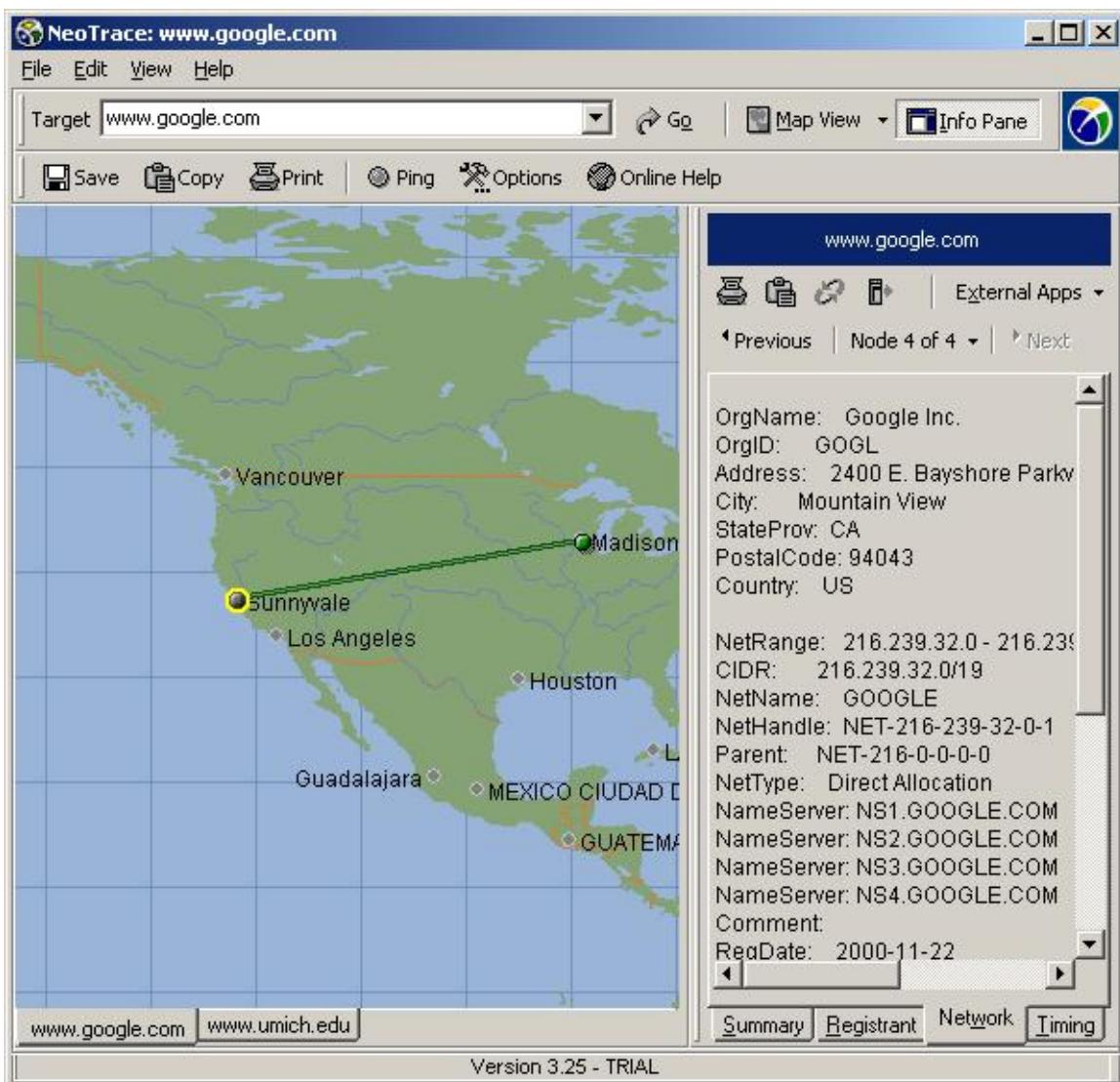


## 1.1.1

# MAPPING the INTERNET (NeoTrace)



March 2005



## Laboratory Overview

### **Objective**

At the end of this lab, students will be able to use NeoTrace to track the path that a packet of data takes from the student machine to a given destination.

### **Information for Laboratory**

- A. Students will use NeoTrace to trace the path that a data packet takes from there machine to a “series of destinations”.

### **Student Preparation**

The student will have completed requisite reading. The student will require paper for notes and should be prepared to discuss the exercises upon completion.

### **Instructor Preparation**

Before class, the instructor or a lab assistant will ensure that the computers have internet access and are able to successfully ping the destination IP Addresses.

### **Estimated Completion Time**

30 Minutes

## Path mapping

Data traveling from a source to a destination on any type of network can take many different paths. This data could be intercepted and compromised at any point between the source and destination.

### Installation:

If the NeoTrace software is not already present on your computer, you will need to download and install it. Neo Trace is not a free product, but is available for download as a 30 day free demonstration.

#### Step 1:

The best way to download the NeoTrace application is to connect to the internet and proceed to:

<http://www.download.com>

#### Step 2:

Once at download.com do a search for “NeoTrace” using the search bar at the top right side of the screen.



#### Step 3:

The search result will take you to a page containing the link to download NeoTrace. Select “Download Now” on the right hand side of the screen to begin download.

Search results

1-1 of 1

RE-SORT BY: Name	Date added	User rating	CNET rating	Downloads	Availability
		How we rate		Total   Last week	

**NeoTrace Pro 3.25 pop**  
Find out more about your network connection and the sites you visit.  
OS: Windows 95/98/NT/2000  
File Size: 1.56MB  
License: Free to try, \$30 to buy

09/12/2001

77% 

91 votes

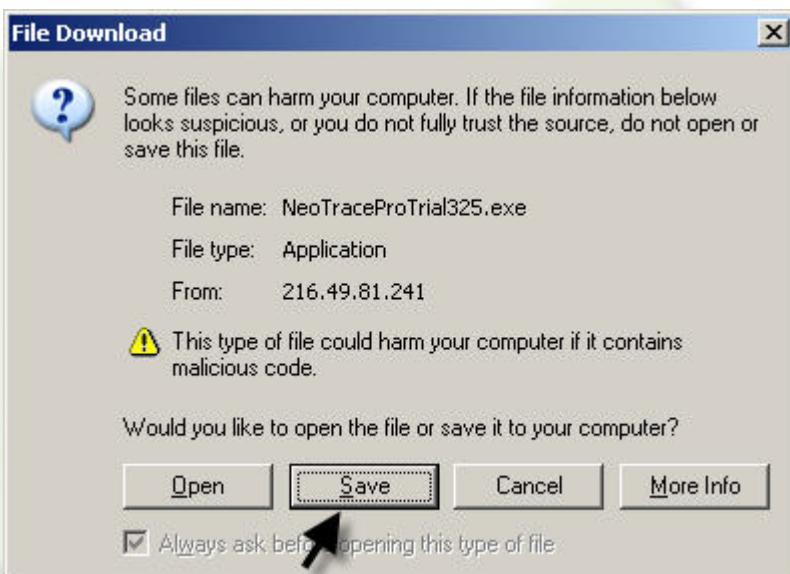
820,709

 Download now



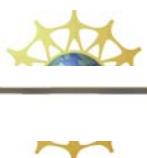
**Step 4:**

When prompted by the “File Download” screen select “Save” and save the file to your desktop.



