

Help! The Internet is broken!

A flowchart for debugging WHOInet network problems using DHCP and NetReg

NetReg
All computers on WHOInet need to be registered with NetReg:
<https://netreg.who.edu/>

"Wrong" IP addresses

169.x.y.z is a "link local" address. It shows up if you don't have a working network connection or can't reach a DHCP server. This is usually due to an inactive Ethernet jack, a bad cable, or sometimes spyware.

10.128.x.y is a QuickReg address, assigned by the NetReg DHCP server to systems that are not yet registered. It can only be used to go to the NetReg Web site and register.

10.202.x.y is an address on the "Atlantic" wireless network. It will never show up by DHCP on a wired Ethernet interface. To use the Atlantic network you need to use the VPN. If you're trying to debug a wired Ethernet connection, disable the wireless interface.

192.168.x.y is a private IP address, usually assigned by a NAT device such as a home router or firewall. Some insecure WHOI hosts are put behind NAT for security, but do not have full WHOInet connectivity.

128.128.x.y are WHOInet IP addresses. If you have a WHOInet IP address but can't use the network, it may be an address on the wrong subnet. Make sure you're using DHCP, then release and renew the DHCP lease.

Other IP addresses may show up if a host has been configured for another Internet site's network. Make sure it is set to use DHCP, then release and renew the DHCP lease.

Spyware

The term **spyware** refers to any software that hijacks a computer's normal operation in order to invade the user's privacy. Spyware can interfere with normal network use in any number of ways, and a spyware problem can show up as just about any kind of network problem (excepting, maybe, a broken Ethernet cable). To date, spyware only affects Windows systems.

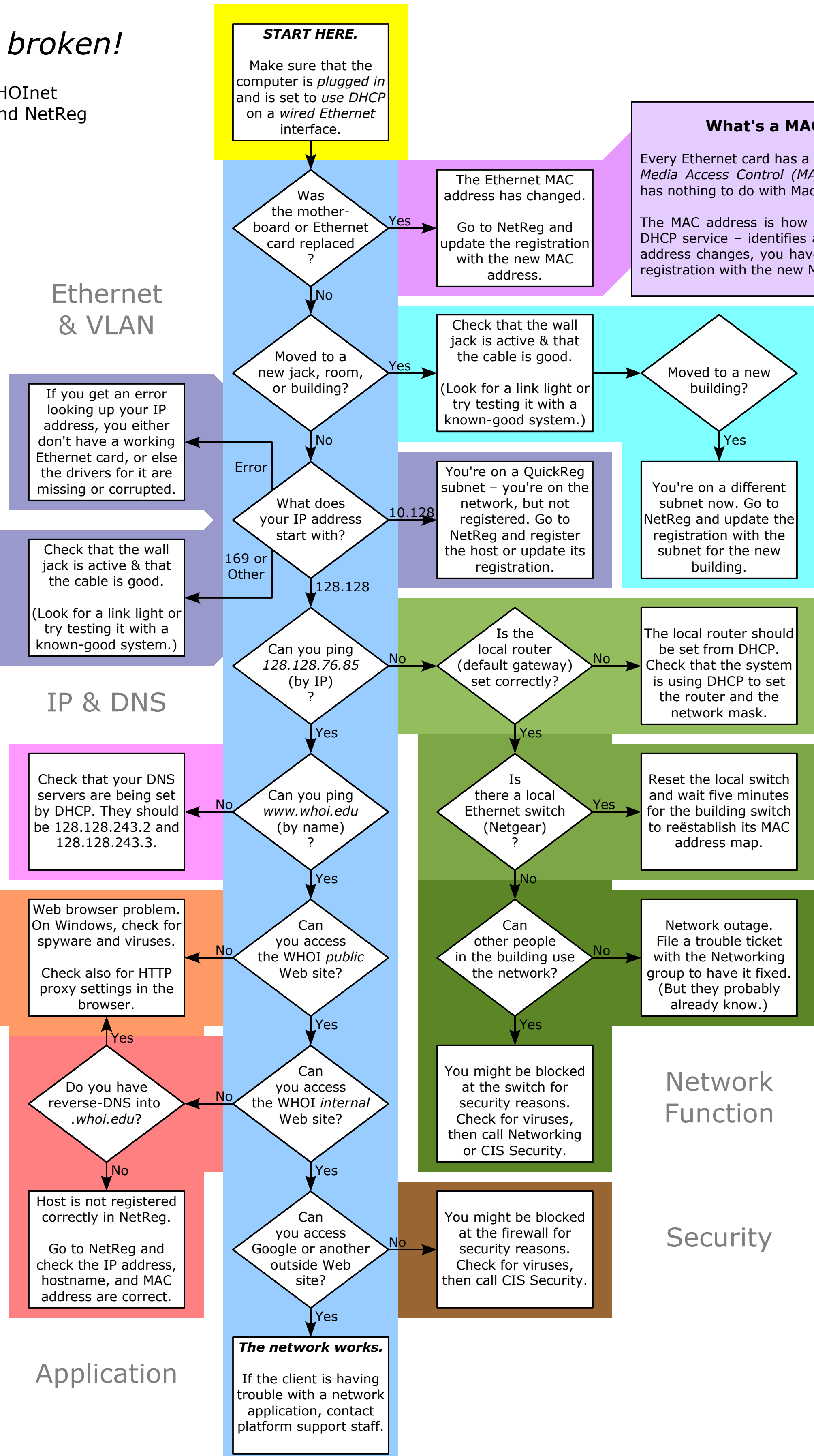
Most spyware installs itself into *Internet Explorer* and intercepts Web browsing - popping up ads or redirecting the user's searches to advertisements. Other browsers are (so far) not usually affected by spyware.

