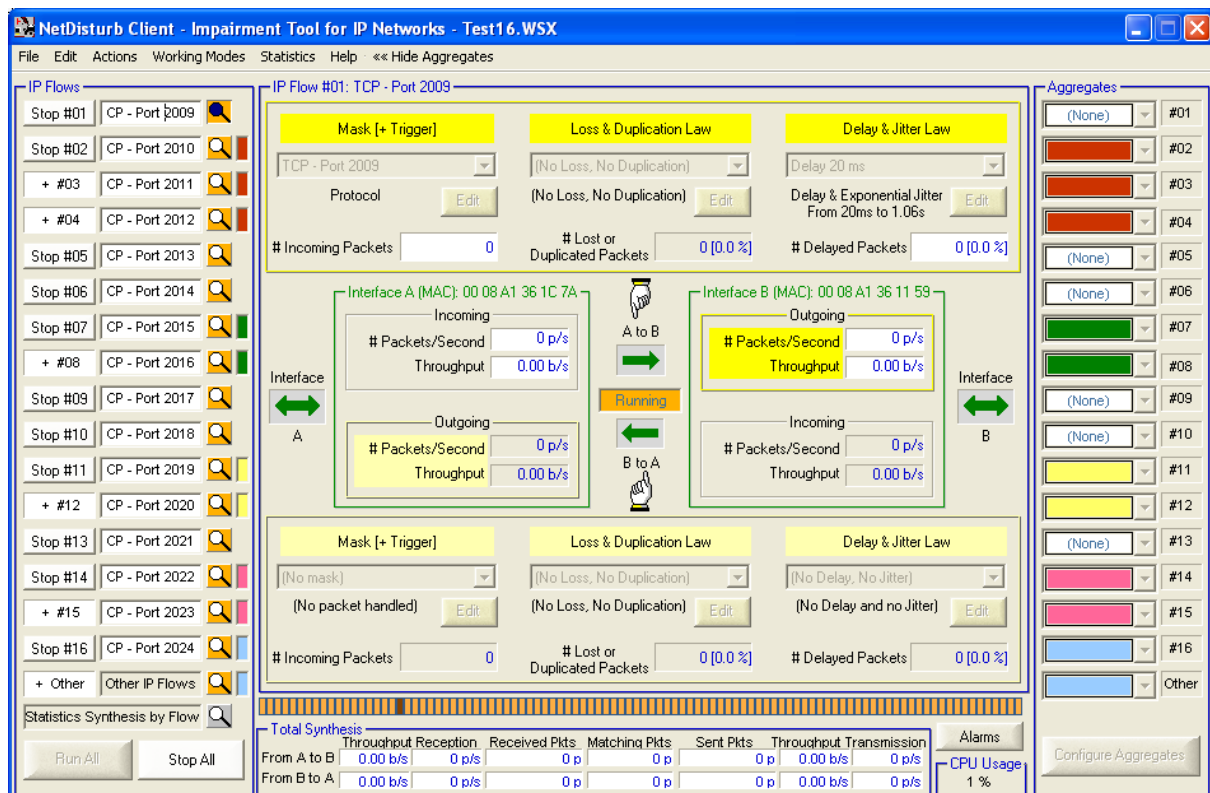




NetDisturb

Version 4.4

Impairment Emulator Software for IP Networks (IPv4 & IPv6)



Read Me First

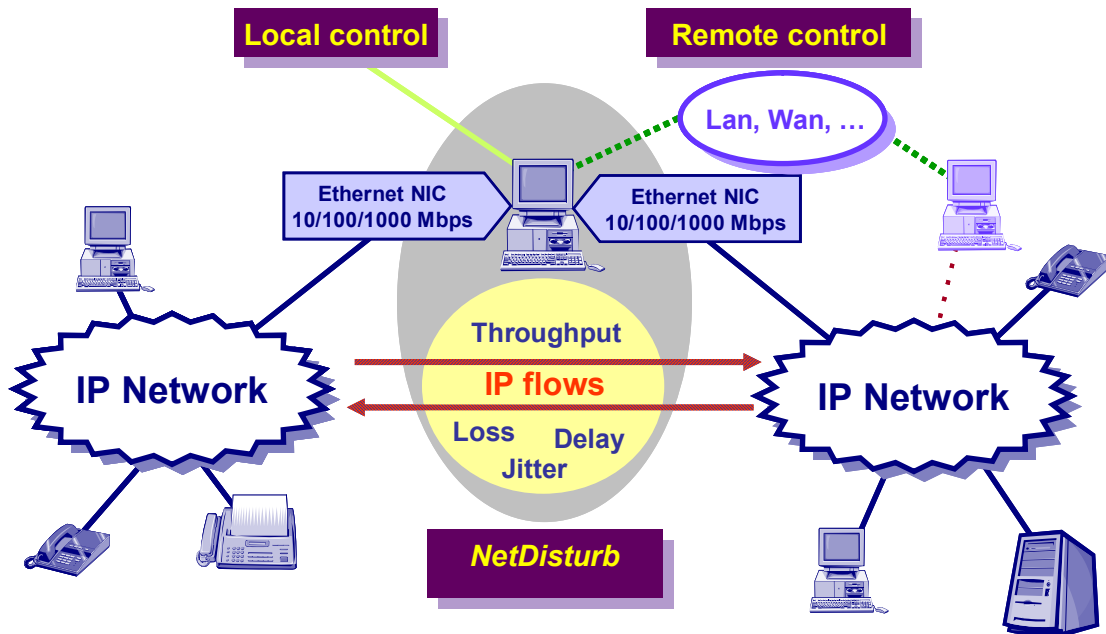
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Part 1 Overview

NetDisturb is an IP network emulator software that can generate impairments (latency, delay, jitter, limited bandwidth, lost packets) over IP networks. NetDisturb allows the user to disturb flows on an IP network and so to study the behavior of applications, devices or services in a disturbed network environment.

NetDisturb is inserted between two Ethernet segments (on the same IP network or two different IP networks) and operates bi-directional packet transfer on Ethernet, Fast Ethernet and Gigabit network interface cards.



Product Requirements

- * Platform: pentium PC running Windows NT4 (SP6), 2000 or XP with Microsoft TCP/IP installed and at least 256 MB Ram.
- * Hyper-threading and PC multiprocessors are also supported.
- * Two Identical Network Interfaces Cards (NIC): Ethernet, Fast Ethernet, or Gigabit Ethernet network interface card.
- * 1024 x 768 display and DPI setting = Normal size (96 DPI).

