NetTach Help
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What Is NetTach?

NetTach is a program that tests a computer-to-computer network connection and tells you if the connection is capable of supporting H.323 videoconferencing.

NetTach does this by sending and receiving data packets between two personal computers. The data packets are sized and transmitted with a frequency similar to the traffic generated by videoconferencing endpoints such as PictureTel LiveLAN, Microsoft NetMeeting, and PictureTel Venue/VIU.

NetTach is designed to be used by anyone, no matter what their level of network experience. To use the advanced features as effectively as possible, though, it’s helpful to understand basic network terms and concepts.

How Does NetTach Work?

NetTach runs simultaneously on two computers. One computer runs NetTach in sender mode, transmitting packets of data to the second computer. The second computer runs NetTach in receiver mode, gathering information about the packets received, then looping them back to the sender.

When the test cycle ends, NetTach displays the information on a variety of screens, allowing you to choose the level of detail and format you wish to view.

What Else Can You Do With NetTach?

Beyond performing a simple test of a computer-to-computer data transmission, you can use NetTach to:

Display test results a variety of ways - NetTach displays basic test results on the Summary screen, but it also provides more advanced test results through the Statistics View screen and the Jitter View screen.

Test a connection over time - For more in-depth network analysis, NetTach can collect data over a 24-hour (or longer) period. It writes this data into a log file that can be imported by a spreadsheet program to help analyze the data. See Creating Log Files and Importing Log Files into Excel.

Determine a connection’s bandwidth threshold - You can run a test to find the maximum amount of bandwidth a network connection can support. See Determining a Connection’s Bandwidth Threshold.

Manually configure your own tests - If you’re a network expert, you can adjust a wide variety of parameters to set up your own tests. See Using the Network Options Dialog Box.
To Install NetTach

You must install NetTach on both the receiving and the sending computers. You can install NetTach on many receivers and many senders - as many computers as you would like to test. It is best to install NetTach on the computer you intend to use as your NetTach receiver first.

System Requirements: To install and run NetTach, both the receiving and the sending computer must have a 32-bit operating system (either Windows 95 or Windows NT 4.0 Server or Workstation) and support for the TCP/IP protocol.

1. Copy the NetTach files from the NetConference CD-ROM to an appropriate location on the computer you intend to use as your NetTach receiver.
2. Double click setup.exe.
   The InstallShield wizard automatically installs NetTach. Answer the questions according to what is appropriate for your environment, specifying this system as the Receiver.
3. Go to the computer you intend to use as your NetTach sender and copy the NetTach files from the NetConference CD-ROM to an appropriate location on the computer.
4. Double click setup.exe.
   The InstallShield wizard automatically installs NetTach. Answer the questions according to what is appropriate for your environment, specifying this system as the Sender.

Note that to run a NetTach test, you must start NetTach on the receiving computer first.

Running NetTach Tests

There are several ways you can run NetTach tests:

Using the NetTach Configuration Wizard: This easy-to-follow wizard lets you configure and run a simple test in just seconds. The wizard is the best choice for first-time NetTach users.

Using the Network Options Dialog Box: This dialog box lets you select a variety of test parameters for performing more detailed tests.

Using QuickStart!: Once you’ve selected and saved your testing options, you can select QuickStart! to immediately run the test.

Using Advanced NetTach Options: This section describes more advanced ways you can test with NetTach.

Note that you must start NetTach on the receiving computer first!
To Run a Test Using the NetTach Configuration Wizard

The NetTach Configuration Wizard helps you configure NetTach to run a simple test quickly and easily. First-time NetTach users should use the Configuration Wizard to become familiar with NetTach. The Wizard screens provide information to help you make the choices appropriate for your environment.

1. Click the Wizard icon.
2. Answer the questions on each Wizard screen or accept the defaults by clicking Next.

The Wizard begins running the test automatically. Watch the status bar, on the bottom of the main NetTach window, for real-time information about the test.

When the test is complete, the Summary screen appears.

To Run a Test Using the Network Options Dialog Box

1. Click the Network Options icon.
2. On the General tab, click the application or data rate you wish to simulate.
3. Select Sender or Receiver mode.
4. If you selected Sender, enter either the remote host name or the IP address under Remote Host.
5. Click the Admin tab.
6. Change or accept the defaults for the Jitter Limits, Packet Loss, and Iterations.
7. Check the desired options under Program Control.
8. Click the Advanced tab.
9. Select the TCP/IP connection type.
10. Specify a Port Number.
11. Type in the Packet Parameters, Packet Rate, and Timeout.
12. Check AutoScan only if you want to determine a connection’s bandwidth threshold.
13. Click Start.

The Advanced tab options must match on the sending and the receiving computers.

To Run a Test Using QuickStart!

1. Click QuickStart! on the NetTach main screen.
2. Click **Sender** or **Receiver**.

3. If you selected **Sender**, type the name or the IP address of the receiver in the **Remote Host** field.

4. Click **Start**.

QuickStart! runs a NetTach test using the default settings for PictureTel LiveLAN.

**Using Advanced NetTach Options**

You can perform the following advanced options using NetTach:

- Testing a Connection Over Time
- Creating Log Files
- Importing Log Files into Excel
- Determining a Connection’s Bandwidth Threshold

**To Test a Connection Over Time**

You can evaluate how a network connection behaves over time by running NetTach continuously for a day or longer. The resulting information is automatically captured in log files. You can import the log file data into Microsoft Excel, or another spreadsheet application. This information illustrates the bigger picture of overall network performance.

