

# CITES



## Classroom Technologies

**CITES Classroom Technologies**  
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## Laptop Networking in ITS Classrooms

### Getting Started

If you are an instructor using a laptop in an ITS Classroom, will have students give in-class presentations or perhaps will host a guest speaker requiring a laptop; you may have wondered if and how these laptops can be connected to the campus network.

Indeed, each ITS Classroom has network access and the ability to connect a laptop to both the network and projection system. We can assist those instructors who wish to connect. This guide will provide some basic direction show some best practices and answer some of the most common questions.

The networking infrastructure on campus is very complex and varied and as a result, not all ITS classroom are exactly the same. This guide addresses the operation of “most” of the ITS classrooms and by filling out the Network Access web form and identifying the classrooms in which you are teaching, we will be able to provide you with additional individualized information if necessary.

You will need to provide your own network cable to connect to the ITS classroom ports. Most classrooms use standard inexpensive “CAT5” Ethernet cables. If you have any questions about cables, you can contact us and we can assist you further.

### Why a Laptop?

Most ITS classrooms are equipped with a resident PC that is networked and capable of handling the vast majority of instructional needs. However there are specific instances where laptops are very appropriate.

- Until recently, the ITS cabinets included resident Macintosh computers, however support was discontinued for that service in the Summer of 2003. Instructors who wish to continue using a Macintosh in the classroom rather than convert their files to the Microsoft Windows platform will need to bring in their own laptop. Our staff is very 'Mac-savvy' and we can advise those in need of assistance.
- If you are a current laptop user, the convenience of using your own system can be very appealing and many of you use software that is not provided (or cannot be provided) on resident systems due to licensing, compatibility or other issues. Users who bring their own laptop have the ability to run precisely what they need in the classroom.
- Newer “Tablet-PC” models offer touch screen capabilities that many instructors find very useful in the classroom for making annotations, drawing and other unique tasks.

It is often desirable to connect these devices to the campus network.

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### Other Resources

CITES Helpdesk  
<http://www.cites.uiuc.edu/helpdesk>

CITES Educational Technologies  
<http://www.cites.uiuc.edu/edtech>

UIUC Security Information  
<http://www.cites.uiuc.edu/security>

## Spring 2004 – Many Changes

In spring 2004, Classroom Technologies will be changing the way network addressing is handled in ITS classrooms and because of this, users who have previously used the network will have to configure their systems differently than in the past.

The change is for the better and will enable the majority of the ITS Classrooms use a method of dynamic addressing called DHCP. This will enable most laptop users to seamlessly move from home to the office and to the classroom with no need for reconfiguration or the keeping of multiple location settings.

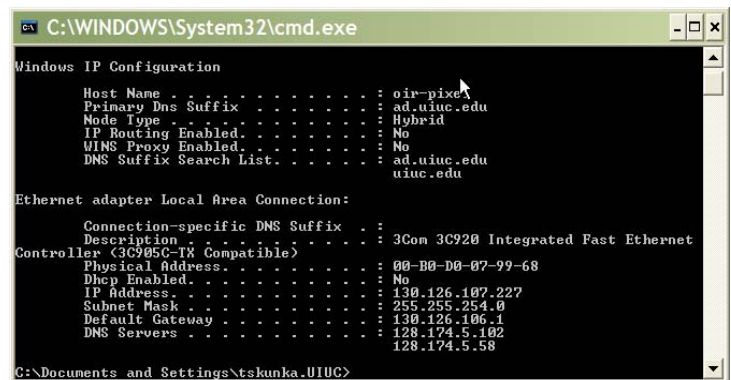
To make the system more secure, we will require you to register your laptop's MAC address with our office. The MAC address is a unique network identifier for your laptop and by registering your MAC address with us, we are able to provide network services only to registered systems. This prevents misuse of network resources and helps to preserve a high quality service. Registering your MAC address only takes a moment and allows us to better administer the ITS Classroom networks.

## How to Find Your MAC Address Microsoft Windows (All Versions)

Finding your MAC address is a very simple task if you know the secret. The following instructions applied to any version of Microsoft Windows although the illustrations are taken from Windows XP.

