ResNet

ResNet Guide

Revised 3/28/00

ResNet Guide

1. Before You Get Started

With a ***ResNet*** (Residence Network Services) subscription, students living in Purdue University Residences may connect their personal computers to any authorized campus computing resource using industry standard 10base-T Ethernet interfaces. This guide provides information that will help subscribers establish and use their connection. It is intended only for students living in University Residences. Set-up procedures may be different for ***ResNet*** users in other locations.

As a subscriber to ***ResNet***, it is your responsibility to provide your own "network ready" personal computer. You will probably need to purchase a network adapter (also known as a network interface card or NIC) in order to make your computer network ready. The adapter must be compatible with your computer and have an RJ-45, 10base-T network connector. You will also need to provide an industry standard category 5 (CAT 5), twisted-pair jumper cable long enough to reach your computer from the ***ResNet*** outlet on the wall of your room. Jumper cables may be purchased from the main office of your residence.

Required Equipment for IBM compatible PCs

Unfortunately, many older models of PCs are not adequate for use as network clients. Therefore, the following requirements are offered as the minimum for which you may expect reasonable performance from your machine as well as the minimum configuration for which we can offer support.

System Component	Minimum	Desirable
Processor	Pentium	Pentium or later
RAM	16 Mb	64 Mb or more
Hard Disk Capacity	1 GB	4 GB or more
Operating System	Windows 95	Windows 95 or later

For the greatest ease of installation, we recommend that you have a "Plug-and-Play" (PnP) capable PC running Windows 95 or Windows 98 with a PnP network interface adapter (NIC) such as one of the cards listed below. The cards we have listed here are only examples of NICs that are known to be available within walking distance of Purdue. We do not require the use of any particular brand of card. When you purchase a NIC, we recommend that you keep your receipt and packaging so that the card can be returned in the event that it proves to be incompatible with your machine. If you install your NIC prior to arriving on campus, please keep the driver diskette(s) with your machine. You will need the diskette(s) if you experience problems and need to re-install the driver. Also, in order to install the driver for your NIC, you must have your Windows 95 or Windows 98 CDROM with you at the time of installation. All driver installations require access to the same ".cab" files that the operating system was installed from (which are located on the Windows CDROM). There are several different versions of the Windows CDROM and attempting to use someone else's CDROM for this purpose may corrupt your system files.

There are a wide variety of network adapters available for PCs, including "low cost" adapters that typically have limited, poorly written instructions and tend to experience more compatibility problems than the higher cost adapters. The Computing Center does not have drivers and/or documentation for every network adapter that you could possibly purchase. Therefore, although we do not require anyone to purchase a specific adapter, we suggest that you purchase one of the adapters listed below - especially if you are not comfortable with your own ability to troubleshoot problems that may arise with your equipment. Should you encounter a problem, the Computing Center staff will attempt to help you, but the functionality of your equipment is ultimately your responsibility.

3COM	Etherlink III 3C509B-TPO	For desktop system with ISA bus
SMC	EtherEZ SMC8416T	For desktop system with ISA bus
3COM	Etherlink III 3C900B-TPO	For desktop system with ISA bus
SMC	EZ Card 10 SMC1208T	For desktop system with ISA bus
Boca Research	Boca LANcard BEN500IT	For desktop with PCI bus (10/100)
3COM	Megahertz 3CXE589DT	For laptop with PCMCIA slot

Most of these cards are 10 MHz only cards. The "10/100" cards will work just as well, but they are not necessary and may be more expensive.

Required Equipment for Macintosh PCs

Unfortunately, many older models of Mac's are not adequate for use as network clients. Therefore, the following requirements are offered as the minimum for which you may expect reasonable performance from your machine as well as the minimum configuration for which we can offer support.

System Component	Minimum	Desirable
Processor	68040	Power PC or later
RAM	16 Mb	32 Mb or more
Hard Disk Capacity	200 Mb	1 GB or more
Operating System	System 7.1.3	System 7.5.3 or later

Due to the improved network features of "Open Transport", it is recommended that anyone using a MacOS earlier than System 7.5.3 upgrade to 7.5.3 or later.

You will have to refer to your system's documentation to determine what type of network adapter you will need to make your machine compatible with the 10base-T network connection provided by ResNet. If needed, we recommend that you purchase a Farallon adapter such as:

PN502a AAUI to UTP transceiver for many systems with onboard Ethernet
PN592a-TP NIC for LC family
PN590a-TP NIC for MAC II family

If you do not know which type of adapter to purchase for your specific machine, Farallon has an excellent Ethernet product selector on their web site at http://www.farallon.com/products/selector/. Please make certain that the product you purchase is the correct type for your model of computer.

2. Program Responsibilities

The success of the ***ResNet*** service is dependent upon the combined efforts of the University Residence staff, the Purdue University Computing Center (PUCC), and the network subscriber. By understanding the responsibilities of each of these entities you will be in a better position to seek help should you encounter problems.

University Residences

The manager and his/her staff administer the ***ResNet*** service. They process the ***ResNet*** subscription requests, submit and track all orders for installation and removal of service, and handle billing/refund issues. If you have questions regarding the subscription process, contact the main office of your residence.