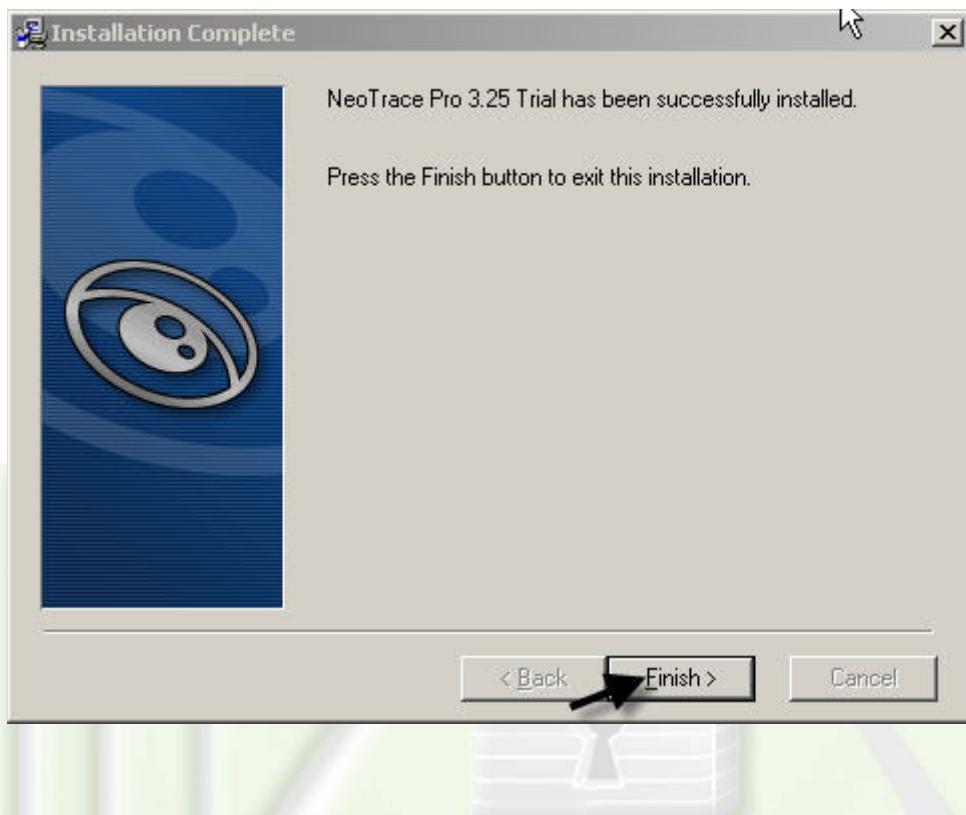
**Step 5:**

Navigate to your desktop and double click on the NeoTrace installer icon.



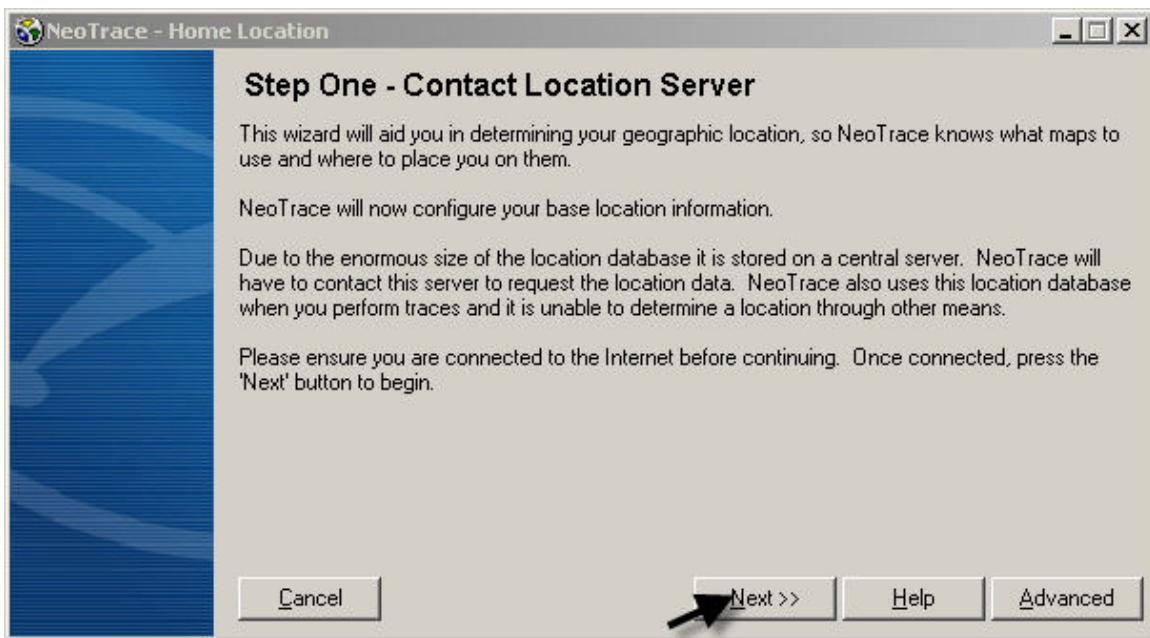
## **Step 6:**

Click “Next” through all of the installation screens to select the defaults. Click “Finish” when you reach the “Installation Complete screen.



## **Step 7:**

Once the installation has been completed you will be asked to “Contact Location Server”. The location server is used to set your geographical location as the source of the trace. This will be used to compare your present location to that of the destination computer. Click “Next>>” to proceed.



### Step 8:

You select your country and enter your current zip code. This is used to generate the map view in NeoTrace. Click "Next>>" to proceed.