1. Click on the **Start Menu**
2. Click **Run**
3. Type the command **cmd** into the text box. This will open a DOS command-line window.
4. Click **OK**
5. At the flashing prompt, type the following command **ipconfig /all** followed by the **ENTER** key:
6. Your complete network information will be displayed.
7. Carefully write down the numbers listed next to "Physical Address" which will be seven hexadecimal numbers separated by dashes. And type **exit** to close the command window
8. Go to our webpage (<http://www.cites.uiuc.edu/classtech>)
9. Choose **Network Access Request** from the left-hand navigation bar and completely fill out the form with your contact information and the MAC address you previously acquired (exactly as written) and click the **SUBMIT** button to complete the form.
10. Our staff will record your information and contact you shortly with confirmation that we have entered your MAC address into our database and let you know if you are in a ITS classroom that requires a special configuration not covered by our new system.

If you have any questions or require assistance, we are more than happy to help. You can e-mail us at [classtech@uiuc.edu](mailto:classtech@uiuc.edu) or call us at 333-8165.



```
C:\WINDOWS\System32\cmd.exe
Windows IP Configuration
Host Name . . . . . : oiv-pixe
Primary Dns Suffix . . . . . : ad.uiuc.edu
Node Type . . . . . : Hybrid
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No
DNS Suffix Search List. . . . . : ad.uiuc.edu
                                     uiuc.edu

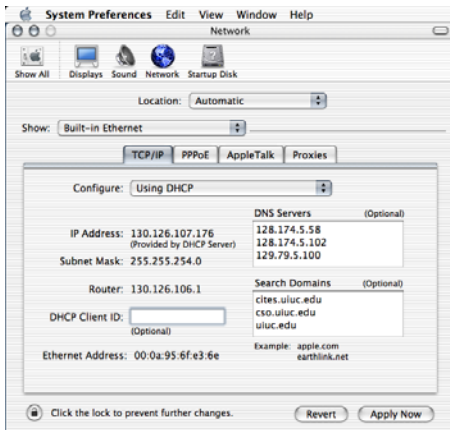
Ethernet adapter Local Area Connection:

   Connection-specific DNS Suffix  . : 
   Description . . . . .           : 3Com 3C920 Integrated Fast Ethernet
   Controller (3C95C-1X Compatible) : 
   Physical Address. . . . .       : 00-B0-D0-07-99-68
   Dhcp Enabled. . . . .           : No
   IP Address. . . . .              : 130.126.107.227
   Subnet Mask . . . . .           : 255.255.254.0
   Default Gateway . . . . .       : 130.126.106.1
   DNS Servers . . . . .           : 128.174.5.102
                                     128.174.5.58

C:\Documents and Settings\tskunka.UIUC>
```

**Figure—1 (Screenshot)**  
**Windows command-line interface showing the results of the “ipconfig /all” command.**

## How to Find your MAC Address Macintosh OS 10.x



**Figure—2 (Screenshot)  
OS 10.2 Network Preferences  
menu.**

Apple OS 10.x gives easy access to your laptop’s MAC address.

1. Click on **System Preferences** in your control dock.
2. Click on **Network**
3. Click on the **TCP/IP** tab if it is not already selected
4. Choose **Built-in Ethernet** from the Show menu above
5. Carefully write down the numbers listed next to “Ethernet Address” which will be six hexadecimal numbers separated by colons.
6. Go to our webpage (<http://www.cites.uiuc.edu/classtech>)
7. Choose **Network Access Request** from the left-hand navigation bar and completely fill out the form with your contact information and the MAC address you previously acquired (exactly as written) and click the **SUBMIT** button to complete the form.
8. Our staff will record your information and contact you shortly with confirmation that we have entered your MAC address into our database and let you know if you are in a ITS classroom that requires a special configuration not covered by our new system.

If you have any questions or require assistance, we are more than happy to help. You can e-mail us at [classtech@uiuc.edu](mailto:classtech@uiuc.edu) or call us at 333-8165.