Purdue University Computing Center (PUCC)

The Computing Center's Purdue Data Network division (PDN) is responsible for maintaining the overall functionality of the data network. PDN staff members perform the activation/deactivation of the network connections to student rooms (upon receiving requests from the residence hall staff). PDN also provides technical assistance to subscribers that experience difficulties with establishing their network connection. The Computing Center does NOT provide repair services or general software consulting for student owned computers.

PDN oversees the activities of the Resident Computing Consultants (RCC) and dispatches a technician or network engineer in the event that an RCC is unable to resolve a problem.

Network Subscriber

As a subscriber to ***ResNet*** services, you are entitled to the full benefits offered by the program. However, when it comes down to establishing your service and keeping it functional, you are the most important member of the ***ResNet*** team. You are responsible for determining whether your equipment and software are suitable for use with the ***ResNet*** services and for maintaining their functionality. It is your responsibility to obtain and install the network adapter and necessary software needed to make your PC "network ready". You will need to perform all setup of your equipment and software. It is also up to you to report any problems that you have with your subscription.

You must use the IP address that was assigned to you by the main office of your residence. **Never** try to use another address for your machine. Use of an address that was not registered for your machine may interfere with someone else's use of the network and/or render your ***ResNet*** connection nonfunctional. *Deliberate attempts to use an address different from that which the main office assigned are violations of PUCC policy that will not be tolerated and will be referred to the Dean of Students Office for appropriate action.*

Your use of the ResNet connection is subject to local, state, and federal laws as well as Purdue University policies (see Regulations and Policies in section 5 below). Violations of these laws and policies will be dealt with by the proper authority. Inappropriate use of your network connection will have consequences!

3. Installation Guidelines for IBM compatible Personal Computers

The best sources of detailed instructions for installing your equipment are the manuals that were packaged with the equipment. It is beyond the scope of this guide and simply not practical for us to try and provide detailed instructions for installation of network adapters and associated software drivers. Therefore, the following should be treated as general guidelines for the process of getting your machine operational as a client of the Purdue Data Network. **Your machine must be fully functional prior to attempting the installation of a network adapter**. If you are aware of any hardware or software problem(s) existing in your machine, correct the problem(s) before proceeding with this installation!

Hardware Installation

University personnel, including your RCCs, are not authorized to perform hardware installations in student owned computers. Therefore, if you need help with hardware installation, you will need to ask your computer vendor, an authorized service center, a family member, or friend to help you install your network adapter. To install the adapter in your machine:

1. Read the information supplied with the card. If there is something you do not understand, find someone that can help you figure it out (see "Getting Help" below) before attempting to install the card. Insure that any jumpers or switches that need to be set on the card are in the correct position.

2. Turn off your PC and **disconnect the power**.

3. Remove the cover from the machine.

4. Select an open expansion slot that is of the same type as the adapter that you are about to install. Refer to your system's manual if you are not sure which slot is the correct type. Remove the screw that secures the filler panel for that slot and remove the panel.

5. Carefully remove the adapter from its package and insert it into the empty slot. **Be certain that the card is fully seated** in the connector and properly aligned with the back panel. Then secure it with the screw removed from the filler panel in step 4.

   One of the most common problems that we have found, when subscribers ask for help, is that they have not seated the card completely. When you press hard enough to seat the adapter, you should feel it go down into the socket.

6. Replace the system cover and reconnect the power.

7. Connect the jumper cable between the connector on your network adapter and the ***ResNet*** outlet, on the wall of your room, that was assigned to you. If you are the first subscriber in your room, your outlet will typically be the one labeled with "-A" appended to the room number. If your roommate is also a ***ResNet*** subscriber, both the "-A" and "-B" outlets will be active. In this case, even though either outlet will work, you should still use the outlet that was assigned to you in order to avoid future complications. Do not attempt to use the "-1" or "-2" outlets. They are only used for telephone connections and do not work as data connections. In fact, use of these outlets could damage your Ethernet interface.

Software Installation

[Subscribers that have Windows 98 on their machines may substitute "98" for "95" in the following instructions.]

Turn on your PC and let it boot. If you have a PnP capable machine running Windows 95, the operating system should automatically detect the new card and install the drivers for it. If you are not running Windows 95, your adapter is not PnP capable, or for some other reason your adapter was not automatically detected, you will have to run the installation procedure provided by the manufacturer. Read your manual and follow the manufacturer's instructions for installing the drivers for the adapter. If you don't have a manual or installation diskette, then even though we will do our best, it may not be possible for us to help you. Once the drivers have been installed, you must tell your system what it is called (machine name) and where it can be found on the network (IP address). You also need to provide some other necessary information that is shown here as well as provided to you by the main office of your residence.

1. Right-click (click using the right mouse button) on the "**Network Neighborhood**" icon, then select "**Properties**" from the menu that is displayed.