## **Step 9:**

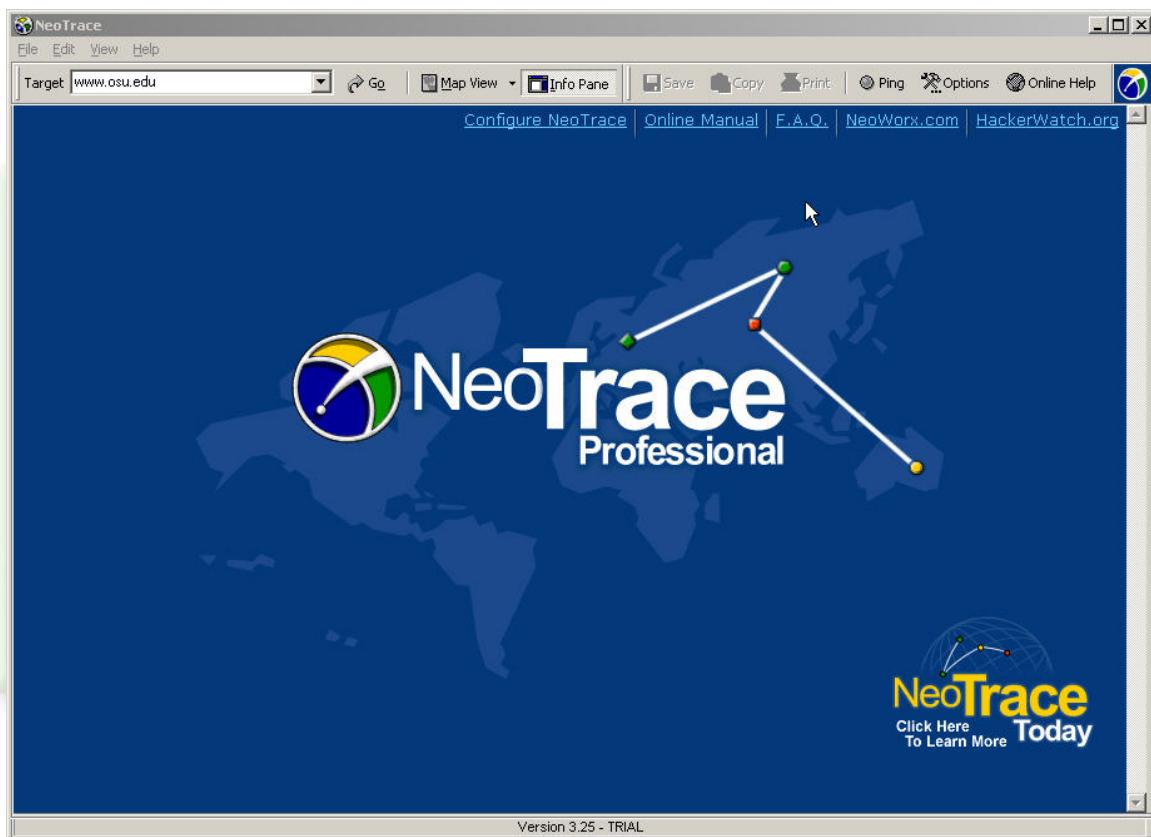
You have completed the NeoTrace set up and are ready to use the program. Click “Finish” to start using NeoTrace.

## **Using NeoTrace:**

### **Step 1:**

Open NeoTrace to the startup screen.

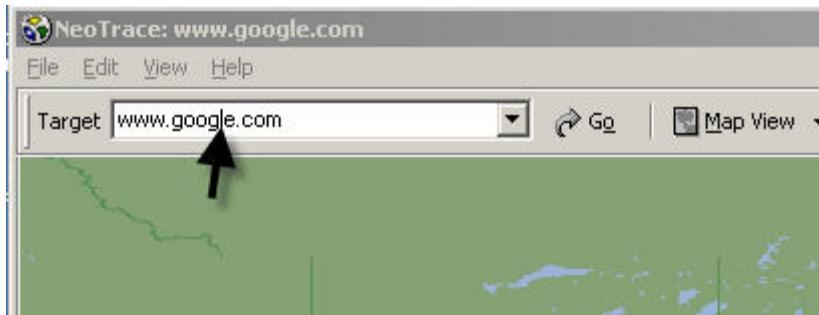
“Start > All Programs > NeoTrace Pro > NeoTrace Pro



### **Step 2:**

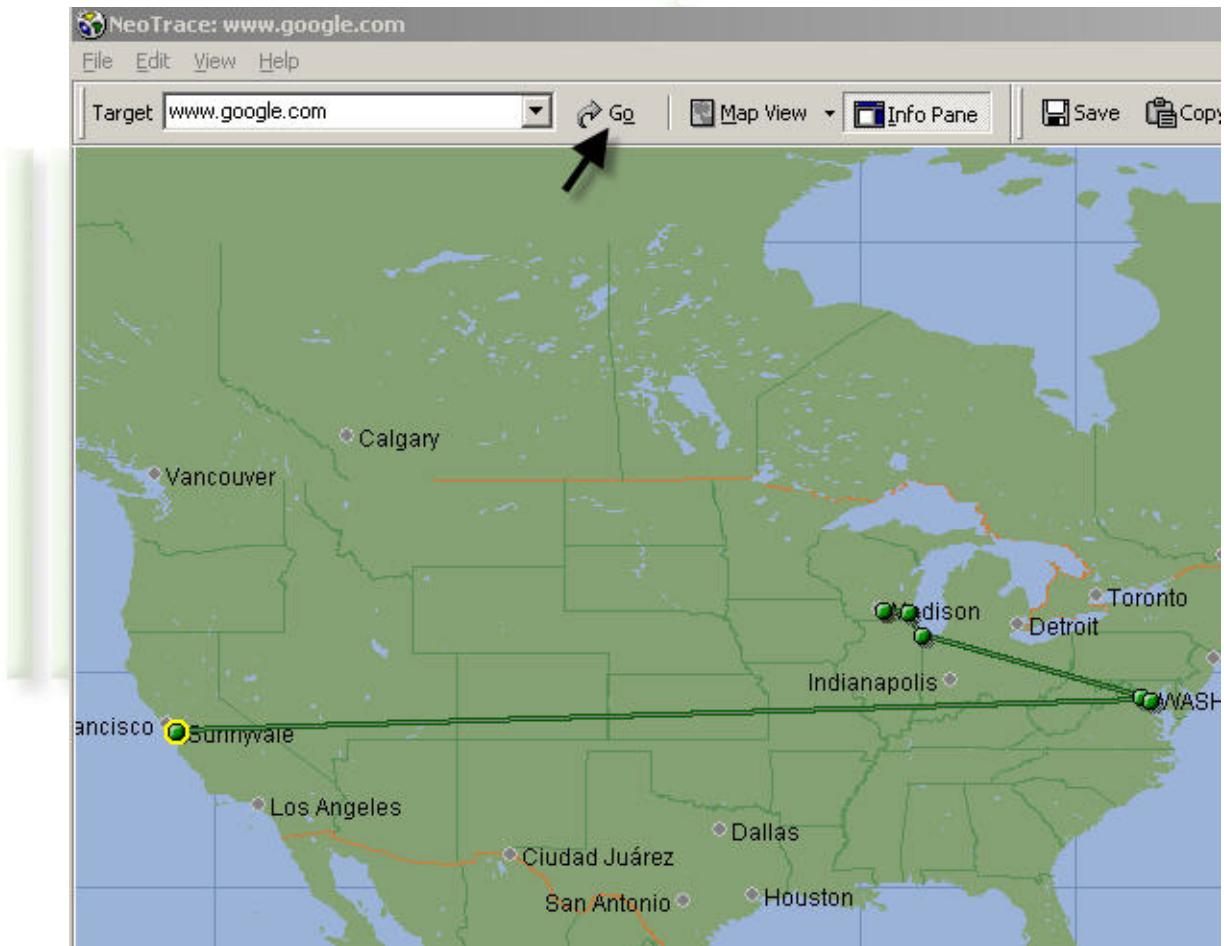
Select a destination site to trace the path that the data packet travels. NeoTrace comes with some default sites to trace.