## How to Find your MAC Address Macintosh OS 9.x



**Figure—3 (Screenshot)  
OS 9.x network information  
including hardware address.**

1. Click on the **Apple** icon in the upper left-hand corner of your screen.
2. Select **Control Panels** from the pulldown list.
3. Select **AppleTalk** from the Control Panel menu.
4. Select the **File** tab in the menu bar and click on **get info**.
5. Carefully write down the numbers listed next to “Hardware Address” which will be six hexadecimal numbers separated by spaces.
6. Go to our webpage (<http://www.cites.uiuc.edu/classtech>)
7. Choose **Network Access Request** from the left-hand navigation bar and completely fill out the form with your contact information and the MAC address you previously acquired (exactly as written) and click the **SUBMIT** button to complete the form.
8. Our staff will record your information and contact you shortly with confirmation that we have entered your MAC address into our database and let you know if you are in a ITS classroom that requires a special configuration not covered by our new system.

If you have any questions or require assistance, we are more than happy to help. You can e-mail us at [classtech@uiuc.edu](mailto:classtech@uiuc.edu) or call us at 333-8165.

## Configuring Your Network Settings

### General Information

Configuring your laptop to access the network is very straightforward and in many cases, there will be no changes needed to your system! After you have registered your MAC address with our office, you will be able to use DHCP to access the network from the majority of ITS classrooms.

However, there are some things to be aware of:

1. Most units on campus (and home networks) use DHCP (dynamic addressing) already and, if so, there will be no changes needed to your system. Dynamic addressing will enable you to access the campus network from any location that permits your system to access.
2. If your laptop currently has a statically assigned IP address, you will need to configure your laptop to use DHCP while in most ITS classrooms and then reconfigure your laptop when you return to the office. It is highly recommended that you work with your departmental computer support when making any changes to your network configuration.
3. There are still several rooms that are not able to be put onto the "ITS Classroom Network" at this time and are unable to use dynamic addressing configuration as given below. After you have submitted the form found on our website with your MAC Address and your personal information, we will contact you with more information if you are using one of these rooms. Note that if you are in a non-DHCP room, we will provide you with a static address to configure your system with while using the room in question.

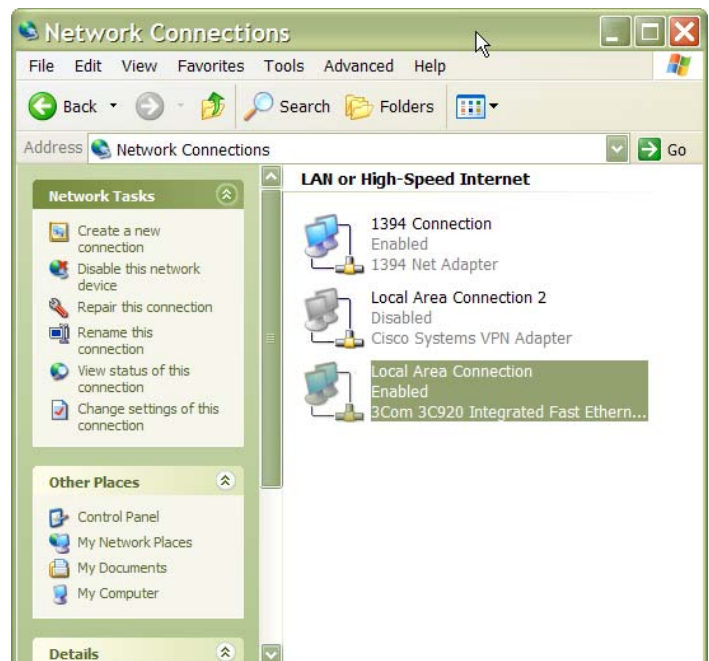
## Configuring Your Network Settings

### Microsoft Windows XP (similar for other versions)

Complete the following steps to configure your laptop for DHCP if it is not already:

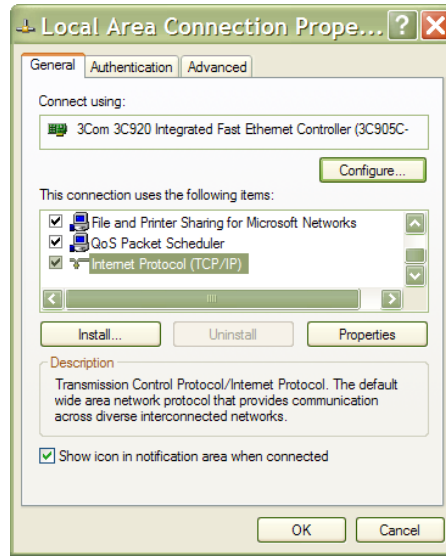
1. Click on the **Start Menu**
2. Click on **Control Panel**
3. From the Control Panel, Right-Click **the Network Connections** icon and choose **Open**
4. From the Network Connections window, Right-Click **Local Area Connection** and choose **Properties**.

*Note that the brand and model of your network card should appear by the correct Network Connection icon. Some users may have several "Local Area Connections" depending on system configuration.*

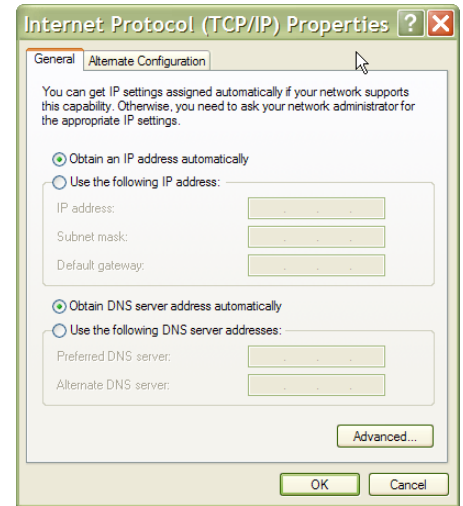


**Figure—4 (Screenshot)**  
**Windows Local Area Connections window with the proper network connection selected.**

- Under the General tab, select **Internet Protocol (TCP/IP)** in the scrollable window (*the item should be highlighted*) and click the **Properties** button.
- Under properties and the General tab, select the following two options: **Obtain and IP Address Automatically** and **Obtain DNS Server Address Automatically**.
- Click **OK** to close the Properties window and any previously open Windows.



**Figure—5 (Screenshot)**  
Local Area Network properties with the TCP/IP options selected.

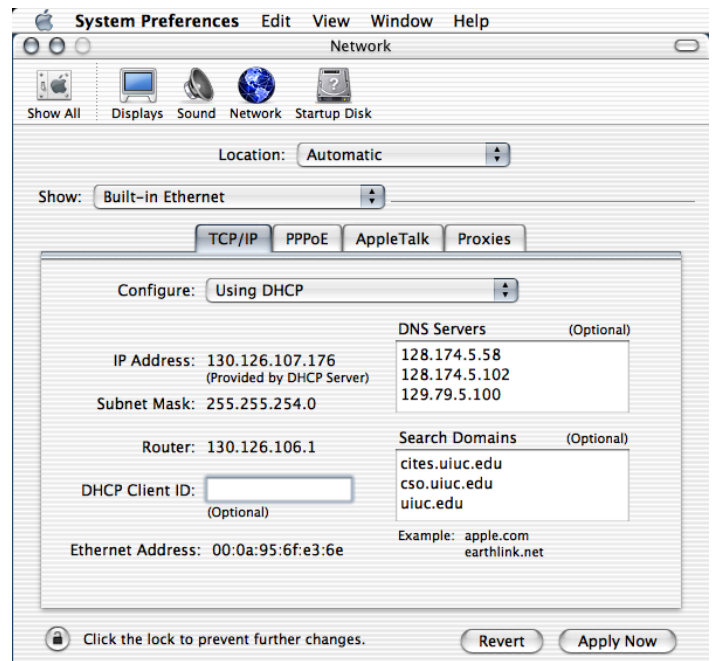


**Figure—6 (Screenshot)**  
TCP/IP settings window configured for dynamic addressing or “DHCP” as it is referred to.

## Configuring Your Network Settings

### Apple Macintosh OS 10.x

- Click on the **Apple Menu** in the top-left corner of your screen and select **System Preferences**
- Then, select **Network**. and select the **TCP/IP** tab if it is not already selected.
- In the Show menu, choose **Built-in Ethernet**.
- In the Configure menu, choose **Using DHCP**.
- Click the **Apply Now** button and close the window.