   -OR-

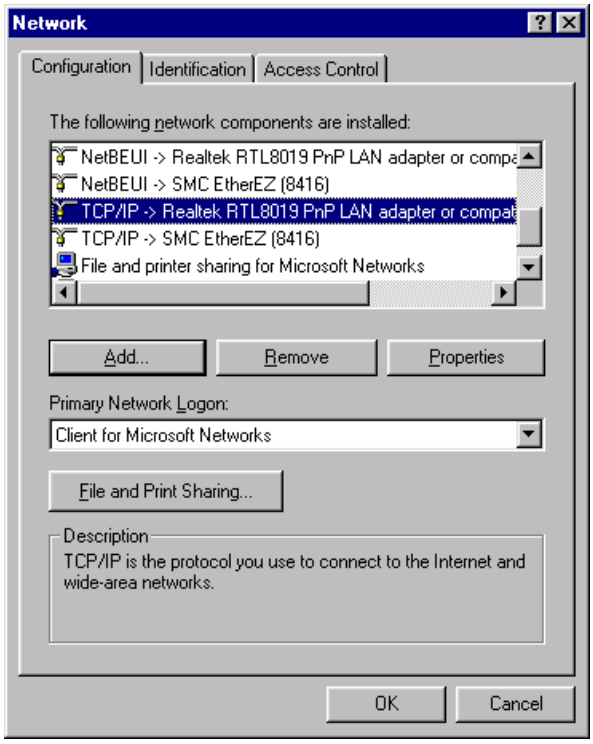
   Click the "**Start** " button on your task bar and select "**Control Panel**" from the "**Settings**" menu. Then, double-click on the "**Network**" icon on the "**Control Panel**" window.

2. Look at the list of installed components on the "Configuration" tab of the "Network" properties sheet. Verify that there are entries which include the name of your network adapter, such as:

   Realtek RTL8019 PnP LAN adapter or compatible TCP/IP

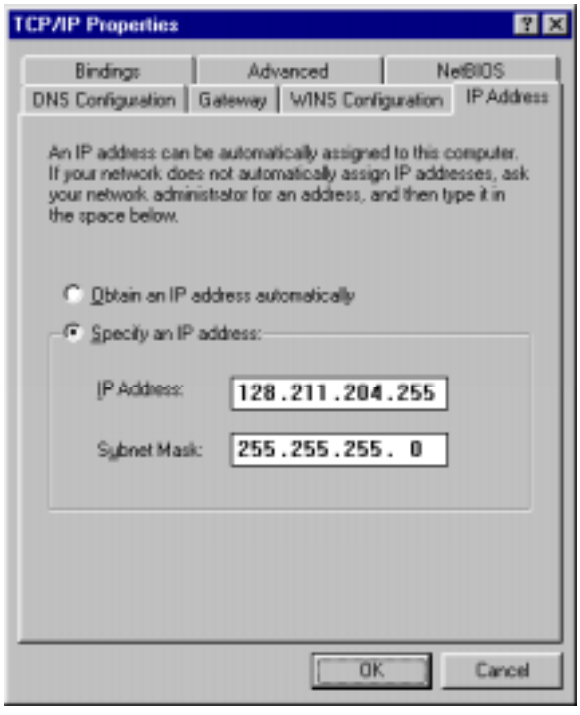
   Note: Sometimes a NIC is sold under more than one brand name. Windows 95 may recognize your card as being a different brand than that which you purchased. The above example is for a "Genius LAN" card that shows up as a Realtek.

   If your machine has more than one adapter installed (which will be the case if you have a Dialup adapter or AOL adapter already installed), the TCP/IP entry will include the name of your adapter like that shown in the graphic. If your adapter card does not show up in this list, then the drivers were not installed – go back and install the drivers first.

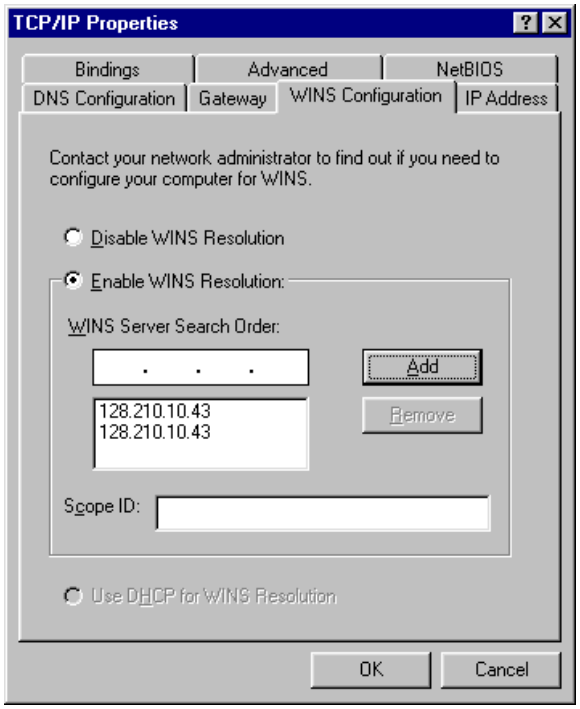


3. Select the TCP/IP entry that includes the name of your adapter card (if any) by clicking on the entry, then click the "Properties" button. If the TCP/IP entry is missing, see "Troubleshooting" below.

