

Advanced Wireless Troubleshooting Guide

For Use in the Nelson Poynter Memorial Library, USF St. Petersburg

If you have used the “Quick Start... Using the Wireless Network” guide, and are registered for classes for the current semester but are continuing to experience problems accessing the network, the following are some helpful tips.

Step 1: Physical Device Connectivity

First, determine if you have a wireless PC slot card, or if your wireless card is built-in to your laptop.



PC slot card

This card should have two lights, one for power, and one for connectivity. The power light should be solid, and the connectivity light should blink intermittently. If one or both are off, then you may be too far from a wireless access point, or there could be a physical problem with the card.

Built-in wireless card

Laptops with internal cards should have a light on the side or front of the machine, with a symbol similar to the graphic above. Some laptops have a button to turn the Wireless on or off, others have a function key combination.

Step 2: General Setup Troubleshooting

Check the following setting of your card, to determine if it is compatible:

1. Check your card's documentation to be sure that it is IEEE 802.11b (11Mbps) compliant.
2. The **SSID** (for Cisco cards), or **Network Name** (for Lucent cards) is blank. This information can be found in your card's Utility program (for Cisco Cards & others); or in XP can be found through the **Network Connections Applet** in the **Control Panel** by selecting the wireless card, then clicking **Properties**, then **Configure**.
3. In this same configuration area, **Client Name** is your name, with no spaces, or any unique value. If you have a common name try using your full name to make sure someone else is not using it.
4. **WEP encryption** is **not** enabled.
5. Make sure you are near an access point. See our wireless map at the address below for details.

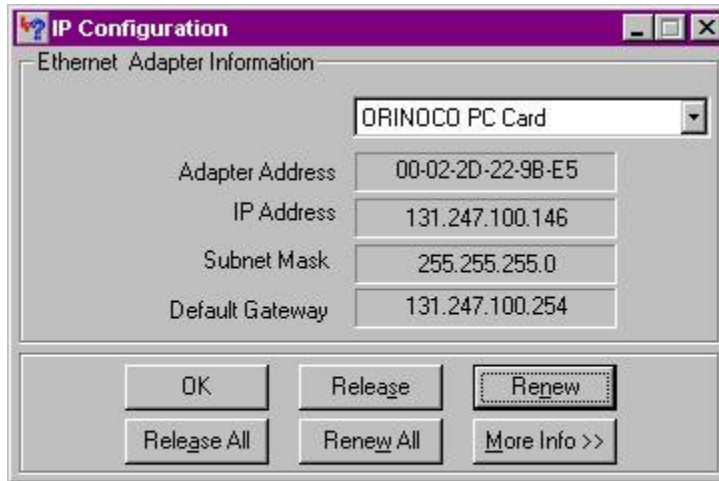
<http://www.nelson.usf.edu/systems/maps.html>

Step 3: Wireless Card Physical Address Registration

Check your wireless card's physical address (or MAC Address) in one of two ways, depending on your version of Windows:

Windows 95/98/ME

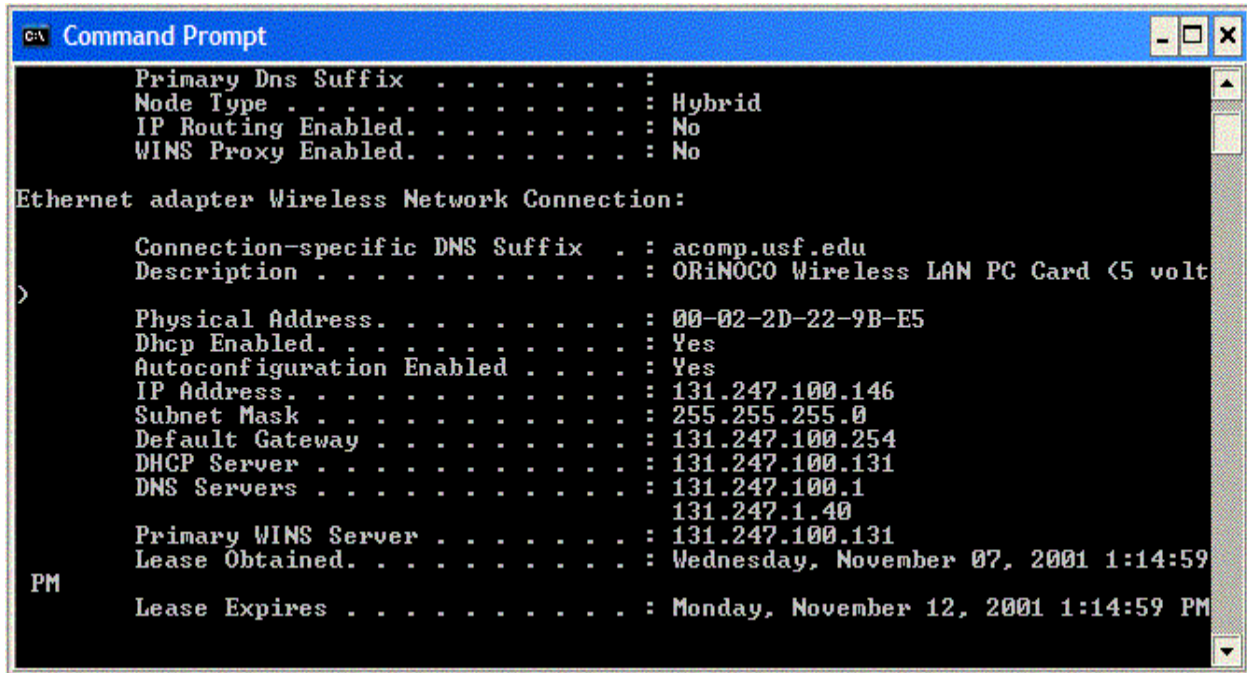
Go to Start, Run, and type *wiipcfg* and press enter. In the window that comes up, choose your wireless adapter from the drop down box. Note the IP Address and the Adapter Address. Go to step 3C.