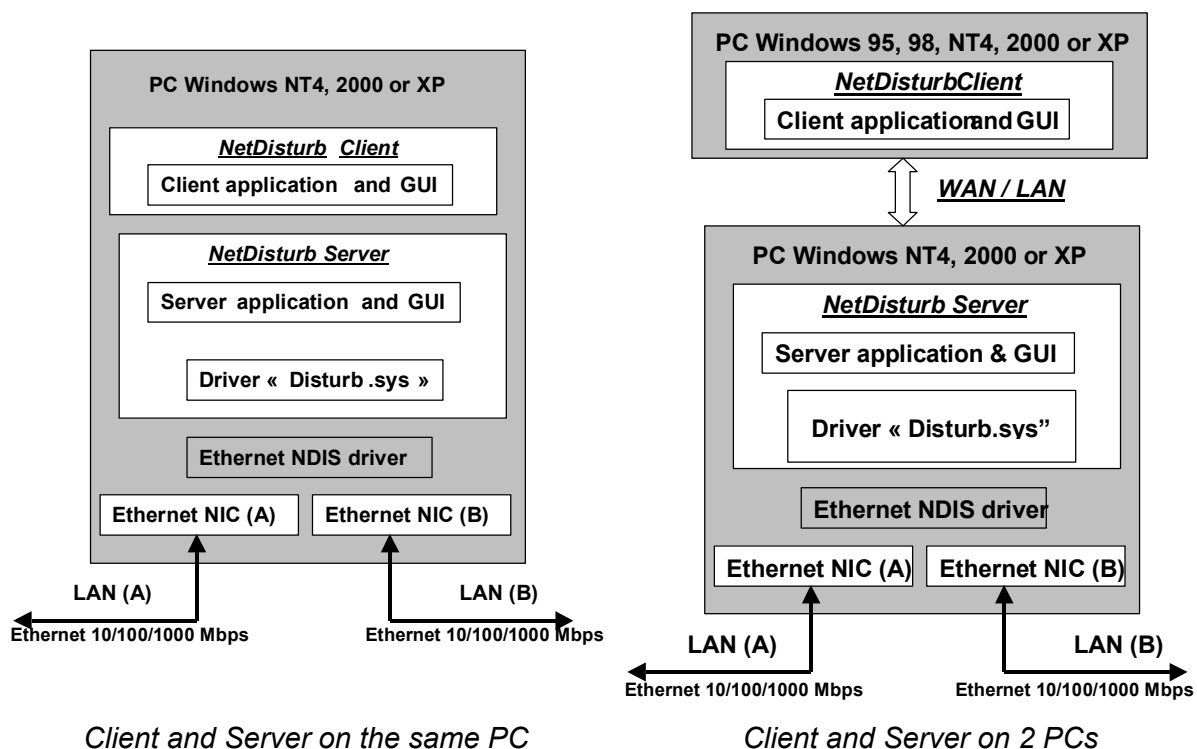


Configurations

Based on a Client-Server architecture, NetDisturb is made up of two parts (or program), the NetDisturb Server part and the NetDisturb Client part, where NetDisturb Server handles the impairment characteristics and NetDisturb Client manages NetDisturb Server using an easy-to-use graphical interface.

This allows two configurations where NetDisturb Server and NetDisturb Client parts may be installed on the same PC host (local control) or NetDisturb Server part is located on one PC and NetDisturb Client part is located on another PC (remote control). In this second configuration, NetDisturb Client dialogs with NetDisturb Server by using a WAN link (for example: PSTN or ISDN) or LAN link, via the RPC interface.

Both configurations require two identical Ethernet Cards for NetDisturb Server.



The Disturb.sys file - NetDisturb Driver - sets in the kernel of the operating system. It is installed with NetDisturb Server above the NIC drivers. This kernel driver is in charge to handle the exchanges with the NICs.

Part 2 Install and Uninstall NetDisturb

NetDisturb is supported on the following platforms: Windows XP Home or Professional, Windows 2000 Professional or Server, Windows NT 4 Service Pack 6 Workstation or Server.

The minimum screen resolution is 1024 x 768 and the DPI setting should be “Normal size (96 DPI)”.

If you have the **NetDisturb** CD-ROM version, please refer directly to paragraph 2.2.



*** To run NetDisturb your computer's screen resolution must be at least 1024 X 768 and the DPI setting should be set up with the “Normal size (96 DPI)” value.**

*** To install NetDisturb for Windows NT4, 2000 and XP, you must log on with your administrators rights.**

The default settings of **NetDisturb** come with a 15-day limited license. When it reaches the deadline, **NetDisturb** stops running. Go to Part 4 for more information about the license program.

2.1 How to install the software downloaded from the Internet

The installation procedure is a standard installation program.

*Please note that the **NetDisturb** installation procedure will be different in the last part, depending on the target Operating System: Windows NT4 or Windows 2000 and Windows XP.*

- Before to proceed with the **NetDisturb** Setup, please be sure your system does meet the following minimum requirements:
 - ⇒ OS supported: Windows NT4 (SP6 at least), Windows 2000 or XP.
 - ⇒ Minimum screen resolution: 1024 x 768
 - ⇒ Your PC needs at least 2 NIC already installed, configured and fully operational.
- If you have downloaded the software from our website, you have downloaded the file **NetDisturb.zip** containing the **Setup_NetDisturb.exe** file and the related documentation.
You must first unzip this file in a temporary directory.

NetDisturb is composed of two parts: **NetDisturb** Client and **NetDisturb** Server.
This setup will install both the Client and Server parts on the same system.

- Then run “**Setup_NetDisturb.exe**” from this temporary directory to launch the setup procedure and follow instructions on the screen.

The default settings install **NetDisturb** in the following directory:

C:\Program Files**NetDisturb** with the following subdirectories:

C:\Program Files**NetDisturb**

C:\Program Files**NetDisturb** \Client

C:\Program Files**NetDisturb** \Driver

C:\Program Files**NetDisturb** \Server

C:\Program Files**NetDisturb** \Server\Script

At the end of setup, a manual driver installation is required if Windows NT4 is used. In that case, please refer to paragraph 2.1.2.

Otherwise, the only necessary operation is to uncheck protocols from NICs used with **NetDisturb**.

2.1.1 NetDisturb Driver Installation for Windows 2000 or XP

The **NetDisturb** driver sets in the kernel of Windows 2000 or XP. The **NetDisturb** driver is installed on the top of the driver for each Network Interface Card (NIC) installed in your PC. For Windows 2000 or XP, the **NetDisturb** driver is considered as a protocol. The **NetDisturb** driver handles the exchanges between two NICs.

The setup procedure realizes the installation of the **NetDisturb** driver transparently. The **NetDisturb** driver is mapped on top of each Ethernet or wireless NIC if the driver of the NIC is NDIS compatible.

The **NetDisturb** driver linked to the selected NICs remains available transparently: it doesn't appear in the protocol list.

There is still an important manual operation you have to do before using NetDisturb:

1. In order to avoid unexpected traffic generated by the protocol stack (TCP/IP, Client or Microsoft Networks, etc.) on the NICs that **NetDisturb** will use, you have first to unselect all protocols.
2. To unselect protocols from a NIC used by **NetDisturb**, use the "Control Panel/Network and Dial-up Connections" or the "Control Panel/Network Connections" program and uncheck all protocols.

2.1.2 NetDisturb Driver Installation for Windows NT4

At the end of the setup, after the files have been copied to the system:

- A text file is automatically opened to explain the next step: installation of the **NetDisturb** driver on the system
- The control panel is automatically opened in order to proceed with the driver installation.

The **NetDisturb** driver sets in the kernel of Windows NT. This driver must be installed over the driver of network cards. For Windows NT, it is considered as a protocol. The **NetDisturb** driver goal is to handle exchanges between two networks interface cards (NIC).

The **NetDisturb** driver is a protocol named '**Disturbing Ethernet Driver over NDIS**'.

The **NetDisturb** driver installation is carried out as any usual network driver installation. It must be installed after the network cards drivers. Different protocols can be bound to your NIC. The **NetDisturb** Client and **NetDisturb** Server need a TCP protocol stack for data exchange. So before installation, check that your Windows NT4 computer gets 2 NIC installed and a TCP stack installed.

To install the **NetDisturb** driver, you have to use the Windows control panel and select the following items:

1. Choose "Network" icon,
2. Choose "Protocols" tab,
3. Click on "Add"
4. Choose "Have Disk..."
5. Type the folder where following files are located: OEMSETUP.INF and DISTURB.SYS (by default: C:\Program Files\NetDisturb\Driver) and press 'OK'
6. Then select the "Disturbing Ethernet Driver over NDIS " and click on "OK"
7. The item 'Disturbing Ethernet Driver over NDIS' appears in the protocol list of 'Protocols' tab
8. Disable the other protocols bound to the network adapters as follows:
 - * Choose "**Bindings**" tab,
 - * In the list box select "**show bindings for all adapters**",
 - * Disable all protocols bound to each Network adapter used by **NetDisturb** except: "**Disturbing Ethernet Driver over NDIS**" (you need to do it for the 2 used network adapters)
 - * Disable "**Disturbing Ethernet Driver over NDIS**" for all other adapters
9. As a TCP stack is required for the **NetDisturb** Client and Server exchanges, you must bind the TCP protocol to another one adapter - for example to a modem or another adapter.