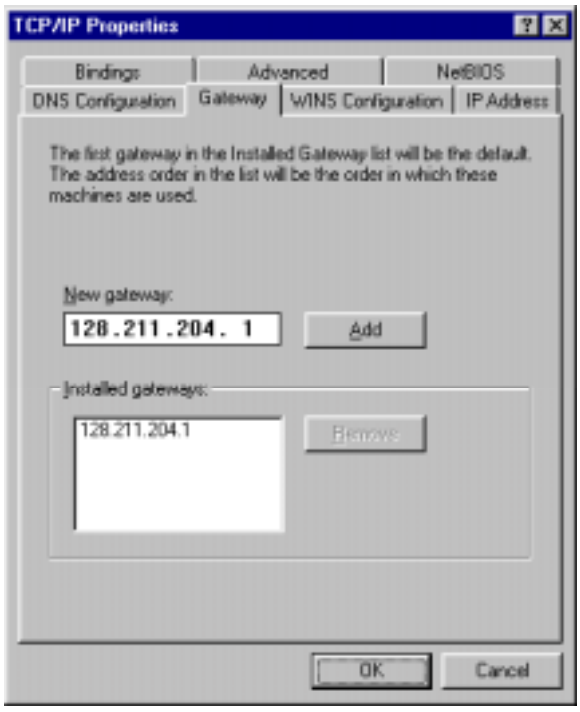
4. On the "**IP Address**" tab of the "TCP/IP Properties" sheet, click the bullet in front of "**Specify an IP address**". Enter the IP address for your machine (128.211.___.___ from the information that your main office supplied you) and the subnet mask (255.255.255.0).



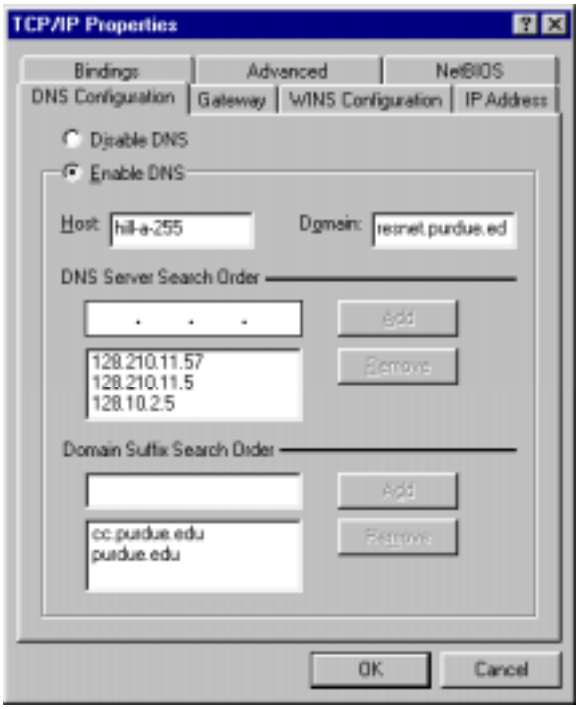
5. Click the "**WINS Configuration**" tab and click the bullet in front of "**Enable WINS Resolution**." Enter the IP address of the WINS server (128.210.10.43) in the "WINS server search order" box. Then click the Add button. Repeat this step so that the WINS server IP address is listed **twice**.



6. Click the "Gateway" tab. Enter the gateway address for your subnet (128.211.____.1 from the supplied information) under "New gateway:" and click the "**Add**" button.



7. Click the "**DNS Configuration**" tab. Click the bullet in front of "**Enable DNS**" and enter your machine's host name (_____ from the supplied information) and domain (resnet.purdue.edu). Enter the IP address of the name server (128.210.11.57) under "DNS Server Search Order" and click the "**Add**" button next to it. Enter the IP addresses of the secondary name servers (128.210.11.5 and 128.10.2.5) in the same manner.



8. Enter "cc.purdue.edu" in the text box below "Domain Suffix Search Order" and click the "**Add**" button next to it. Then enter "purdue.edu" in the same text box and click "**Add** " again.

9. Click the "**Bindings**" tab. Make sure that "Client for Microsoft Networks" is present and has a check mark in front of it. If there is no check mark, click on the box. If it is not present, see "Troubleshooting" below.

10. Go back to the "**IP Address**" tab and double-check your IP address entry. It is very important that you get this entry correct! Your IP address should NEVER end with a "**.1**"! Only the gateway address ends with "**.1**" and it should never be used as your IP address.

11. Click on the "**OK**" button. The "Network" sheet should now be visible again.

12. If you want to share files and/or printers with other ***ResNet*** subscribers, access your career account files, or print to the residence hall printer from within a Microsoft Windows application, then look for "File and printer sharing for Microsoft Networks" in the list of network components. If this component is missing, then click on the "**Add**" button. In the "Select Network Component Type" window, select "Service" and click on the Add button. In the "Select Network Service" window, select "Microsoft" on the left-hand side and "File and printer sharing for Microsoft Networks" on the right-hand side, then click on the **OK** button. Click on the **CANCEL** button in the "Select Network Component Type" window. If it is not already selected, choose "Client for Microsoft Networks" as your **Primary Windows Logon** from the drop down list.