Under “Target” select [www.google.com](http://www.google.com).



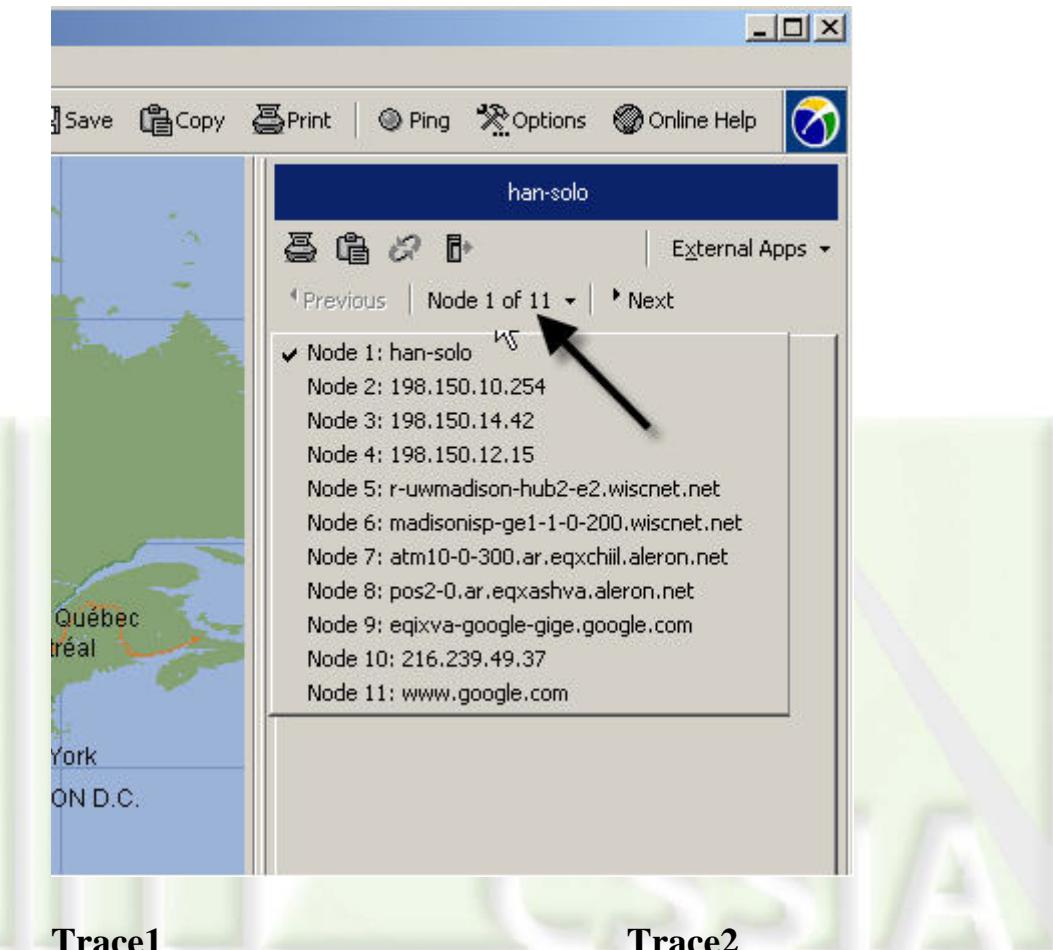
### Step 3:

Click “go” and watch the path that the data packet takes to the destination.



#### Step 4:

Click on the “node” button in the upper right hand corner of the screen. Write down each of the nodes that are listed in the space below under “Trace1”. Repeat the same trace and write down each of the nodes in under “Trace2”



#### Trace1

Node 1: \_\_\_\_\_  
Node 2: \_\_\_\_\_  
Node 3: \_\_\_\_\_  
Node 4: \_\_\_\_\_  
Node 5: \_\_\_\_\_  
Node 6: \_\_\_\_\_  
Node 7: \_\_\_\_\_  
Node 8: \_\_\_\_\_  
Node 9: \_\_\_\_\_  
Node10: \_\_\_\_\_

#### Trace2

Node 1: \_\_\_\_\_  
Node 2: \_\_\_\_\_  
Node 3: \_\_\_\_\_  
Node 4: \_\_\_\_\_  
Node 5: \_\_\_\_\_  
Node 6: \_\_\_\_\_  
Node 7: \_\_\_\_\_  
Node 8: \_\_\_\_\_  
Node 9: \_\_\_\_\_  
Node10: \_\_\_\_\_

**Trace1**

Node 11: \_\_\_\_\_  
Node 12: \_\_\_\_\_  
Node 13: \_\_\_\_\_  
Node 14: \_\_\_\_\_  
Node 15: \_\_\_\_\_  
Node 16: \_\_\_\_\_

**Trace2**

Node 11: \_\_\_\_\_  
Node 12: \_\_\_\_\_  
Node 13: \_\_\_\_\_  
Node 14: \_\_\_\_\_  
Node 15: \_\_\_\_\_  
Node 16: \_\_\_\_\_

Is the path that the data packet takes from the host to the destination the same each time? Yes/No

Explain: \_\_\_\_\_

**Step 5:**

Repeat Step4 using this URL “english.hongkong.com”

