect to your DSL modem. The first thing you should see on the screen is a password prompt.



**Step 4 -**

**SINGLE IP ADDRESS CONFIGURATION** – This is the most common configuration used with standard, single IP, DSL configurations.

1. At the [Password] prompt, hit the Enter key.
2. Type "enable" and hit the Enter key twice.

Issue the following commands:

3. set nvram erase
4. write
5. reboot

\*Note: The 678 will reboot and bring you back to a "Password" prompt.

6. Press Enter.
7. Type "enable" and hit the Enter key twice.

Issue the following commands:

8. set prompt <username>
9. set interface wan0-0 close

\*Note: Some older versions require "set interface wan0-0 disable".

10. set interface wan0-0 vpi 0
11. set interface wan0-0 vci 32
12. set interface wan0-0 open

\*Note: Some older versions require "set interface wan0-0 enable".

13. set web disabled
14. set ppp wan0-0 ipcp 0.0.0.0
15. set ppp wan0-0 login <Login name>
16. set ppp wan0-0 password <Password>
17. set ppp restart enabled
18. set nat enabled
19. set bridging rfc1483 off
20. set interface eth0 address 192.168.0.1
21. set interface eth0 netmask 255.255.255.0

22. set dhcp server enabled
23. set dhcp server pool 0 ip 192.168.0.10
24. set dhcp server pool 0 size 90
25. set dhcp server pool 0 dns 64.215.178.130
26. set dhcp server pool 0 sdns 64.215.179.228
27. set dhcp server pool 0 netmask 255.255.255.0
28. set dhcp server pool 0 gateway 192.168.0.1
29. set dhcp server pool 0 enabled

\*Note: This will allow the use of IP addresses 192.168.0.10 - 192.168.0.100 for your internal network. If you wish to run servers, you will need to set up static NAT mappings in your 678.

30. set syslog disabled
31. set radius disabled
32. set snmp disabled
33. set tftp disabled
34. set password exec <password> (where <password> is any password you choose)

35. set password enable <password> (where <password> is any password you choose)

\*Note: CBOS version v2.4.0 or greater will not allow telnet from any source until passwords have been set for both "exec" and "enable" modes. Earlier versions allow telnet, and in fact will allow any access to its configuration unless password protected. In both circumstances, WebGuy Internet recommends you set passwords for your router.

36. write

37. Proceed to step 5.

**\* NOTE: USE THIS FOLLOWING CONFIGURATION WALK THROUGH IF YOU ARE USING MULTIPLE OUTSIDE IP ADDRESSES AND YOU HAVE PURCHASED AN ADDITIONAL IP NETBLOCK SUCH AS FOR AN OFFICE NETWORK.**

1. At the [Password] prompt, hit the Enter key.
2. Type "enable" and hit the Enter key twice.

Issue the following commands:

3. set nvram erase
4. write
5. reboot

\*Note: The 678 will reboot and bring you back to a "Password" prompt.

6. Press Enter.
7. Type "enable" and hit the Enter key twice.

Issue the following commands:

8. set interface wan0-0 disable

\* Note: Some older versions require "set interface wan0-0 close".

9. set interface wan0-0 vpi 0
10. set interface wan0-0 vci 32
11. set interface wan0-0 enable

\* Note: Some older versions require "set interface wan0-0 open".

12. set web disabled
13. set ppp wan0-0 ipcp 0.0.0.0
14. set ppp wan0-0 login <login name>
15. set ppp wan0-0 password <password>
16. set ppp restart enabled
17. set bridging rfc1483 off
18. set nat disabled
19. set interface eth0 address x.x.x.x (where x.x.x.x is the "router" (or first useable) IP address in your subnet)
20. set interface eth0 netmask 255.255.255.x (where 255.255.255.x is your subnet mask)
21. set password exec <password> (where <password> is any password you choose)
22. set password enable <password> (where <password> is any password you choose)

\*Note: CBOS version v2.4.0 or greater will not allow telnet from any source until passwords have been set for both "exec" and "enable" modes. Earlier versions allow telnet, and in fact will allow any access to its configuration unless password protected. In both circumstances, WebGuy recommends you set passwords for your router.

23. set syslog disabled
24. set radius disabled
25. set dhcp server disabled
26. set snmp disabled
27. set tftp disabled
28. set web disabled

29. write

### **Step 5 -**

Now you may plug all phone and network cables back into their proper places. Shut down your computer and unplug the power from your DSL modem. After a few seconds plug the power cord for the DSL modem back into the modem and then start your computer. The DSL modem should be online (WAN "LNK" light is fully lit) by the time your computer boots up. Now you need to configure your web browser to communicate through the network and not a dialup connection.