    WARNING! Enabling Microsoft file and printer sharing can expose your machine to malicious attacks from other network users. Only share files with the Access Type set to "Read-Only" unless it is absolutely necessary to grant someone "Full" access and **ALWAYS set a password on shared folders**.

13. Click on the "**OK**" button of the "Network" sheet.

14. At this point you will be prompted to restart your computer. Click on the "**Yes**" button and wait for your system to reboot. Once rebooted, your system should have a functional network connection. See "Using Your ***ResNet*** Connection below.

Troubleshooting

If you believe that you have correctly installed your network adapter and software drivers, but your network connection still does not function, verify that all of the installation steps were performed correctly. Check that the IP addresses for your host, the gateway, and the DNS servers were entered accurately. Correct any entry that is in error. (In some cases, you will have to delete the incorrect entry and enter it again correctly.) Once you are certain that everything is correct, reboot and try it again. If your system still refuses to function properly, see "Getting Help" below.

Here are a few typical problems and their resolutions:

Telephone cables DO NOT WORK as network cables. You must use a Category 5 (CAT 5) twisted pair cable. Jumper cables that are the correct type for your ***ResNet*** connection may be purchased at the main office of your residence.

If your "**Client for Microsoft Networks" entry is missing**: Click on the **Add** button in the "Configuration" tab of the "Network" window. In the "Select Network Component Type" window, select "Client" and click on the **Add** button. In the "Select Network Client" window, select "Microsoft" on the left-hand side and "Client for Microsoft Networks" on the right-hand side, then click on the **OK** button. Click on the **CANCEL** button in the "Select Network Component Type" window, then click on **OK** in the "Network" window.

If your "**TCP/IP" entry is missing**: Click on the **Add** button in the "Configuration" tab of the "Network" window. In the "Select Network Component Type" window, select "Protocol" and click on the **Add** button. In the "Select Network Protocol" window, select "Microsoft" on the left-hand side and "TCP/IP" on the right-hand side, then click on the **OK** button. Click on the **CANCEL** button in the "Select Network Component Type" window, then click on **OK** in the "Network" window.

If your "**File and printer sharing for Microsoft Networks" does not work**: You MUST enter your login and password when prompted during Windows startup. Do not click on **CANCEL**, otherwise "File and printer sharing for Microsoft Networks" will be disabled.

4. Installation Guidelines for Macintosh Personal Computers

The best sources of detailed instructions for installing your equipment are the manuals that were packaged with the equipment. It is beyond the scope of this guide and simply not practical to try and provide detailed instructions for installation of the network adapter and associated software drivers. Therefore, the following should be treated as general guidelines for the process of getting your machine operational as a client of the Purdue Data Network.

Hardware Installation

Many recent Macintosh machines have onboard Ethernet. There is no need to install a NIC inside these machines. However, you may need to attach an adapter to make your "EtherTalk" interface compatible with the industry standard 10base-T network connection in your room. Consult your owner's manual to determine whether an adapter is required. If you do not have an onboard Ethernet, read the manual that is provided with the network adapter that you purchase and follow the directions given to install it in your machine. University personnel, including your RCCs, are not authorized to perform hardware installations in student owned computers. Therefore, if you need help with hardware installation, you will need to ask your computer vendor, an authorized service center, a family member, or friend to help you install your network adapter.

Connect the twisted-pair jumper cable between the network connector (or adapter) on your machine and the ***ResNet*** outlet, on the wall of your room, that was assigned to you. If you are the first subscriber in your room, your outlet will typically be the one labeled with "-A" appended to the room number. If your roommate is also a ***ResNet*** subscriber, then both the "-A" and "-B" outlets will be active. In this case, even though either outlet will work, you should still use the outlet that was assigned to you in order to avoid future complications. Do not attempt to use the "-1" or "-2" outlets. They are only used for telephone connections and do not work as data connections. In fact, use of these outlets could damage your Ethernet interface.

Software Installation

If you installed a NIC in your machine, you may have to install drivers for it as well. Follow the installation instructions provided with the adapter to do this. Machines with onboard Ethernet will already have drivers installed.

You must tell your system where it can be found on the network (IP address). You also need to provide some other necessary information that is shown here as well as provided to you by the main office of your residence. The following directions assume that you have MacOS System 7.5.3 or later. The steps for earlier versions of MacOS are similar, but use control panels called "Network" and "MacTCP" instead of "AppleTalk" and "TCP/IP".

1. Open your main menu by clicking on the apple in the upper left corner of your screen. Keeping the mouse button depressed, drag the cursor down to "Control Panels" on the menu. This will open a sub-menu. Continue to drag the cursor down to "AppleTalk" on the sub-menu and release the button.

2. On the AppleTalk window, select "Ethernet" from the drop down list beside "Connect via:" (Only one entry from the list is visible until you click on the text box.) Then close the window by clicking on the button in the upper left corner of the window.

3. Once again, click on the apple and drag down to "Control Panels" on the main menu, then to "TCP/IP" on the sub-menu and release the button.