**Trace1**

Node 1: \_\_\_\_\_  
Node 2: \_\_\_\_\_  
Node 3: \_\_\_\_\_  
Node 4: \_\_\_\_\_  
Node 5: \_\_\_\_\_  
Node 6: \_\_\_\_\_  
Node 7: \_\_\_\_\_  
Node 8: \_\_\_\_\_  
Node 9: \_\_\_\_\_  
Node10: \_\_\_\_\_  
Node 11: \_\_\_\_\_  
Node 12: \_\_\_\_\_  
Node 13: \_\_\_\_\_  
Node 14: \_\_\_\_\_  
Node 15: \_\_\_\_\_  
Node 16: \_\_\_\_\_

**Trace2**

Node 1: \_\_\_\_\_  
Node 2: \_\_\_\_\_  
Node 3: \_\_\_\_\_  
Node 4: \_\_\_\_\_  
Node 5: \_\_\_\_\_  
Node 6: \_\_\_\_\_  
Node 7: \_\_\_\_\_  
Node 8: \_\_\_\_\_  
Node 9: \_\_\_\_\_  
Node10: \_\_\_\_\_  
Node 11: \_\_\_\_\_  
Node 12: \_\_\_\_\_  
Node 13: \_\_\_\_\_  
Node 14: \_\_\_\_\_  
Node 15: \_\_\_\_\_  
Node 16: \_\_\_\_\_

Is the path that the data packet takes from the host to the destination the same each time? Yes/No

Explain: \_\_\_\_\_

**Step 6:**

Repeat Step4 with a site of your choosing.

**Trace1**

Node 1: \_\_\_\_\_  
Node 2: \_\_\_\_\_  
Node 3: \_\_\_\_\_  
Node 4: \_\_\_\_\_  
Node 5: \_\_\_\_\_  
Node 6: \_\_\_\_\_  
Node 7: \_\_\_\_\_  
Node 8: \_\_\_\_\_  
Node 9: \_\_\_\_\_  
Node10: \_\_\_\_\_  
Node 11: \_\_\_\_\_  
Node 12: \_\_\_\_\_  
Node 13: \_\_\_\_\_  
Node 14: \_\_\_\_\_  
Node 15: \_\_\_\_\_  
Node 16: \_\_\_\_\_

**Trace2**

Node 1: \_\_\_\_\_  
Node 2: \_\_\_\_\_  
Node 3: \_\_\_\_\_  
Node 4: \_\_\_\_\_  
Node 5: \_\_\_\_\_  
Node 6: \_\_\_\_\_  
Node 7: \_\_\_\_\_  
Node 8: \_\_\_\_\_  
Node 9: \_\_\_\_\_  
Node10: \_\_\_\_\_  
Node 11: \_\_\_\_\_  
Node 12: \_\_\_\_\_  
Node 13: \_\_\_\_\_  
Node 14: \_\_\_\_\_  
Node 15: \_\_\_\_\_  
Node 16: \_\_\_\_\_

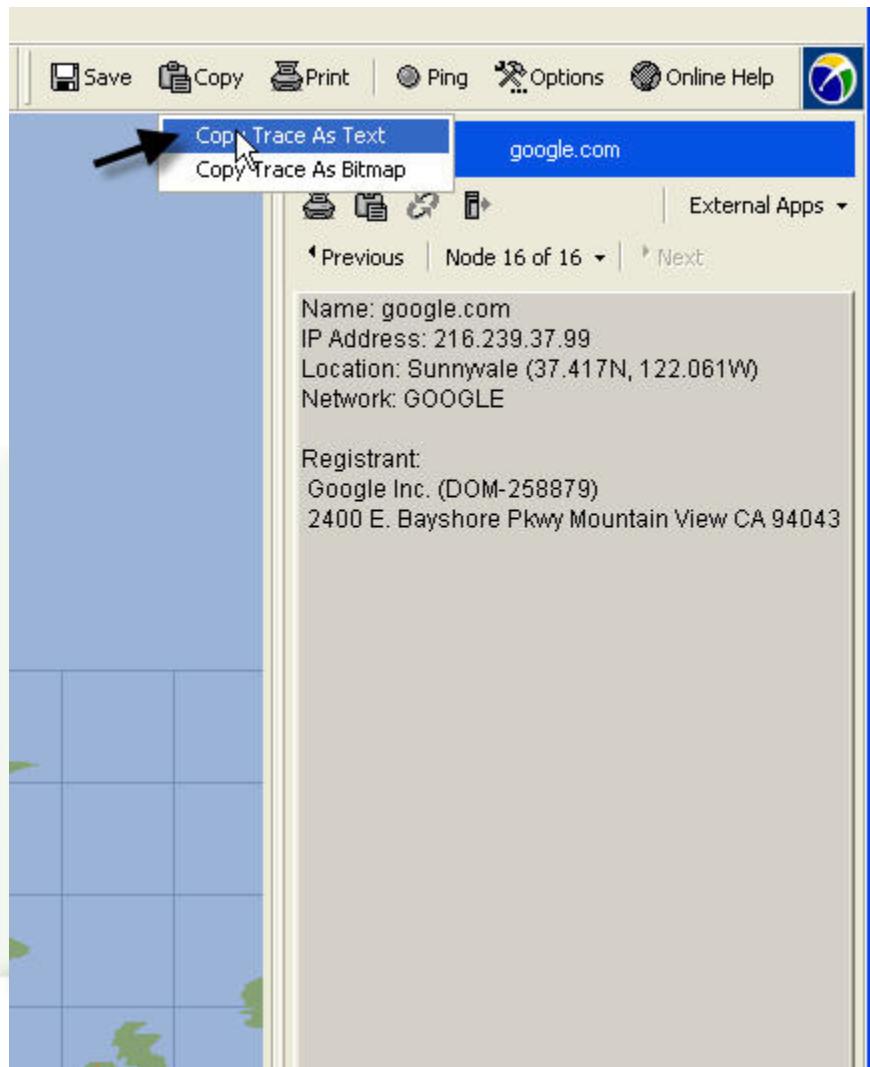
Is the path that the data packet takes from the host to the destination the same each time? Yes/No

Explain: \_\_\_\_\_

## Copy trace to text file:

### Step 1:

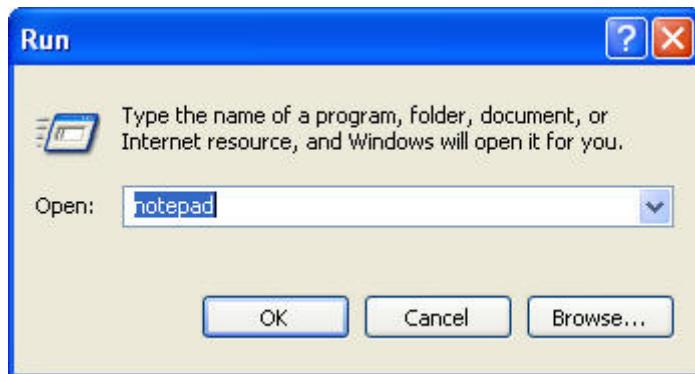
Copy your trace results to the windows clipboard



## **Step 2:**

Open Notepad.