This is an example to add a TCP/IP stack onto a modem, which is not necessarily physically connected to your PC. The procedure is as follows:

- a) Add a modem via Control Panel / Modem, select "**add**", then "**don't detect my modem, I will select it from a list**" and click on "**Next**"
- b) Select any standard modem from the Standard Modem Types manufacturer list (for example Standard 14400 bps modem). Click on "Next"
- c) Select a port and click on "Next "
- d) Windows NT should present you a dialog box indicating the end of modem installation

When you have finished using the control panel, press **Close** to save all changes.

Your system is now configured and **you need to reboot your PC** to take changes into account.

2.1.3 Start Menu Shortcuts Created

Start > All Programs > **NetDisturb**

⇒ **1) NetDisturb Server**

⇒ **2) NetDisturb Client**

⇒ **License help**

⇒ **Uninstall NetDisturb**

⇒ **User Guide**

When launching a **NetDisturb** trial version for the first time, a message is displayed showing the remaining days of use (for example, 15 days left out of 15 in the following example):



To enter your unlimited license,

please refer to Part 4 (Software License Configuration)

2.2 How to install the software from the CD-ROM

The installation procedure is a standard installation program. On the CD-ROM, you will find the "[Setup_NetDisturb.exe](#)" file.

This setup will install the [NetDisturb](#) Client and the [NetDisturb](#) Server on the same machine.

Run this setup and follow the instructions as described in the previous paragraph.

On the CD-ROM, a second setup allows installing the [NetDisturb](#) Client on a machine. This is useful if you want to install the [NetDisturb](#) Server and the [NetDisturb](#) Client on two different machines.

To install the [NetDisturb](#) Client on a machine (Windows 95, 98, NT4, 2000 or XP), run "[Setup_NetDisturbClient.exe](#)" and follow the setup instructions to proceed with the installation.

Part 3 Uninstall NetDisturb

The uninstall procedure is a standard uninstall program.

To uninstall **NetDisturb** select "Uninstall NetDisturb" in the "Start > Programs > NetDisturb" menu.

How to uninstall the **NetDisturb** driver:

⇒ Windows 2000 or XP

All software components installed by the installation procedure are removed during the uninstall procedure including the **NetDisturb** driver.

⇒ Windows NT4

In Windows NT4, the Disturb driver is not removed by the un-installation procedure because it has not been added by the installation procedure.

At the end of the uninstall Procedure, a text file is automatically opened in order to explain how to uninstall the **NetDisturb** driver when you are using Windows NT4.

By using the Control Panel, run "Network" and then choose the "Protocols" tab. Select the driver "Disturbing Ethernet Driver over NDIS" and click on "Remove".

Then, you must restart your PC.

Part 4 License Configuration

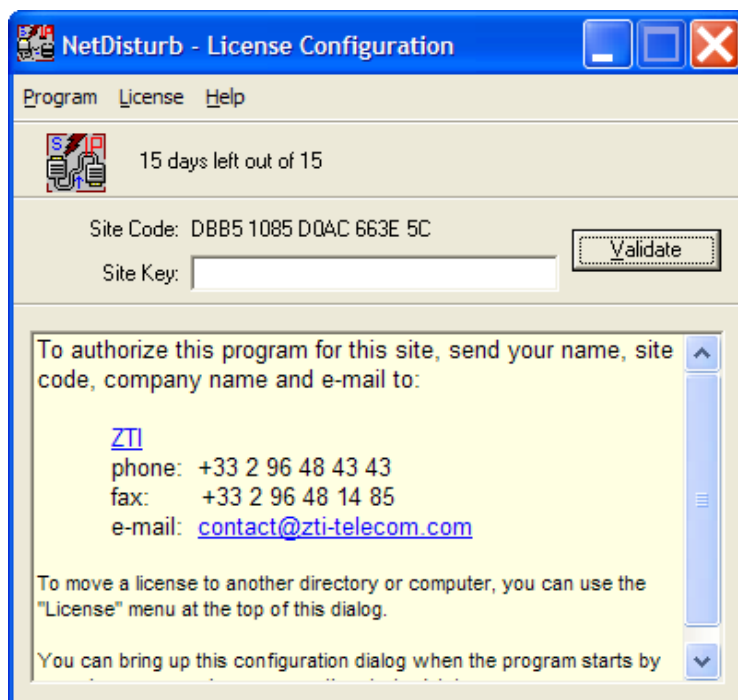
*Note: This software is licensed on a per workstation basis. This means that you will need to get a separate license for each machine that you'll install it on. Each licensed copy of the software installed on a system has a unique **Site Code** which requires a corresponding unique **Site Key** to be entered before the tool is operational (except for a trial version: a duration of 15 days is automatically enabled at the first installation of the software. If you try to install the software again, the license program will disable the trial period).*

4.1 How to configure a license

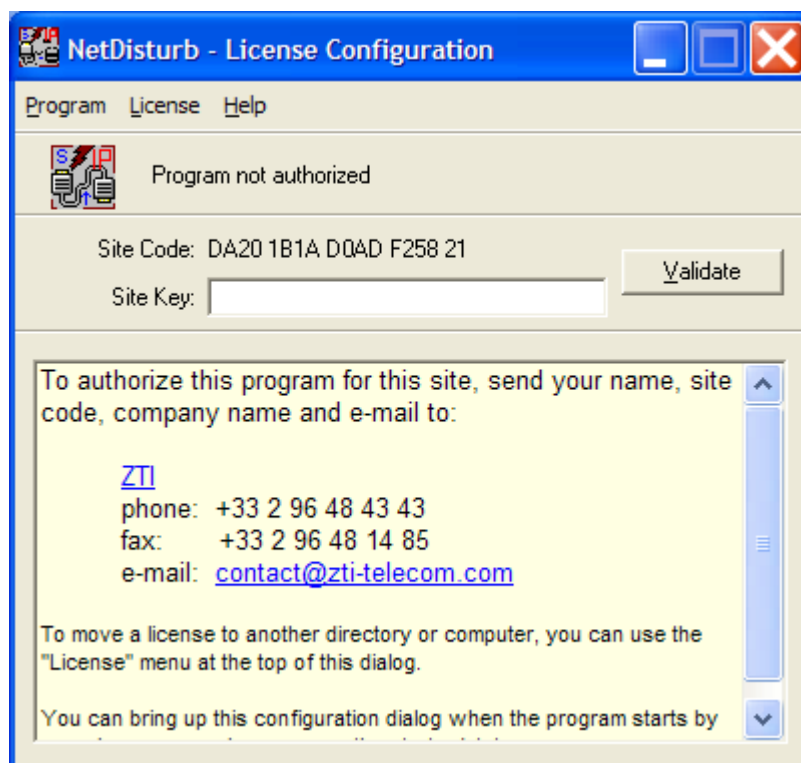
If you wish to configure your license before the trial period ends, press **Enter** just after launching the **NetDisturb** Server when the following message is displayed:



You will then see the following license configuration window:



At the end of the trial period when you launch **NetDisturb** Server, the same license configuration window appears, but saying "Program not authorized" instead of showing the remaining days of use.



To get the **Site Key** and obtain an unlimited version, please send an email to contact@zti-telecom.com or contact@zti.fr with the following information:

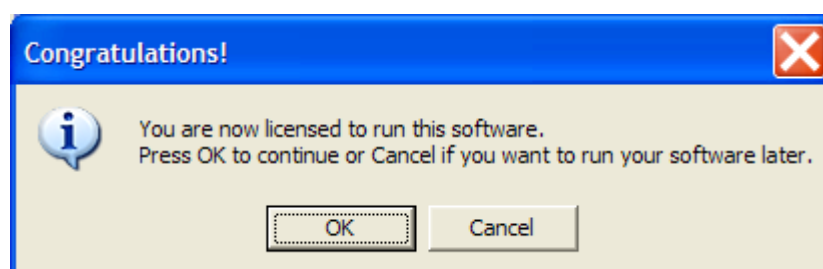
- The **Site Code** (you can copy and paste the Site Code displayed in the license window)
- The name of the software: **NetDisturb**
- The OS used
- Your company's name
- Your name and phone number
- The purchase order's number and date of purchase

We will then email you the **Site Key**. You can now close the license's window.