4. On the TCP/IP window, under "Connect via:" select "Ethernet" from the drop down list. Then select "Manually" from the drop down list next to "Configure:"

5. Enter the IP address for your machine (128.211.___.___ from the information that the main office supplied you) in the text box next to "IP address:"

6. Enter the subnet mask (255.255.255.0) in the text box next to "Subnet mask:"

7. Enter the gateway address (128.211.____.1) in the text box next to "Router Address:"

8. Enter the name server's IP address (128.210.11.57) in the text box next to "Name server addr.:" Then enter the IP addresses for the secondary name servers (128.210.11.5 and 128.10.2.5) under the name server's address in the same text box.

9. Enter "cc.purdue.edu" (without the quotes) in the text box under "Search domains".

10. Close the window by clicking the button in the upper left corner of the window. You are now ready to test out your network connection.

Troubleshooting

If you believe that you have correctly installed your network adapter and drivers (if necessary), but your network connection still does not function, verify that all of the installation steps were performed correctly. Check that the IP addresses for your host, the gateway, and the name servers were entered accurately. Make corrections to any entry that is in error. Once you are certain that everything is correct, try it again. If your system still refuses to function properly, see "Getting Help" below.

5. Using Your ResNet Connection

Regulations and Policies

Once your ***ResNet*** connection is established, the entire World Wide Web is at your fingertips via the Internet. Your ***ResNet*** connection does, indeed, provide you world-wide communications for e-mail and information retrieval. This freedom to roam the world from your keyboard comes with equivalent responsibilities. It is your responsibility, as a member of the Purdue community, to abide by all rules and

regulations associated with the use of Purdue University facilities. These include state and federal laws as well as Purdue University regulations and policies specified in the bulletin entitled **University Regulations,** which is available in the Dean of Students Office. You should consult the Dean of Students Office if you have any questions about the interpretation of a university regulation or policy. Also, read the PUCC document ZZ-POLICY for a description of PUCC policies. This document is available in paper form in the PUCC Information Center (MATH 231) or electronic form, via the World Wide Web, from the Computing Center's web site: http://www.purdue.edu/PUCC/. Violations of these rules and regulations will be dealt with by the proper authorities.

A few DO's and DON'Ts

Here are a few DOs and DON'Ts to help you understand what constitutes acceptable and unacceptable behavior as a ResNet subscriber. This is not an exhaustive list, these are only a few examples. Read the policy documents, described above, for detailed information.

- **DO** use common sense and good judgment while communicating with others on the network.
- **DO** abide by all local, state, and federal laws as well as Purdue University regulations and policies. Violators DO get caught!
- **DO** enjoy your connectivity without infringing on other's rights to the same enjoyment. Sending threatening e-mail, excessive amounts of e-mail ("mail bombing" or "SPAM"), or other attacks designed to deprive others of their rights to use the network without interference are not permitted.
- **DON'T** try to start an on-line business. Use of ***ResNet*** to promote any commercial or non-Purdue sanctioned activity by e-mail, web site, or any other means is not permitted.
- **DON'T** distribute copyrighted material. Copyrighted material should never be distributed without the permission of the copyright owner. Posting material in any publicly accessible location is considered "intent to distribute". It is illegal to post or make available any program, image, audio or video files containing copyrighted material without the permission of the copyright owner. This includes, but is not limited to, copies of commercial software tools, games, and MP3 files.
- **DON'T** distribute pornography or other illegal materials. Posting material in any publicly accessible location is considered "intent to distribute". Any items that you choose to distribute must conform to all local, state, and federal laws as well as Purdue University regulations and policies.
- **DON'T** download or use pirated software, games, or other illegally posted materials. Be aware that these illegal downloads often contain viruses or other "trojan horse" software that may give a complete stranger control of your computer or access to all of your files.

Networking Software

There are a few programs that most people find useful for taking advantage of their network connection. Two popular tools for TCP/IP networking are **telnet** and **ftp** . Many versions of these programs can be found on Internet web servers and FTP sites. Windows 95 includes basic versions of both of these programs that can be found in the "\WINDOWS" folder. The other tool that most people find useful is a web browser. The two most popular web browsers are **Netscape Navigator** and **Internet Explorer** from Netscape and Microsoft respectively. These programs are readily available in most computer outlets or they can be downloaded from their web sites. Links to these sites are included in the list of web sites below.

A few Web Sites

A short list of web sites, to help you begin exploring the World Wide Web on the Internet, can be found at here . If you do not have a web browser installed on your PC, you will have to install one in order to follow the links in this list. Web browsers are typically several megabytes in size, therefore it will be helpful to use either a CD-ROM or Zip disk to install your browser. It is also possible to download a browser from an FTP site on the Internet. Obviously, you will not be able to access any of these sites from your own machine until you have your ***ResNet*** connection installed and operating.