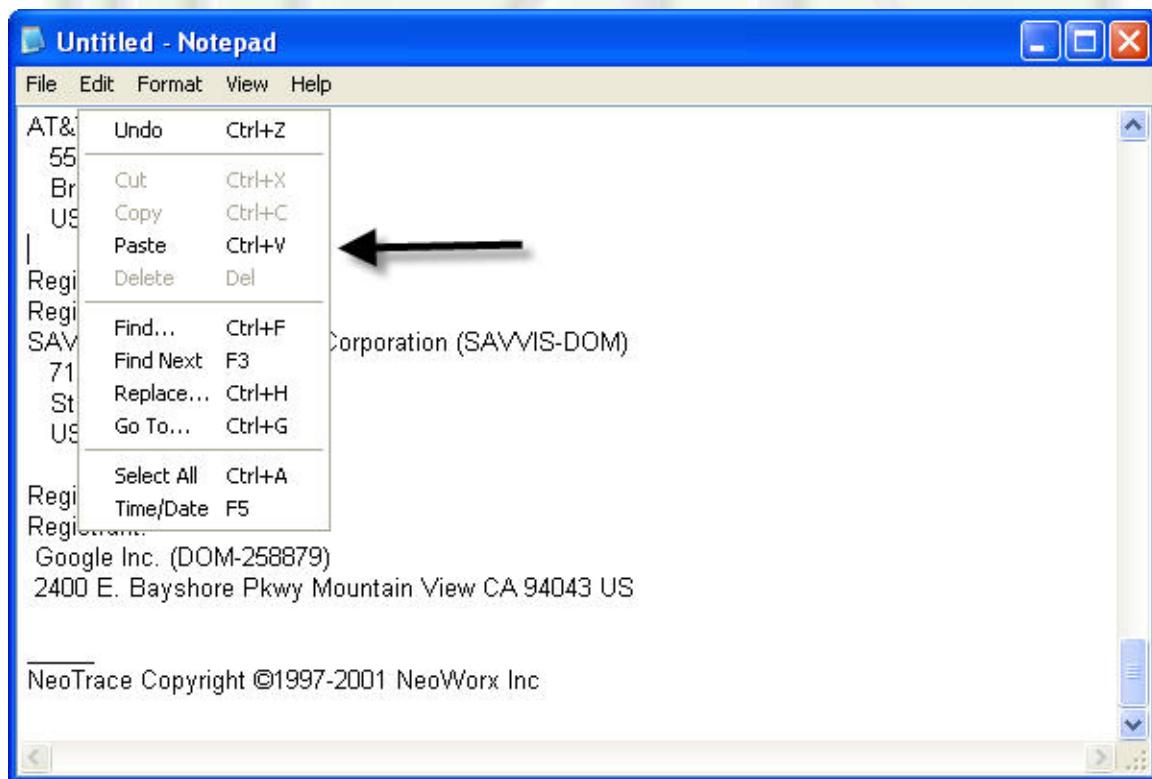
"Start > Run" Type in "notepad" and click ok.



## **Step 3:**

Paste the contents of the clipboard into notepad.

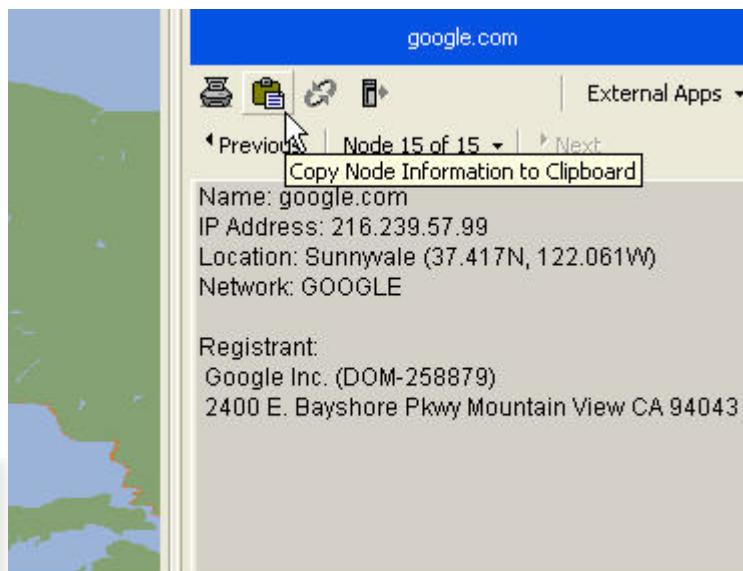
"Edit > Paste"



## **Copy Node Information to text file:**

### **Step 1:**

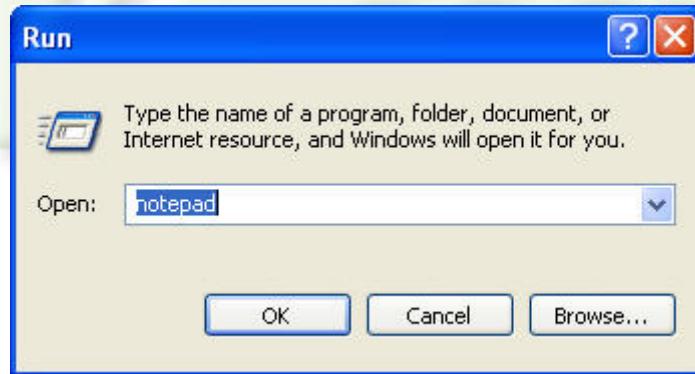
Copy your node information to the windows clipboard