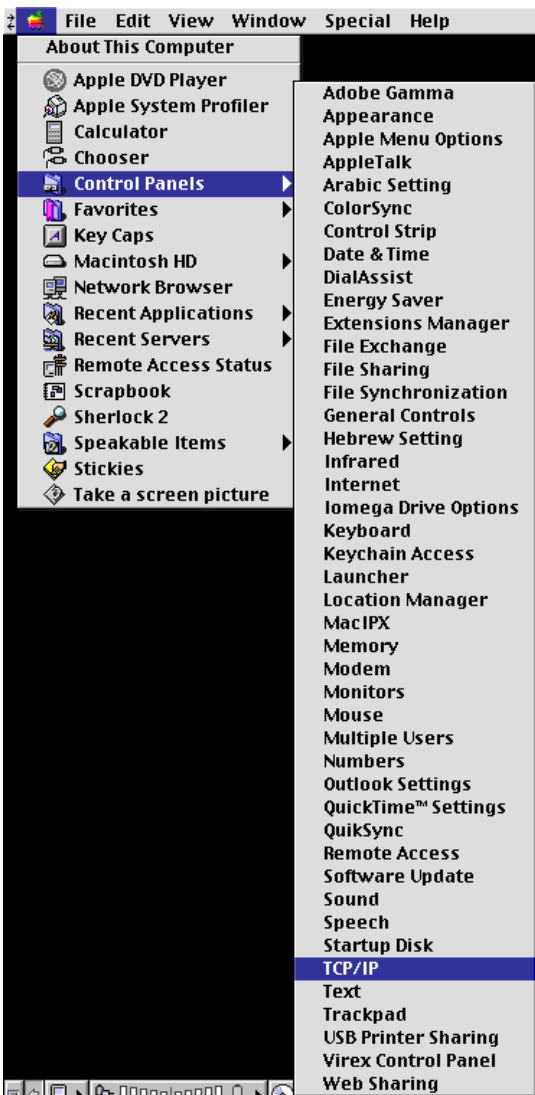


**Figure—7**  
OS 10.2 TCP/IP Network Preferences tab.

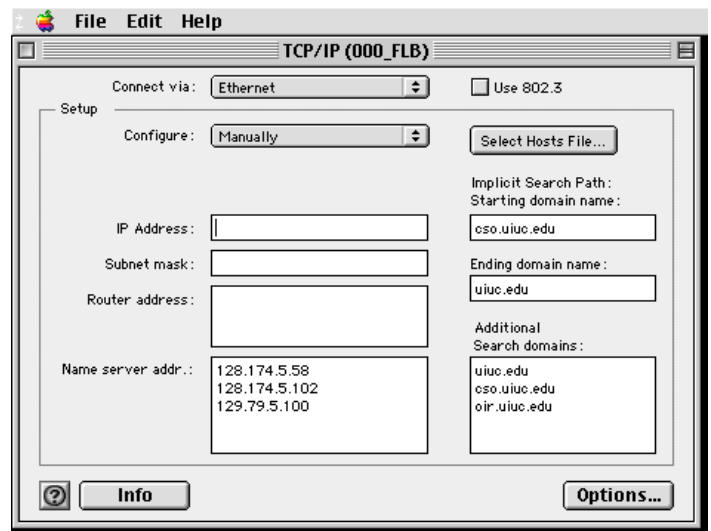
## Configuring Your Network Settings

### Apple Macintosh OS 9.x

1. Click on the **Apple Menu** in the top-left corner of your screen and select **Control Panels**.
2. Then, select **TCP/IP Settings**.
3. In the Connect via menu, choose **Ethernet**.
4. In the Configure menu, choose **Using DHCP Server**.
5. Close any open windows.