6. Getting Help

If you encounter problems while installing your network adapter or setting up your machine for use with your ***ResNet*** service, there are several ways for you to seek help. Often, the fastest, easiest way to get

help is to ask a friend or roommate, which has already succeeded with his or her own machine, to help you with yours. He/she may be able to spot something that you have overlooked. Also, if you have Internet access, you may find answers to your questions on Purdue's ***ResNet*** home page: http://www.purdue.edu/PUCC/resnet/.

The next way to seek help is to contact your Resident Computer Consultant (RCC). This is a student that lives in your residence and is employed by the Computing Center to provide you help with your ***ResNet*** connection. If you don't already know this person, you may obtain the name of your RCC from the main office of your residence or from the ***ResNet*** home page listed above.

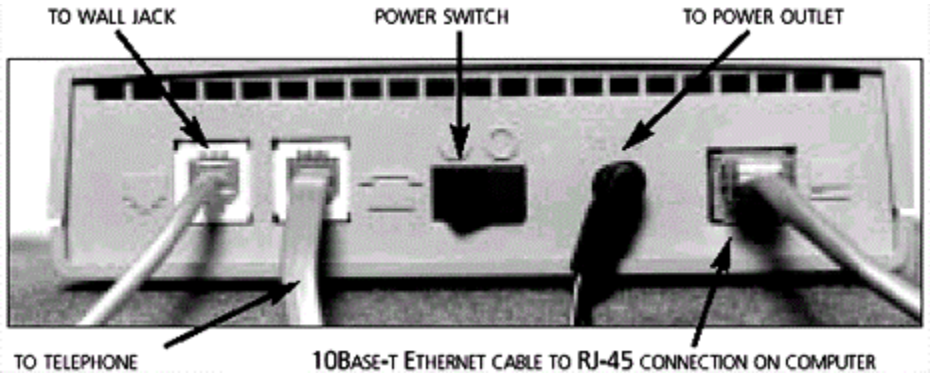
If you have a problem that your RCC is unable to resolve, it is time to call upon help from outside your residence. You may call the Computing Center at **49944** to request help. You may also fill in the Help Request Form on the ***ResNet*** home page or e-mail to resnet@purdue.edu. Depending upon the nature of your problem, the appropriate personnel will be notified and they will contact you to set up an appointment during which they will attempt to resolve your problem.

Other possible sources of help for machine configurations, though not specific to Purdue University, are the ***ResNet*** web pages for other universities. These may also be a source of other interesting networking information. A list of ***ResNet*** web pages can be found at http://rescomp.stanford.edu/directory/others.html.

7. ResNet 1-Meg Modem

For residence halls and apartments where Ethernet is not available, the ***ResNet*** service is provided by using the Nortel **1-Meg Modem**. This modem uses a new digital subscriber line (xDSL) technology that allows data rates that are many times faster than normal dial-up modems (currently approximately 960 kb/s down-link and 120 kb/s up-link). Although the modem's data rate is slower than that of an Ethernet connection, the difference in speed will not normally be noticeable for most network activities such as viewing web pages with a web browser or logging in to a remote server using **telnet**. Unlike a dial-up modem, the network link provided by this modem is available 24 hours per day. The telephone can be used normally while you are on-line with your computer - data and voice communications are transmitted simultaneously on the same wire.

Set-up procedures for your computer (described in this Guide) are the same for a xDSL connection as they are for an Ethernet connection, with one minor exception. The 10Base-T twisted-pair data cable from your computer's network interface card (NIC) plugs into the data connector on the **1-Meg Modem** rather than the ***ResNet*** wall outlet. Set-up procedures for the **1-Meg Modem** are described below.



1. **Connect your computer to the modem**. Both ends of your 10Base-T data cable have RJ-45 connectors (8 contacts). One end should be plugged into the connector on your computer's NIC. The other end plugs into the data connector on the modem (far right connector when looking at the back of the modem).

2. **Unplug your telephone from the wall jack**. The telephone cable has RJ-11 connectors (6 contact positions, some only have 2 or 4 contacts inserted) at both ends. One end should still be connected to your telephone. Plug the other end into the telephone connector on the modem (second from the left when looking at the back of the modem).

3. **Connect the modem to your wall jack**. Plug one end of the supplied telephone cable (RJ-11 at both ends) into the line connector on your modem (far left connector when looking at the back of the modem). Plug the other end into the telephone wall jack in your room.

4. **Connect the power adapter**. Plug the cable that is attached to the power cube into the 16V AC connector on the modem (second from right when looking at the back of the modem). Plug the power cube into a power outlet in your room.

5. **Turn the modem power switch on**. Depress the rocker switch on the side that has the icon showing a "1" inside the circle. At this point, the Power and Loop Status indicator lights should be GREEN. If not, see "Getting Help" in this Guide. The modem is now ready for use.

Modem Indicator Lights

Indicators are listed below in the same order that they appear, from left to right, on the front of the unit.

Power

Green: Power is on.
Off: Power is turned off or disconnected.

Loop Tx/Rx

Green: Modem is transmitting to the network.
Yellow: Modem is simultaneously transmitting to and receiving from the network.
Red: Modem is receiving from the network.
Off: No data transfer in progress.

Loop Status

Green: Modem in sync with network equipment.
Yellow: Modem in process of synchronizing with network equipment.
Red: Modem not getting signal from network equipment.