Step 3B: Windows 95/98/ME. – Note the IP Address and Physical Address, above.

Windows NT/2000/XP

Go to Start, Run and then type *command* and press enter. At the command prompt type *ipconfig /all*
Your results should be similar to the image below.



```
Command Prompt
Primary Dns Suffix . . . . . :
Node Type . . . . . : Hybrid
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No

Ethernet adapter Wireless Network Connection:

Connection-specific DNS Suffix . : acomp.usf.edu
Description . . . . . : ORiNOCO Wireless LAN PC Card (5 volt
)
Physical Address. . . . . : 00-02-2D-22-9B-E5
Dhcp Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . : Yes
IP Address. . . . . : 131.247.100.146
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 131.247.100.254
DHCP Server . . . . . : 131.247.100.131
DNS Servers . . . . . : 131.247.100.1
                        131.247.1.40
Primary WINS Server . . . . . : 131.247.100.131
Lease Obtained. . . . . : Wednesday, November 07, 2001 1:14:59
PM
Lease Expires . . . . . : Monday, November 12, 2001 1:14:59 PM
```

Step 3B: Windows 2000/XP. – Note the IP Address and Physical Address, above.

Step 3C If your IP address starts with 10.X.X.X, then you should be able to use your laptop to browse to the registration page, continue to step 4. If your IP address starts with 192.168.X.X, then you will need to go to a WebXpress terminal in order to register, using the physical or Adapter address noted in step 3A or 3B. If your IP address starts with 131, then you should be ready to access the Internet.

Step 5: Register Online

To register the laptop's physical address, navigate with your laptop browser, or from within the library use a WebXpress terminal to navigate to this page:

<http://www.net.usf.edu/laptops>

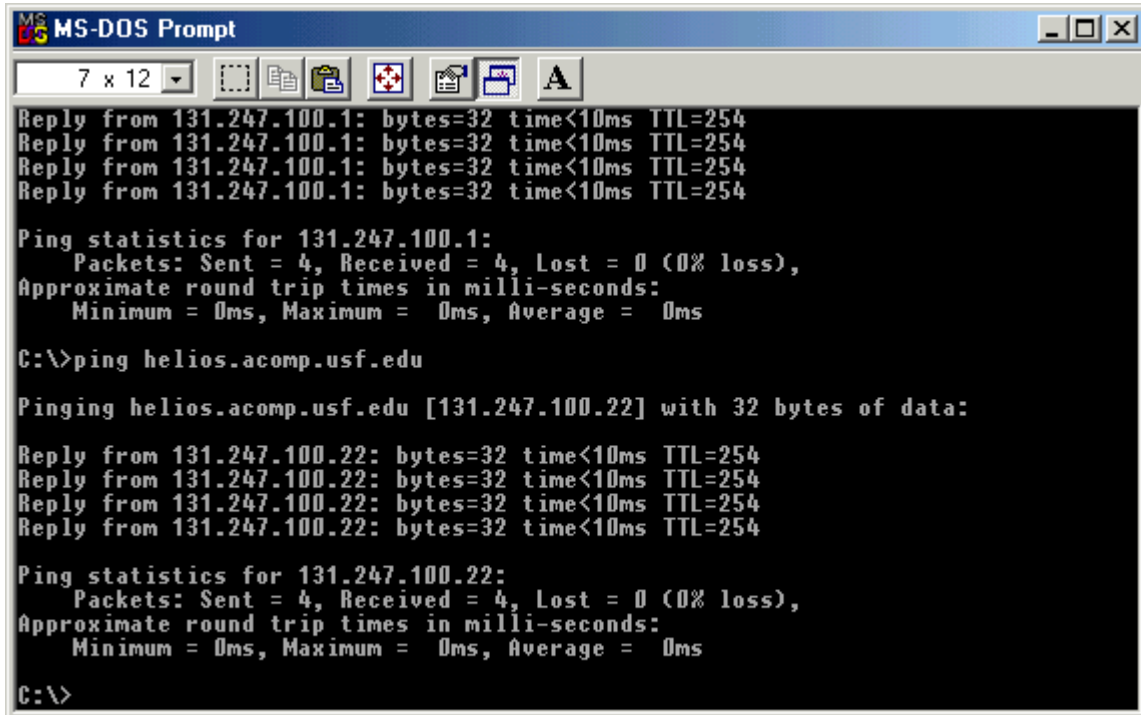
Once the laptop has been registered, you should be able to reboot the laptop after 2 minutes, and gain a new address in the IP address section (found in step 3 above).