Other spyware replaces Windows' network drivers (Winsock), sending all network traffic through the spyware operator's site. This will cause all sorts of networking problems, and can usually only be fixed by reinstalling the network drivers.

Some spyware can be removed with ordinary anti-virus software. However, specialized anti-spyware software such as *Ad-Aware* or *Spybot Search & Destroy* is usually more effective.

Application

If the client is having trouble with a network application, contact platform support staff.



What's a MAC address?

Every Ethernet card has a unique address, called a *Media Access Control (MAC)* address. The name has nothing to do with Macintosh computers.

The MAC address is how NetReg - or any other DHCP service - identifies a computer. If the MAC address changes, you have to update the NetReg registration with the new MAC address.

What's my IP address?

In Windows 2000 or XP:

1. From the *Start* menu, select *Run*.
2. Type *cmd* and click *OK*.
3. At the command prompt, type *ipconfig /all* and press *Enter*.

In Mac OS X:

1. Open *System Preferences* from the Dock or the Apple menu.
2. Select *Network*.
3. Pull down the *Show* menu and select *Built-In Ethernet*.

In Linux or Unix:

1. To see your IP address, type *ifconfig -a*.
2. To see router settings, type *netstat -rn*.
3. To see DNS server settings, look in the file named */etc/resolv.conf*.

Network outages are rare!

WHOInet's switches and routers are quite reliable, and network outages have become rather rare. Most of the time when someone suspects that there is a "problem with the network" the trouble is really with their computer, or with an added-on network device such as a local Ethernet switch. A real network outage will take the network down for a whole building or floor of a building - not just a single computer or office.

Local Ethernet switches and NAT devices, such as the ubiquitous little blue Netgear units, are much less reliable than WHOInet's core network. We have observed some local switches that work for months at a time and then lock up - the lights still flashing, but not actually passing any traffic. To fix this problem, all you need to do is unplug the switch and plug it back in, then give it a minute or three to reset.

The WHOInet firewall

Our firewall allows outbound connections without restriction. However, if you want to run a server on WHOInet that's accessible to the outside world, you need to register the server and open up firewall ports. Go to the *Service Registration System* at <http://servicereg.who.edu/> to request open ports.

If your computer is infected with a virus or gets broken into, it may be blocked at the firewall to keep it from attacking other systems. It won't get unblocked until it is cleaned up.