After you have received the email with the **Site Key**, open the license configuration window again by pressing the Enter key as explained before.

Copy the Site Key in and then click "Validate".

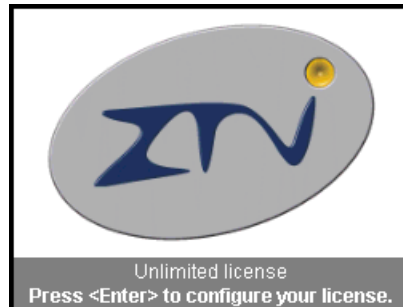
After validation of the Site Key, you will get the following message:



- ⇒ **Important:** one **Site Code** is associated with one **Site Key**, and only one. A **Site Code** is unique for each PC installed. For security reasons, as soon as you validate a **Site Key** (trial or unlimited), the license program generates a new **Site Code** automatically.
- ⇒ For any question or further information, please contact our technical support:
Email: support@zti-telecom.com or support@zti.fr
Phone: +33 2 96 48 43 43
Fax : +33 2 96 48 14 85



When you launch **NetDisturb** Server with an unlimited license, you will see the following window:



4.2 License Transfers



**A license transfer is not a duplication of any type.
Please contact ZTI or your authorized distributor for site license information
and for several licenses purchase.**

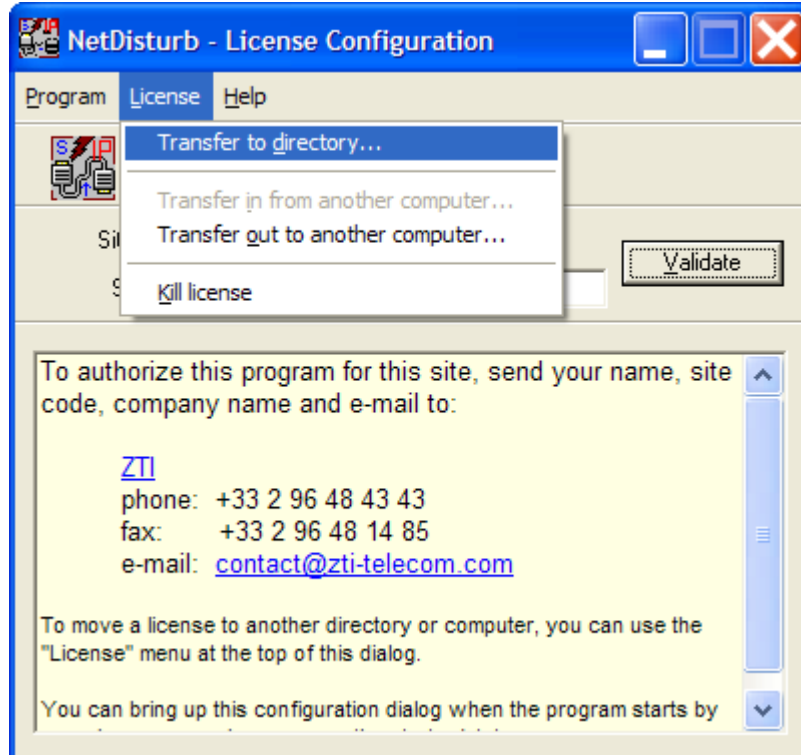
Licenses can be transferred using one of the following methods:

- ⇒ **Direct transfer:** move the license to another directory on the same PC or between two PCs of a same network.
- ⇒ **Transfer by media:** move the license from a source PC to a target PC by using a floppy disk or USB key.

4.2.1 Direct Transfer: move the license from one local directory to another

This transfer mechanism must be used to move a license in two cases:

- From a source to a target directory of the same PC
 - From a source to a target directory of networked PCs
- First, copy the program (copy the **NetDisturb**'s folder) to the target directory.
For example from "C:\Program Files\ NetDisturb" to "C:\Temp\NetDisturb"
 - Then run the program from its original directory (from "C:\Program Files\NetDisturb").
When the license configuration window appears, press **Enter** and select "License > Transfer to directory ..." in the license menu as shown below:



- Provide the path name of the target program (for example *C:\Program Files\NetDisturb\NetDisturbServer.exe*).
The license is now transferred to the new directory.

4.2.2 Transfer by Media (floppy disk or USB key) from a source PC to a target PC



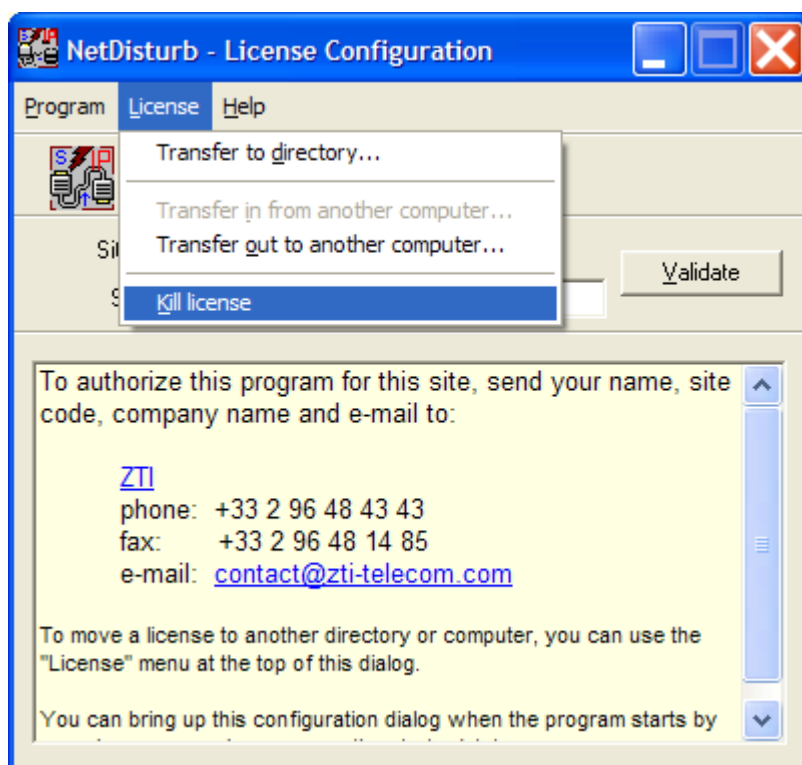
A floppy disk or USB key is needed for this kind of transfer.

To transfer the license from the source PC (PC #1) to the target PC (PC #2), proceed as described in the following order:

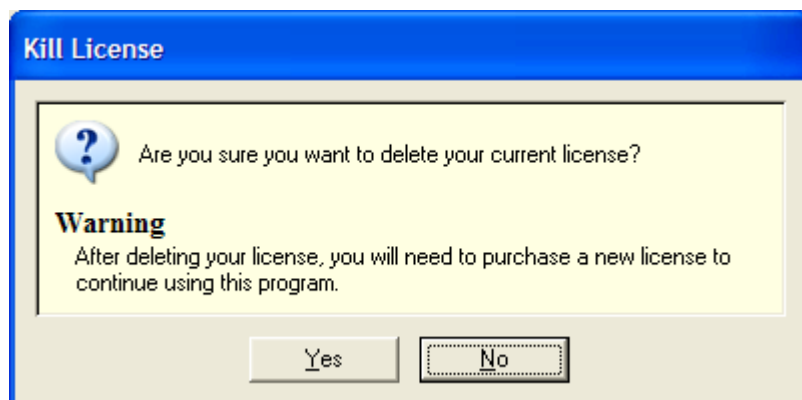
- 1) First install the program on the target PC (PC #2).
- 2) Run the software on PC # 2 and delete the trial license in order to get an unauthorized license on this PC.
If the "Transfer in from another computer ..." item of the license menu is disabled, you must kill the license.