### **Step 2:**

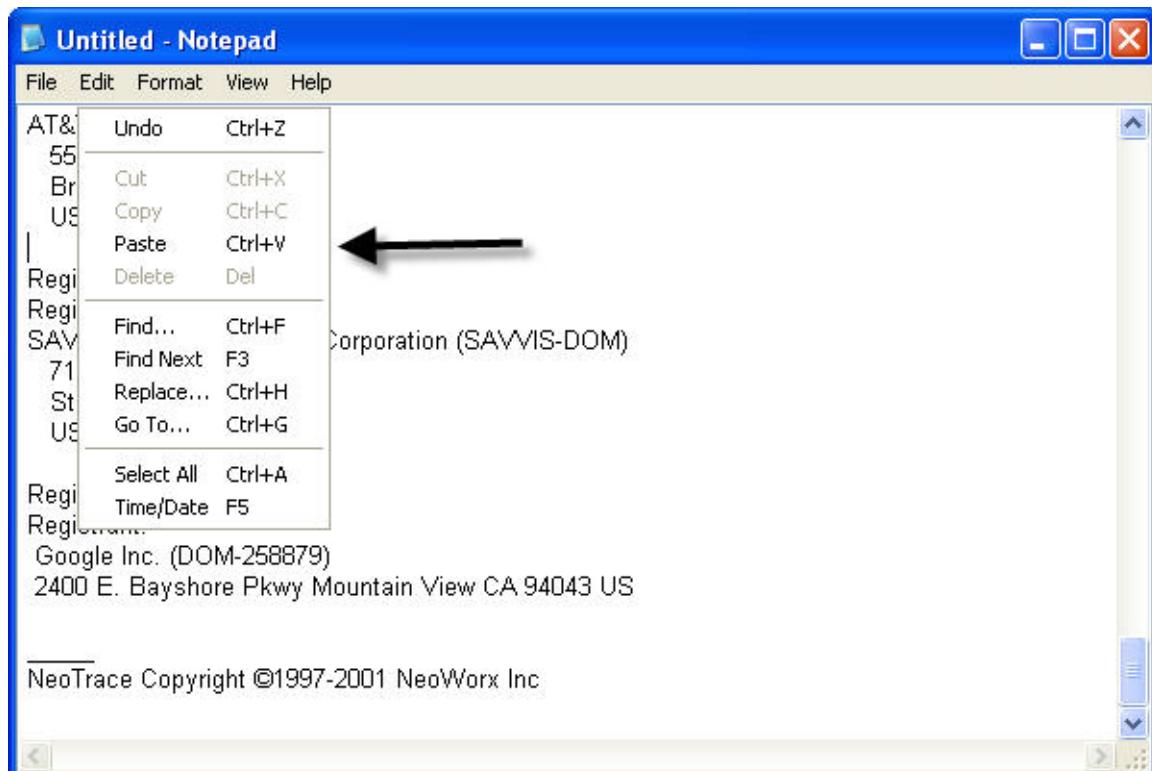
Open Notepad.

"Start > Run" Type in "notepad" and click ok.



### Step 3:

Paste the contents of the clipboard into notepad.  
“Edit > Paste”



## **Analysis:**

- 1) If you are a network administrator, how would you utilize this application?
- 2) After working with this application, what is the advantage to knowing the path that a data packet takes from a source to a destination?

## **Summary Discussion**

A classroom discussion should follow the lab. Review the lab questions and your analyses as a group. Share your experiences and knowledge with the class.

## **If You Want To Learn More**

Research software products that offer similar functionality as NeoTrace. Experiment with “tracert” in windows and “traceroute” in UNIX for a command line version of the NeoTrace functionality.

## **Appendix:**

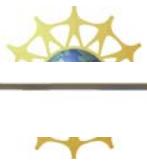
This lab was developed using NeoTrace Professional Version 3.25 – Trial, which can be obtained from:

<http://www.download.com>

Search for Neotrace in Windows.

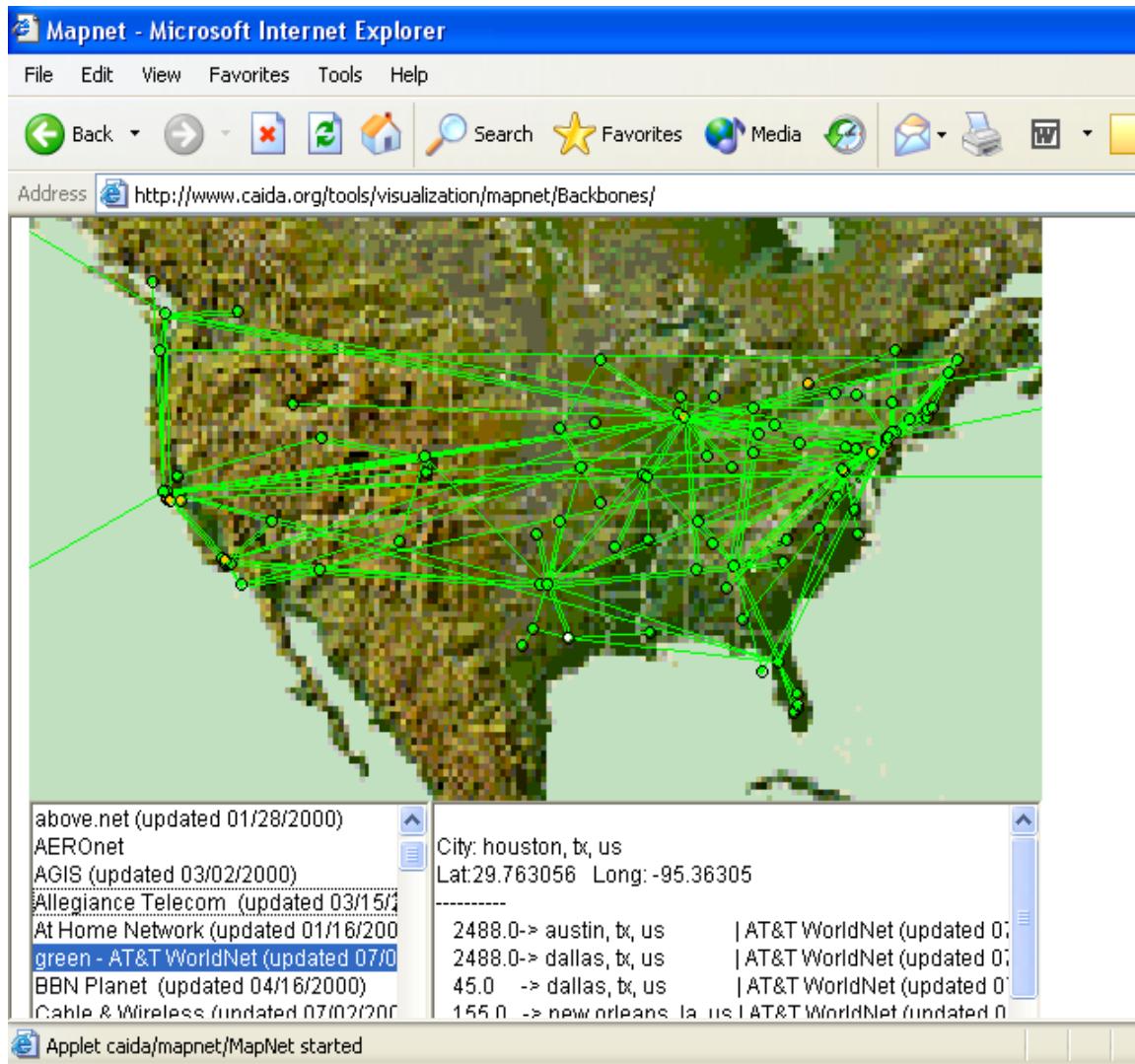
(As of this writing, neotrace was a product of Neoworx, Inc., which was owned by McAfee Systems).