For Internet Explorer –

1. Right click on the Internet Explorer icon on your desktop. A popup menu should appear.
2. Click on Properties.
3. Click on the Connections tab.
4. Make sure that the "Never Dial a Connection" is selected.
5. Click on "LAN Settings."
6. Make sure that all the check boxes are deselected.
7. Click *OK*
8. Click *OK* again.

Now you should be able to access the internet through your DSL modem.

***If you ever need to reset your DSL modem's configuration settings follow these steps. NOTE: Doing this will PERMANENTLY delete ALL modem configurations in the modem's memory and reset it to the factory default.***

### **1. Connect**

1. Make sure your Cisco Management cable is plugged in.
2. Get into Hyperterminal (usually under Start/Programs/Accessories/Communications), and create a new session for your router, with these settings:
  - Bit per second: 38400 Data bits: 8
  - Parity: None
  - Stop bits: 1
  - Flow control: None(You're probably on COM1 at this point.)

### **2. Get into Debug (RMON) Mode**

3. Now you are going to get into "debug" mode in your router. (That's the mode where the "=>" prompt shows up in the Hyperterminal window).
4. Do this by unplugging the router's power for several seconds. Then plug it in, and when the "alarm" light on the router comes on, quickly hit "CTRL-C" at the same time. You might have to hit enter a few times to make the "=>" show up. If you didn't get into debug mode the first time, unplug the router and try again.

### **3. Erase**

5. Once you're in Debug, delete the current running configuration like this:

At the "=>" prompt, type es 6 <press enter>  
(reply is "Erasing sector 00000006. Sector erased")  
At the "=>" prompt, type rb <press enter>

The router reboots.

#### 4. Erase the NVRAM

6. Now you have to put the router settings in the way you want them, so you'll still be using hyperterminal. This time, when the router is plugged in, it should say (when you press enter):

Hello!  
Expanding CBOS image...  
(CBOS version info, etc etc)

7. <Press enter>

Then it will ask you:  
User Access Verification  
Password:

8. You don't have a password yet (since you just cleared out your router), so just <press enter>

9. At the "cbos#" prompt, type  
enable <press enter>

10. At "Password:" press enter.

11. At "cbos#", type  
set nvram erase <press enter>

It replies:

Erasing Running Configuration.  
You must use "write" for changes to be permanent.

12. At cbos#, type  
write <press enter>  
NVRAM written.

13. At cbos#, type  
reboot <press enter>  
Hello!  
Expanding CBOS image...  
(CBOS version info, etc etc)

#### 5. Reconfiguring the modem

Proceed to the beginning of this document to reconfigure your DSL modem.

### Configuring NAT routing

If you wish to run any client side applications like a web server, PC Anywhere, or any applications that require a direct "outside" connection there are many ways to do this but the method that WebGuy Internet prefers is a process called "Port Forwarding". Every TCP/IP application will listen on your system for requests from a specific "port." For instance web traffic commonly uses port 80 and telnet applications use port 21, etc. Instead of the router forwarding all 61,000 possible ports onto one computer (thus creating a security nightmare), by using Port forwarding it will only pass specific and selected ports onto an internal computer. Any other port that is not specifically programmed will end at the router and never make it into your internal computer network.

**WARNING:** By opening up ports into your internal network you also allow hackers a chance to get access to your system. Through the use of a simple port scanner they can easily determine what ports you have open and begin an attack. The security of your system is only as good as the password and the code of the program that is listening to that port. You have been warned and you now proceed at your own risk!

*November 2, 2003*

*Page 6*

1. At the [Password] prompt, enter in your system password.
2. Type "enable" and enter in your "enable" password.
3. Type "set nat entry add" then press enter. This will show some basic help.
4. Type "set nat entry add 0.0.0.0 0000" where 0.0.0.0 is the IP address of the system running the application and 0000 is the port number the application listens on.
  - You may add multiple entries, or port ranges if you need.
5. Type "write" then press enter.
  - For full documentation on this procedure please see the command reference guide.
  - To test your configuration you must be on the outside of the router.
  - The address you will connect to will be the IP address assigned to you from WebGuy Internet support.

If you have any questions about these configuration steps, please contact us directly at (801) 943-0489 or [support@webguyinternet.com](mailto:support@webguyinternet.com).