How to kill a license?

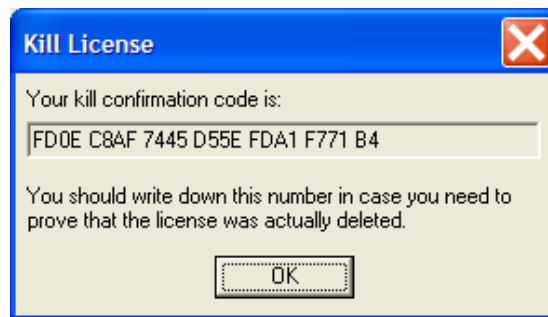
When the license configuration window appears, press **Enter** and select "License > Kill license" in the license menu.



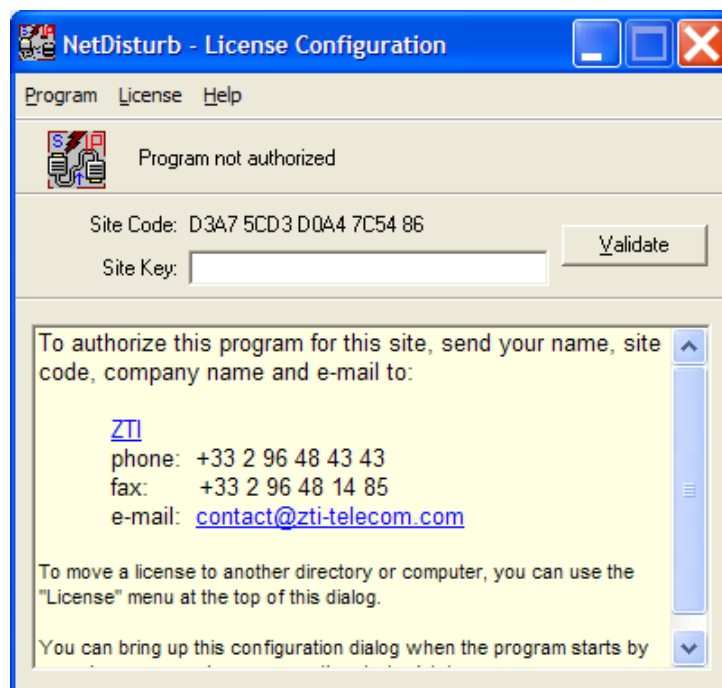
A message box will appear:



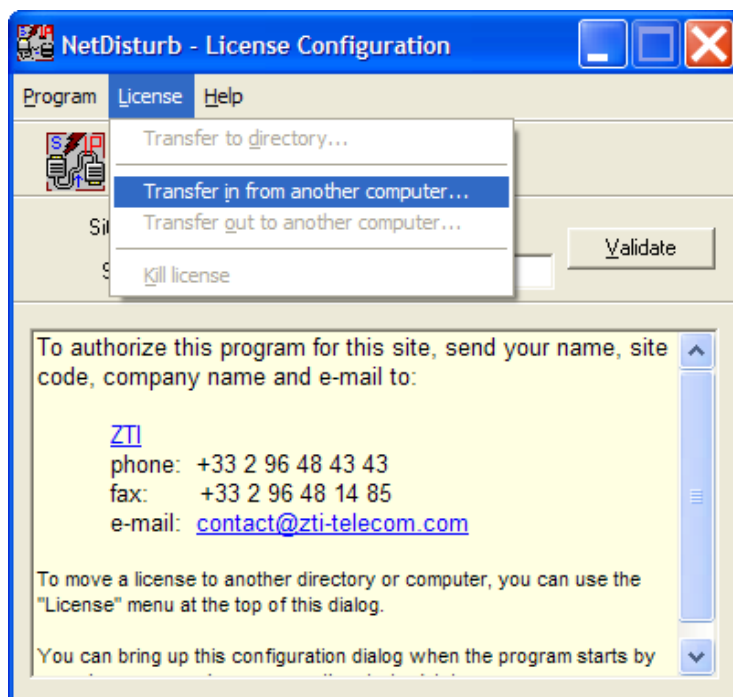
Press 'Yes' to kill the license and a confirmation code is displayed:



Click 'OK' and the license window displays now "Program not authorized":



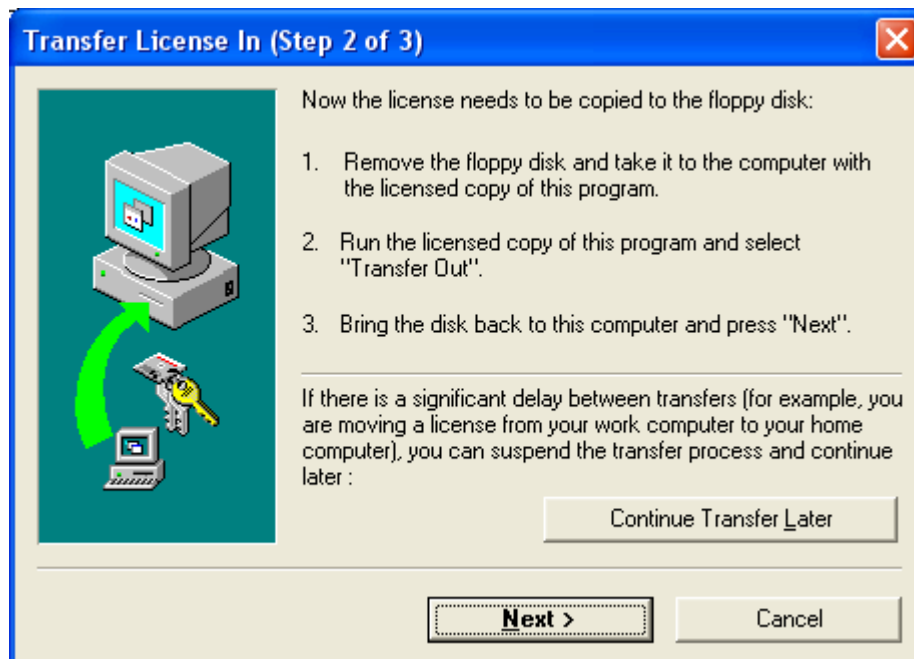
3) Select "License > Transfer in from another computer ..." from in the license menu:



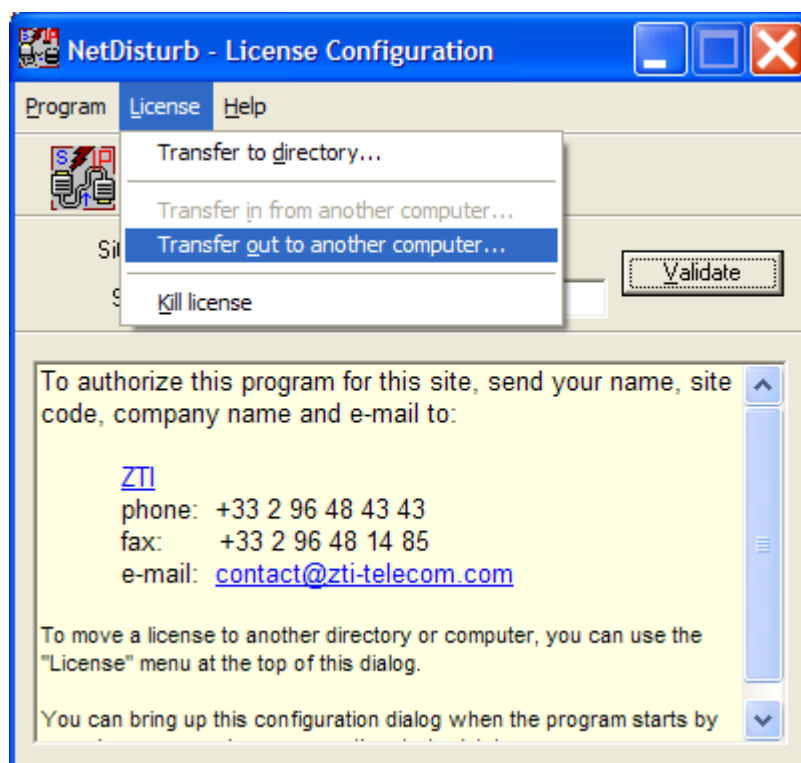
The "Transfer License In (Step 1 of 3)" window is displayed:



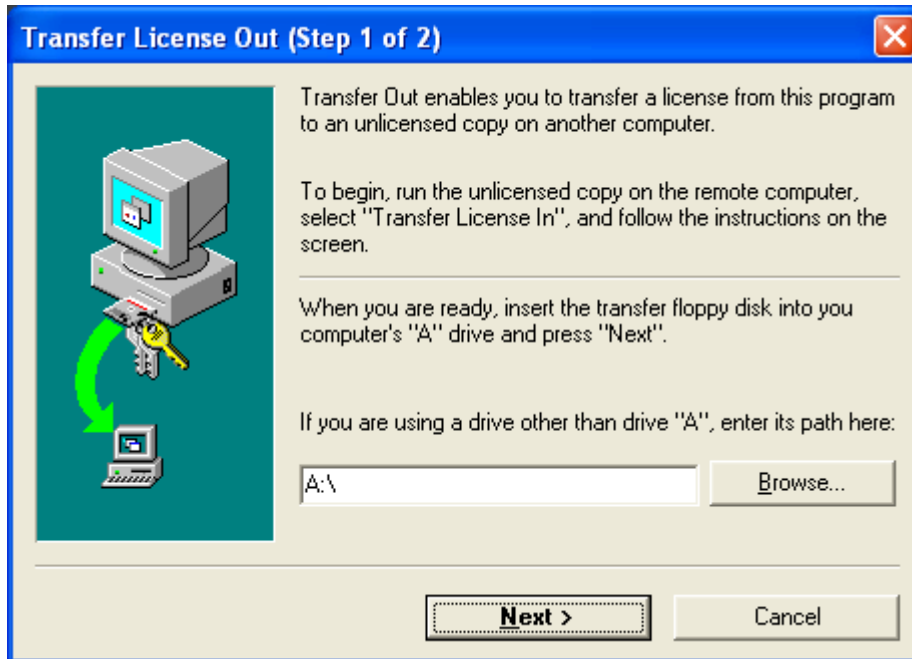
4) Insert a floppy disk or use a USB key as requested in step 1 of 3 and specify the path. Then press "Next >": the "Transfer License In (Step 2 of 3)" window is displayed:



5) Go to the source PC (PC #1) and insert the media (floppy disk or USB key). Then start the program on PC #1. When the license configuration window appears, press **Enter** and select "License > Transfer out to another computer ..." as shown below:

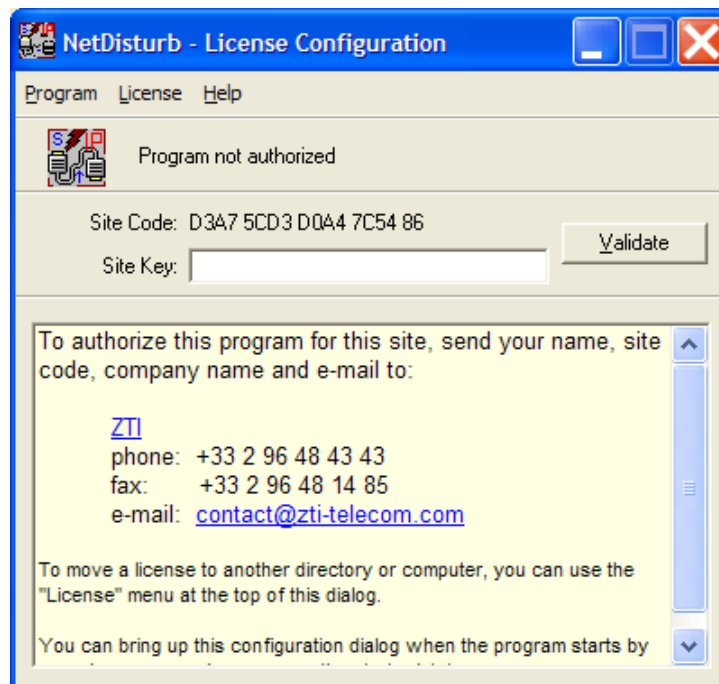


The following window is displayed:



Input the media path (floppy disk or USB key) and then press "Next >".

When the license is put on the media, you get the "Program not authorized" message:



You can check that the license is not available anymore on the source PC since the LanTraffic V2 software license is on a workstation basis.

Contact us to get information on site license (contact@zti.fr or contact@zti-telecom.com).

6) Remove the media from PC #1 and return to PC #2.

Click the 'Next' button on the step 2 of 3 of the "Transfer license in" window (on PC #2) to complete the transfer.

The unlimited license key is now transferred from the source PC to the target PC, and you get the following message:



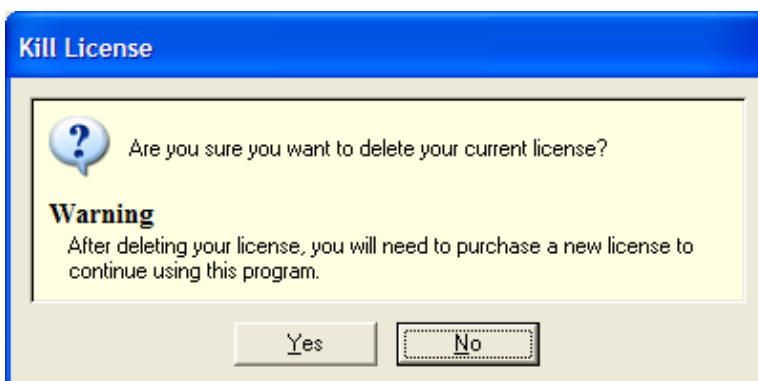
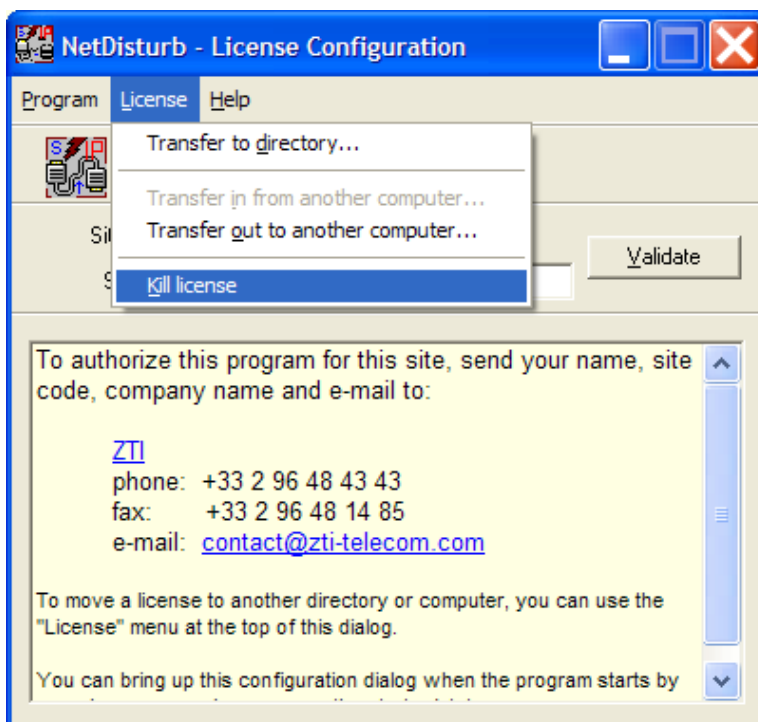
Click Finish to continue.