Ethernet Tx/Rx

Yellow: Modem is transmitting data to the computer.
Red: Modem is receiving data from the computer.
Off: No data transfer in progress.

Ethernet Collision

Red: Ethernet collision detected.

Ethernet Link Status

Green: Active Ethernet connection with computer.
Off: No Ethernet connection with computer.

Mini Hubs

The **1-Meg Modem** is capable of supporting two subscribers. If both occupants of a room that is serviced by xDSL subscribe to ***ResNet***, the second subscriber will be issued a mini hub instead of a **1-Meg Modem**. Instructions for connecting the mini hub are given below. Please note that both subscribers will need to connect their PC's NIC to the mini hub – only the mini hub connects to the **1-Meg Modem**.

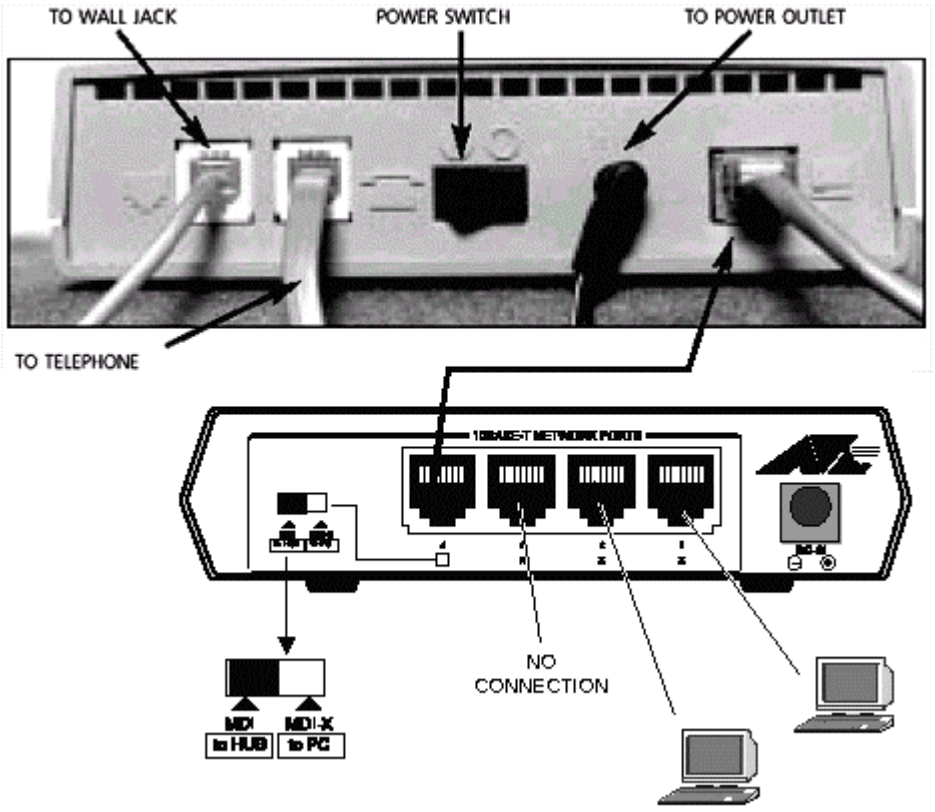
On the back of the mini hub is a power connector (far right), four RJ-45 data connectors, and a slide switch. While referring to the diagram below, perform the following steps to connect your mini hub.

1. Insure that the slide switch is set to the "MDI [to HUB]" position (toward the outside of the box). Your ***ResNet*** connection will not work if this switch is in the wrong position.

2. Connect the data connector labeled "4" (far left connector) to the RJ-45 data connector on the **1-Meg Modem** (far right connector) using a 10Base-T jumper cable. If your roommate's computer is already connected to the RJ-45 data connector on the **1-Meg Modem**, then it will have to be disconnected first.

3. Connect the network interface card (NIC) of each PC to the RJ-45 data connector labeled "1" or "2" on the mini hub using 10Base-T jumper cables.

4. Connect the power cube cable to the power connector (far right) on the minihub and plug the power cube into a power outlet in your room. The mini hub does not have a power switch. Therefore, the hub is "ON" as long as the power cube is plugged into power.



Assuming that all of the connections have been made correctly and that the power is ON to all of the equipment, the Ethernet Link Status LED on the **1-Meg Modem** should now be green. Also, the mini hub LEDs labeled "1", "2", "4", and "POWER" should all be on. The LEDs labeled "1", "2", "3", and "4" are link status indicators which are equivalent to the Ethernet Link Status LED on the **1-Meg Modem**. If your LEDs indicate different states than the ones described here, you should go back and double check all of your connections.

The remaining two LEDs on the front of the mini hub are labeled "ACTIVITY" and "COLLISION". The activity LED will flash each time an inbound or outbound data packet is detected by the hub. The collision LED lights when two PCs try to transmit at the same time and the data packets "collide" on the Ethernet. This is a normal condition that occurs occasionally on Ethernet networks. But, if this LED stays on continuously, there is a problem - see "Getting Help" above.