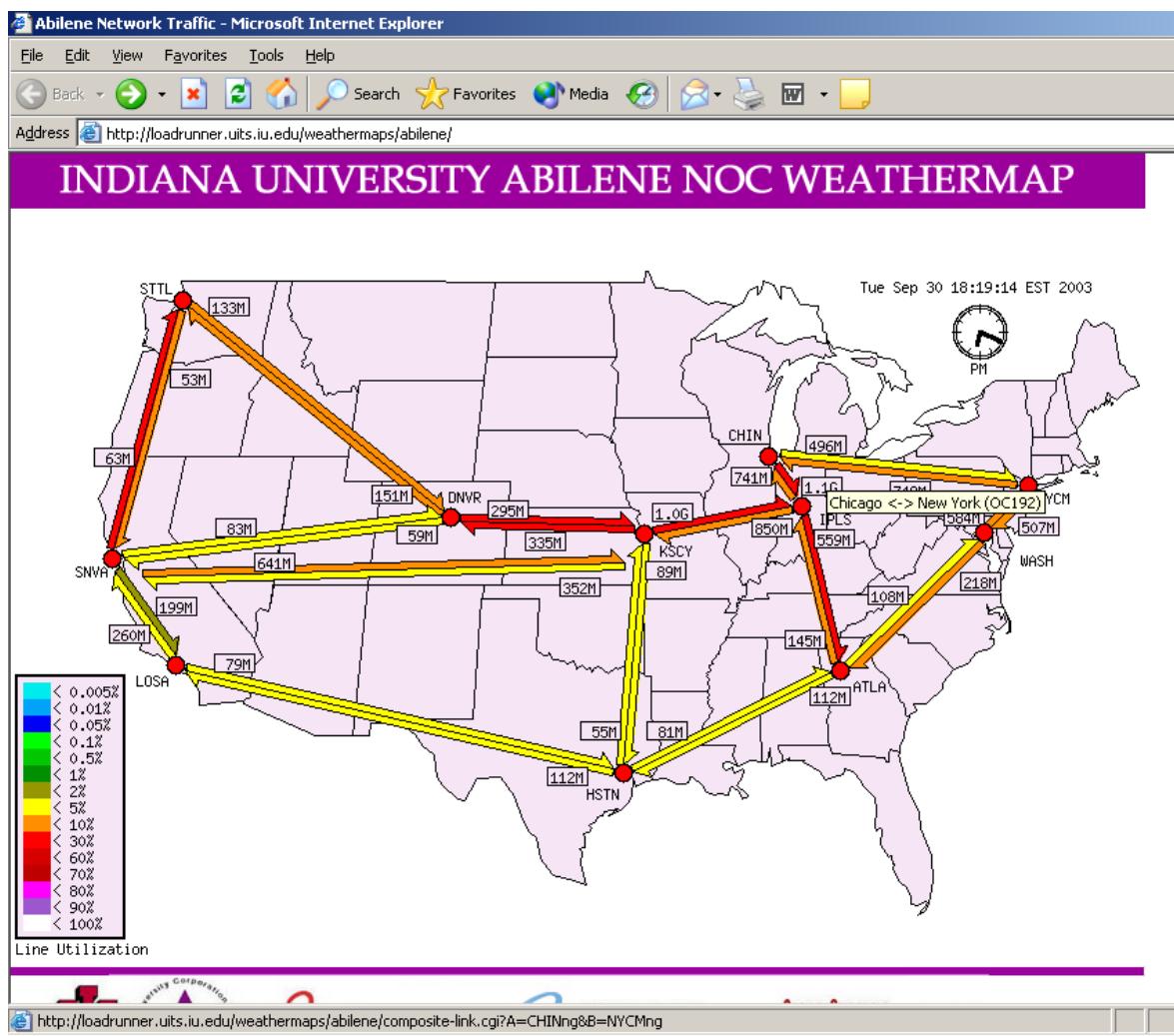
The OS environment for this lab was Windows XP Professional, Version 2002, Service Pack 2 (8/04).



## Related Web sites of interest

<http://www.caida.org/tools/visualization/mapnet/Backbones/>  
<http://loadrunner.uits.iu.edu/weathermaps/abilene/>





Current Status of CHINng-NYCMng Abilene Link - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites Media Mail Print Word Excel

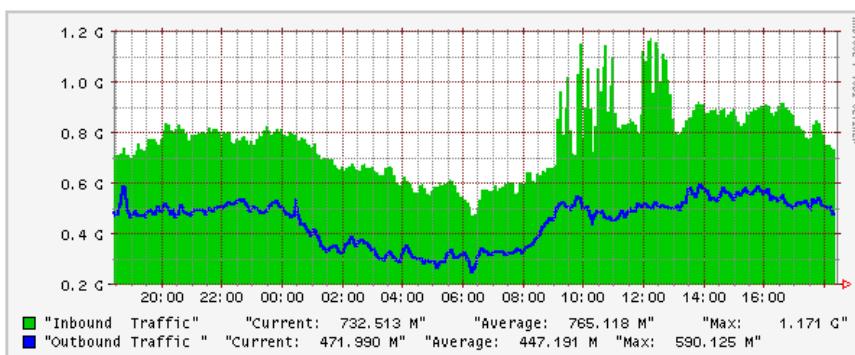
Address http://loadrunner.uits.iu.edu/weathermaps/abilene/composite-link.cgi?A=CHINng&B=NYCMng

## Current status of CHINng-NYCMng Abilene Link (as of Tue Sep 30 18:24:17 2003)

### Traffic as seen from CHINng

The green area is a five minute average of **input** bits per second.

The blue line is a five minute average of **output** bits per second.



[See full historical data](#)

### Traffic as seen from NYCMng

Current Status of CHINng-NYCMng Abilene Link - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites Media Mail Print Word Excel

Address http://loadrunner.uits.iu.edu/weathermaps/abilene/composite-link.cgi?A=CHINng&B=NYCMng