- 10.X.X.X means you need to (re)register your wireless card at [the laptop registration page \(www.net.usf.edu/laptops\)](http://www.net.usf.edu/laptops).
- 131.247.X.X means DHCP is working, and you should be able to access the Internet.
- Any other value means there is an error in your installation or setup.

Step 6 – Connectivity Troubleshooting

If your IP address is 131.247.X.X, and you still cannot access the Internet, try the following routine:

- Go to Start, Run, and then type *command* for Win95/98, or *cmd* for 2000/XP and press enter.
- At the command prompt, type *ping 131.247.100.1* and press enter. Observe the results.
- Next, type *mother.usf.edu* and press enter. Observe the results.



```
MS-DOS Prompt
7 x 12
Reply from 131.247.100.1: bytes=32 time<10ms TTL=254
Reply from 131.247.100.1: bytes=32 time<10ms TTL=254
Reply from 131.247.100.1: bytes=32 time<10ms TTL=254
Reply from 131.247.100.1: bytes=32 time<10ms TTL=254

Ping statistics for 131.247.100.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping helios.acomp.usf.edu

Pinging helios.acomp.usf.edu [131.247.100.22] with 32 bytes of data:

Reply from 131.247.100.22: bytes=32 time<10ms TTL=254
Reply from 131.247.100.22: bytes=32 time<10ms TTL=254
Reply from 131.247.100.22: bytes=32 time<10ms TTL=254
Reply from 131.247.100.22: bytes=32 time<10ms TTL=254

Ping statistics for 131.247.100.22:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

If

If you see the words “timed out” rather than a “Reply” as above, your card is not connecting. Reasons other than not being registered or having a non-working card are:

Firewall Settings: XP service Pack 2 and above laptops have a service called Windows Firewall. This service can block network traffic in an attempt to secure your computer from hackers & viruses. Click on the Security Center icon on the bottom right of your taskbar to change the settings.

Anti-Virus Software: Both McAfee and Norton Antivirus software packages incorporate firewall components, which can hamper connectivity. Check these settings and configure them to allow inbound and outbound connections.

Static Address Assignment: If your wireless computer was used on a secured network at home or the office, the default settings could have changed from a DHCP (dynamic) IP Address to a Static one. Look at the results from 3A or 3B above, and note the setting “DHCP Enabled”. It should be set to “yes”. If not, then use the Control Panel’s Network Connection Properties, and set the TCP/IP Settings to “Obtain an IP Address Automatically”. Reopen the command window (step 3), and type the *command ipconfig /release* followed by the command *ipconfig /renew*.

Step 4: Reinstall Driver Software

Go to your card manufacturer's website and download the newest drivers and client software for your card. Uninstall the old drivers and software, and then install the new versions. In some cases it is very important that the drivers and client software are the same versions.

- [Lucent](http://www.orinocowireless.com) : http://www.orinocowireless.com
- [Cisco](http://tools.cisco.com/support/downloads/pub/MDFTree.x?butype=wireless) : http://tools.cisco.com/support/downloads/pub/MDFTree.x?butype=wireless
- [D-Link](http://support.dlink.com/downloads) : http://support.dlink.com/downloads
- [Linksys](http://www.linksys.com/download) : http://www.linksys.com/download

For additional help or to schedule a setup session with the library systems administrator, contact bwatson@nelson.usf.edu, or call the Systems Department at 873-4402.

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