To test a connection over a 24-hour period, change the number of test iterations from 1 to 1040. A log file with the results of the test will be created.

Log files for tests run over a 24-hour (or longer) period contain the same information that is displayed after a short test. Each entry on the log file includes the following information:

- time stamp from the receiving computer
- sending computer’s IP address
- jitter
- transfer rate
- packets lost
- packets out of order
- clock delta [the difference between the clocks on the sender and the receiver]

**To Create a Log File**

1. On the sending computer, click the Network Options icon 🗝️.
2. On the Admin tab, check the Log Results check box or set the number of iterations to 1025 or higher.

3. Click Start.

The resulting log file is named automatically with a date-stamp based on the time the test began. For example, a file named NT07291636.log contains the results of a test on a sender that began on July 29 at 4:36 p.m. (system time).

To Import Log Files into Excel

Most spreadsheet applications will import a NetTach log file directly because they are in a standard ASCII, tab-delimited format. This procedure explains how to import a log file using Microsoft Excel. However, the exact procedure may vary from program to program.

1. In Excel, pull down the File menu and select Open.

2. Select the desired NetTach log file and click Open.

3. Use the Excel Text Import Wizard to import the log file.

   Tip: In general, you may accept the defaults selected on the wizard screens, making sure the Delimited check box is checked.

To Determine a Connection’s Bandwidth Threshold

To determine a network’s bandwidth threshold, check the Auto Scan check box on the Network Options Advanced tab, then start the test. The packets are sent with incrementing bandwidth until the packet loss exceeds the packet loss limitation set on the Network Options Admin tab. At that point, the test stops and the resulting test data illustrates the highest bandwidth the test attained.

Displaying NetTach Results

NetTach displays test results on three screens - the Summary screen, the Statistics View screen, and the Jitter View screen.

   Displaying the Summary Screen

   Displaying the Statistics View screen

   Displaying the Jitter View screen
To Display the Summary Screen

- Click the Summary screen icon at the completion of any test.

The Summary screen assigns a red, green, or yellow light based on the packet loss, out of order packets, and jitter information generated during the test.

If you check the Show Summary check box on the Network Options Admin tab, the Summary screen displays automatically at the completion of a test.

To Display the Statistics View Screen

- Click the Statistics icon at the completion of any test.

This screen displays all four types of test data (packet loss, out of order packets, jitter, and transfer rate) in a statistical report.

To Display the Jitter View Screen

- Click the Jitter icon at the completion of any test.

This screen displays a variety of details about the last test’s jitter.

packet loss

The number or percentage of data packets that don’t arrive at their destination.

out of order packets

The number or percentage of data packets that arrive at their destination out of sequence. Also called “out of sequence packets”.

jitter

The number of data packets that arrive at their destination early or late - in other words, not at their predicted arrival time.

transfer rate

When you see transfer rate on the Summary screen or in a log file, it refers to the actual number of kilobits per second that the data packets were able to achieve during that test.
The Status Bar

Status of NetTach - Idle (test is not running) or Active (test is running).
Transfer rate you are trying to achieve during this test.
Percentage indicator. Shows how much of the transmission (one-way) is complete.

Status of the test (Transmit or Receive).

The Jitter View Screen

Graph showing jitter detail. You can scroll this graph to view entire range.
This line illustrates the average level of jitter.

This area displays each packet’s characteristics.
The Statistics View Screen

Graph showing quality of packet order and loss, and jitter (high, medium, low).

Detailed statistics about packets on each loop.

The Network Options Dialog Box (General Tab)

Brings you to the Admin or Advanced tab.

Specify your PC as a sender or receiver.

Name or IP address of the remote computer you are testing with.

Starts running the NetTach test.

Specify a videoconferencing application's data rate to simulate.

Saves the settings chosen on this screen but does not begin the test.
The Network Options Dialog Box (Admin Tab)

- Specify the maximum percentage of lost packets acceptable for this connection.
- Stores test data in one or more log files.
- Stops testing when NetTach encounters an error.
- Displays the Summary screen automatically when the test is complete.
- Start button for running the NetTach test.
- Number of times the test runs (usually one). To test over a 24-hour period, set this to 1040.
- Specifies what is considered a low or high jitter rate for each test. Jitter limits may differ among videoconferencing applications. Limits specified here are reflected on the Jitter and Statistics Views.
- Brings you to the General or Advanced tab.
- Starts running the NetTach test when you exit this screen (unless you click Cancel).
The Network Options Dialog Box (Advanced Tab)

- **Brings you to the General or Admin tab.**
- **Port number of the system you are testing with.** Accepts 1024 through 4096.
- **Define the number of packets and their size in bytes.**
- **Tests for maximum bandwidth allowed for this connection.**
- **How long the receiver waits for a response before stopping the test.**
- **Starts running the NetTach test.**
- **Specify the transfer rate of the packets for this test.**
- **The type of TCP/IP network connection.**

The Summary Screen

- **Green** light indicates a good (acceptable) quality connection. OK to videoconference.
- **Yellow** light indicates a marginal (medium) quality connection. Probably acceptable for most videoconferences. You should retest periodically.
- **Red** light indicates a poor (unacceptable) quality connection. Not suitable for videoconferencing. Inform network administrator of this condition.

- **Summary data from the test.**
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