**Figure—8 (Screenshot)**  
**OS 9 Apple->Control Panels->TCP/IP**



**Figure—9 (Screenshot)**  
**OS 9 TCP/IP Settings**

## Frequently Asked Questions

**Q:** It appears that my settings are already set properly. Is this normal?

**A:** Absolutely, most departments and home networks already use DHCP so no configuration changes will be needed.

**Q:** I have been using the network in ITS Classrooms for several semesters. Do I still need to register my laptop?

**A:** Yes, all laptops must be registered or they will not be able to obtain IP settings required to access the network.

**Q:** Will the DHCP settings work in all ITS Classrooms?

**A:** No, several classrooms are in areas of campus with older networking. When you submit your form, we will review your request and in addition to putting your MAC address on file, we will provide you with static IP settings for you to enter into your systems and any other relevant information specific to the room in question.

**Q:** I am only using my laptop to display my screen and I will not be using the network. Do I still need to register?

**A:** No, however it is a good idea to do so just in case you decide later to use the network. In addition, registering all laptops can provide our office a better indication of how many laptop users we support and how to contact them if needed.

**Q:** If I register now and then purchase a new laptop, will I need to re-register?

**A:** Yes, the MAC address you are supplying is unique to a specific laptop. You will need to re-register with the numbers from the new system.

**Q:** Will I be able to move seamlessly between several ITS classrooms without changing network settings?

**A:** Probably. However, there is a chance that you may be using rooms that have different capabilities as described in the question, "Will the DHCP settings work in all ITS Classrooms?" and in such cases settings changes are unavoidable.

**Q:** How far in advance do I need to register my laptop?

**A:** Please provide us three (3) business days to update our database. Response will most likely be sooner, however it is better to be safe and register your laptop well in advance of your need.

**Q:** Will I need to register my laptop every semester?

**A:** Probably not. We will retain our records of your system however if you are teaching in several rooms over the course of the academic year(s) there is the chance of being in a room that cannot use dynamic addressing in the future. In this case, your laptop will not be able to use the DHCP settings and you will need to contact us for further information. As a precaution, you may re-register your laptop information and we will contact you if there needs to be any change in your configuration due to classroom change.

**Q:** Will this process provide access to non-ITS Classrooms?

**A:** No, non-ITS Classrooms are not a part of the Classroom Technologies network. For information concerning other classrooms, please contact your local network/computer support personnel.

**Q:** What about wireless network access?

**A:** Several buildings on campus have wireless networks that are accessible from ITS Classrooms. However, these networks are not a part of the ITS system and require different configurations.

Visit <http://www.cites.uiuc.edu/wireless> for more information.

**Q:** My students will be giving presentation using their own laptops, how is this handled?

**A:** Students will need to register their laptop with us just as faculty and staff do. At this time there is no distinction between types of laptop users.

## About CITES Classroom Technologies

In support of faculty and administration at UIUC, CITES ClassTech also provides consultation services to departments on equipment purchases and installations, and requirements for appropriate facilities, technology and support. When appropriate, we coordinate resources including contacting qualified vendors or rental equipment.

ClassTech can design an audio-visual package and carry it through to complete installation and the training of staff.

**Repair and Maintenance:** The engineering staff is available for preventative maintenance and/or repairs of audio, video, and related equipment whenever possible on a fee basis. This service can be provided to individual departments, units, or offices with multimedia installations or equipment. For further information please call 333-0506.

### **Our mission statement:**

The purpose of CITES Classroom Technologies is to serve the campus by providing the best possible instructional media support through effective implementation, training, and servicing of instructional media systems, contributing to a state-of-the-art teaching environment and improving the instructional capabilities of its instructors.

### **Our classrooms:**

Nearly one-hundred classrooms on campus are equipped with an Integrated Teaching System (ITS). For information concerning these systems, contact us at 333-8165 or by e-mail at [classtech@uiuc.edu](mailto:classtech@uiuc.edu).

### **More information:**

Information about specific classrooms is on the CITES Classroom Technologies website. Information includes:

- Listing of equipment in the room
- Pictures of the room, cabinets and equipment

General information about the room such as contact numbers, size, capacity, and floor plan

<http://www.cites.uiuc.edu/classtech>