4.3 How to kill a license

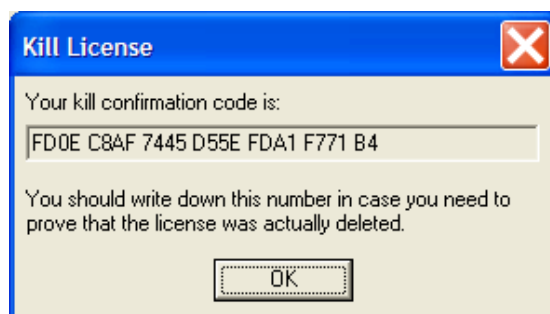
If you would like to transfer an unlimited license key onto a PC where a trial period is still active, you should first delete the active trial period. If you don't delete the active trial period, you will not be able to transfer an unlimited license.

To delete the trial license, you should proceed as follows:

- From the license configuration window, select "License > Kill License" in the license menu as shown below:



- Press 'Yes' and your license is now deleted. Please write down the kill confirmation code. This code may be requested by ZTI.



Part 5 Run NetDisturb

As **NetDisturb** is composed of 2 parts (**NetDisturb** Server and **NetDisturb** Client), you need to run these two programs with the following order:

1. **NetDisturb Server**
2. **NetDisturb Client**

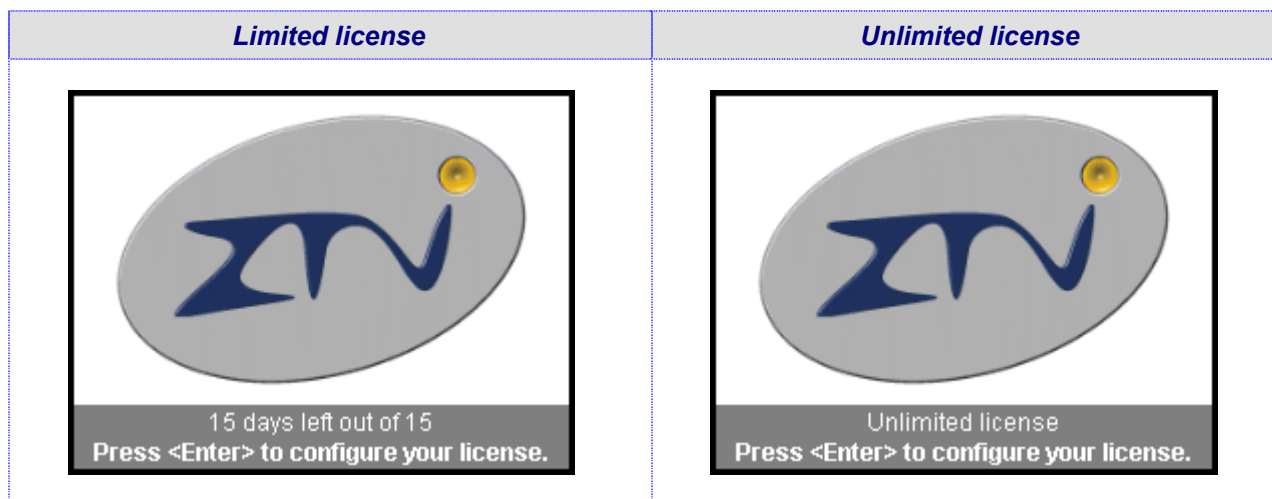
5.1 First Run

1) Run first the NetDisturb Server

Use the Windows start menu:

Start ► Programs ► **NetDisturb** ► 1) **NetDisturb Server**

*After a few seconds and depending of your license,
you will get one of the following license windows:*



Press **Enter** only if you need to configure your license,

If you don't, allow a few seconds for the main window of **NetDisturb** to open.

When you run the **NetDisturb** Server for the first time, the default window is displayed:

NetDisturb Server - Version 4.4

Impairment Interface Configuration and Statistics

Interface A : not selected

Handled Packets:

Lost Packets:

Delayed Packets:

Desequenced:

Fragmented packets:

Incoming on A

Packets per Second

Packets

Throughput

No transmission

Interface B : not selected

Handled Packets:

Lost Packets:

Delayed Packets:

Desequenced:

Fragmented packets:

Incoming on B

Packets per Second

Packets

Throughput

No transmission

Current Parameters

Refresh Period (in second): # Buffers: Interface Mode: Application of Laws:

Sampling to Compute Throughputs: Traces: Desequencing:

Current Client Connection

Client: (No client connected)

Context:

Show Current Trace

Reset Counters

Parameters

Show Context

Reset Trace

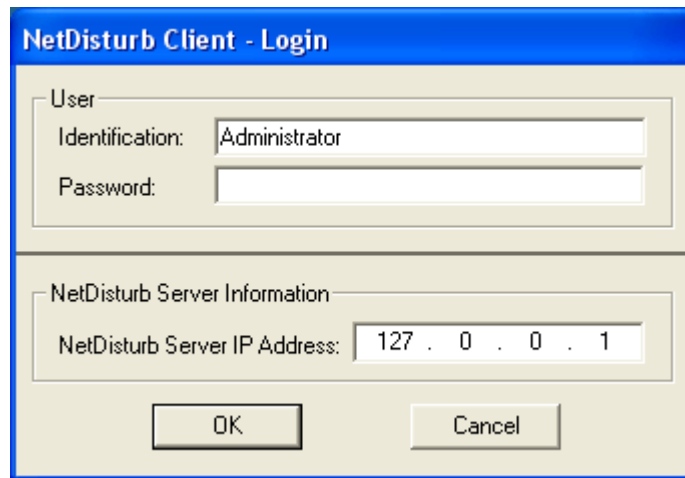
No board (or NIC) has been selected: the **NetDisturb** Client must be used to select the network interfaces (or NICs).

2) Then run the NetDisturb Client

Use the Windows start menu:

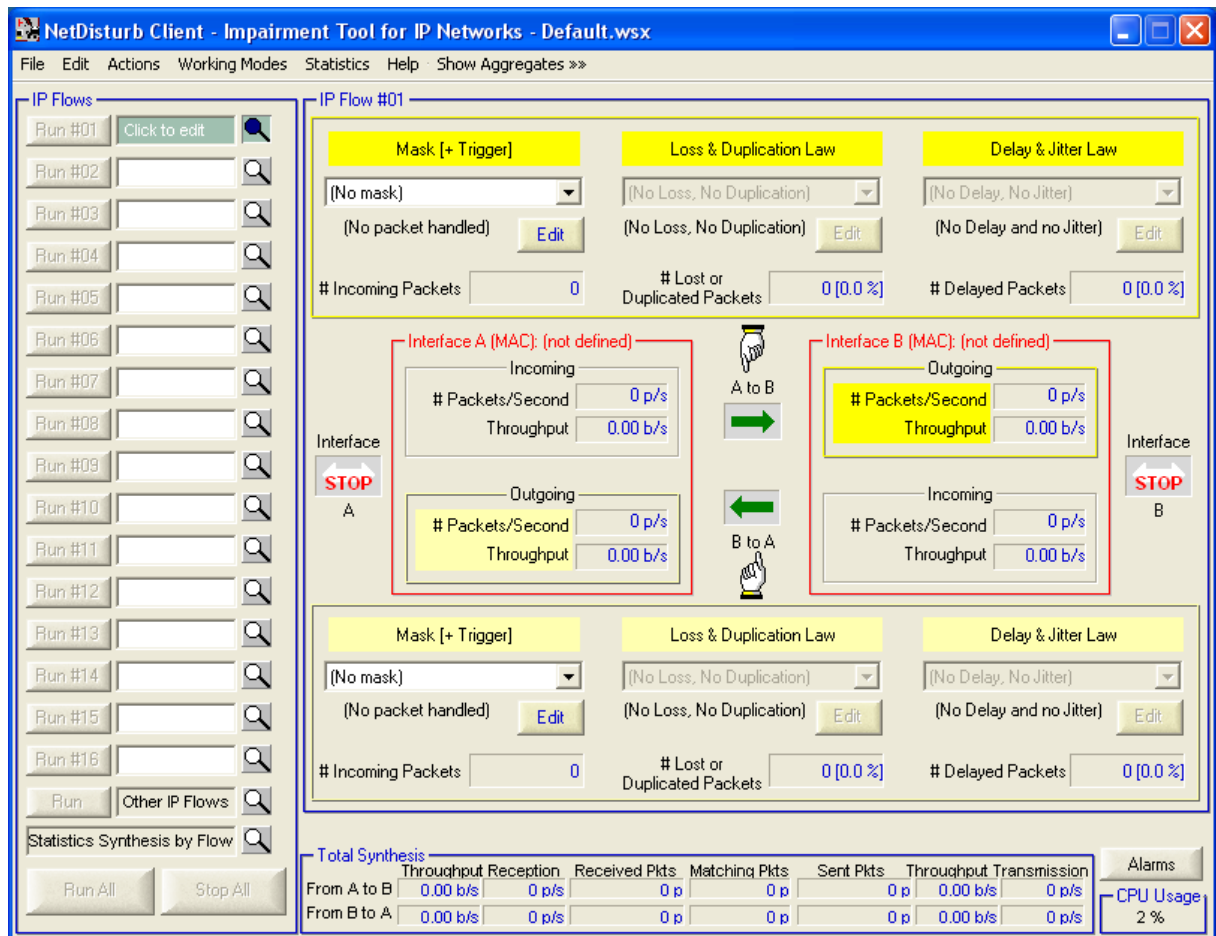
Start ► Programs ► **NetDisturb** ► 2) NetDisturb Client

And the **NetDisturb** Client will ask you then to input parameters:

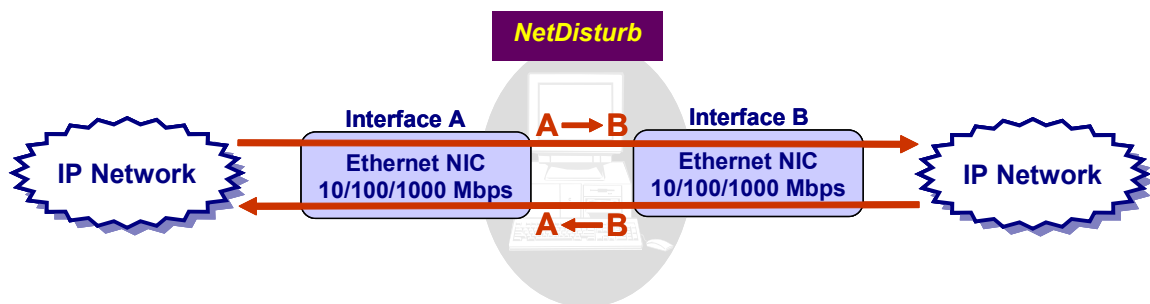
The image shows a Windows-style dialog box titled "NetDisturb Client - Login". It has a blue title bar and a light beige body. Inside, there are two main sections. The first section is labeled "User" and contains two text input fields: "Identification:" with the text "Administrator" entered, and "Password:" which is empty. The second section is labeled "NetDisturb Server Information" and contains a text input field for "NetDisturb Server IP Address:" with the value "127 . 0 . 0 . 1" entered. At the bottom of the dialog are two buttons: "OK" and "Cancel".

- **User Identification** = Administrator
- **User Password** = (no password needed)
- **NetDisturb Server IP address** = 127.0.0.1
(127.0.0.1 = default local IP address if the **NetDisturb** Server and the **NetDisturb** Client are installed on the same machine).

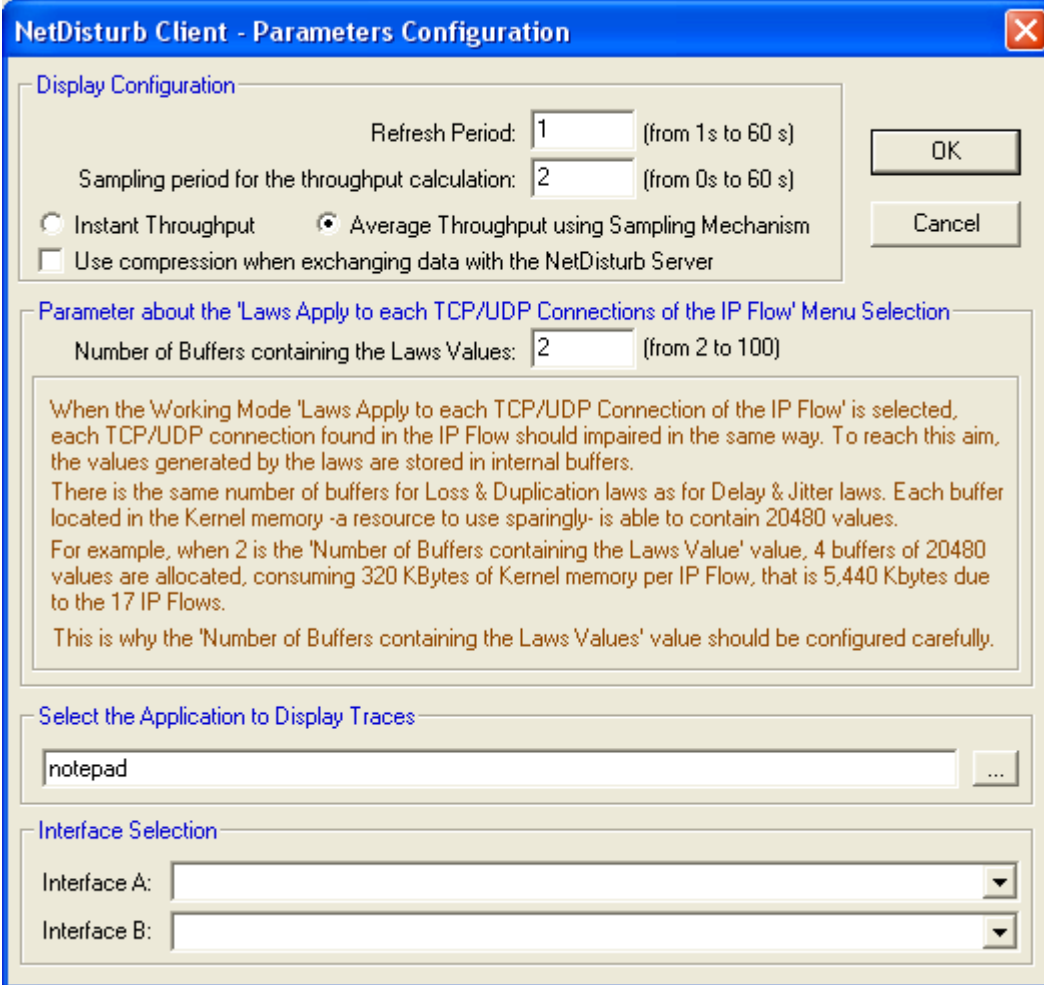
Click “OK” and the **NetDisturb** Client main window will appear:



You need then to select the NICs (interface A and interface B) that the **NetDisturb** Server is going to use.



Select "Configuration" in the Actions menu. The Parameters configuration window is displayed:



The image shows the 'NetDisturb Client - Parameters Configuration' window. It has a blue title bar with a close button. The window is divided into several sections:

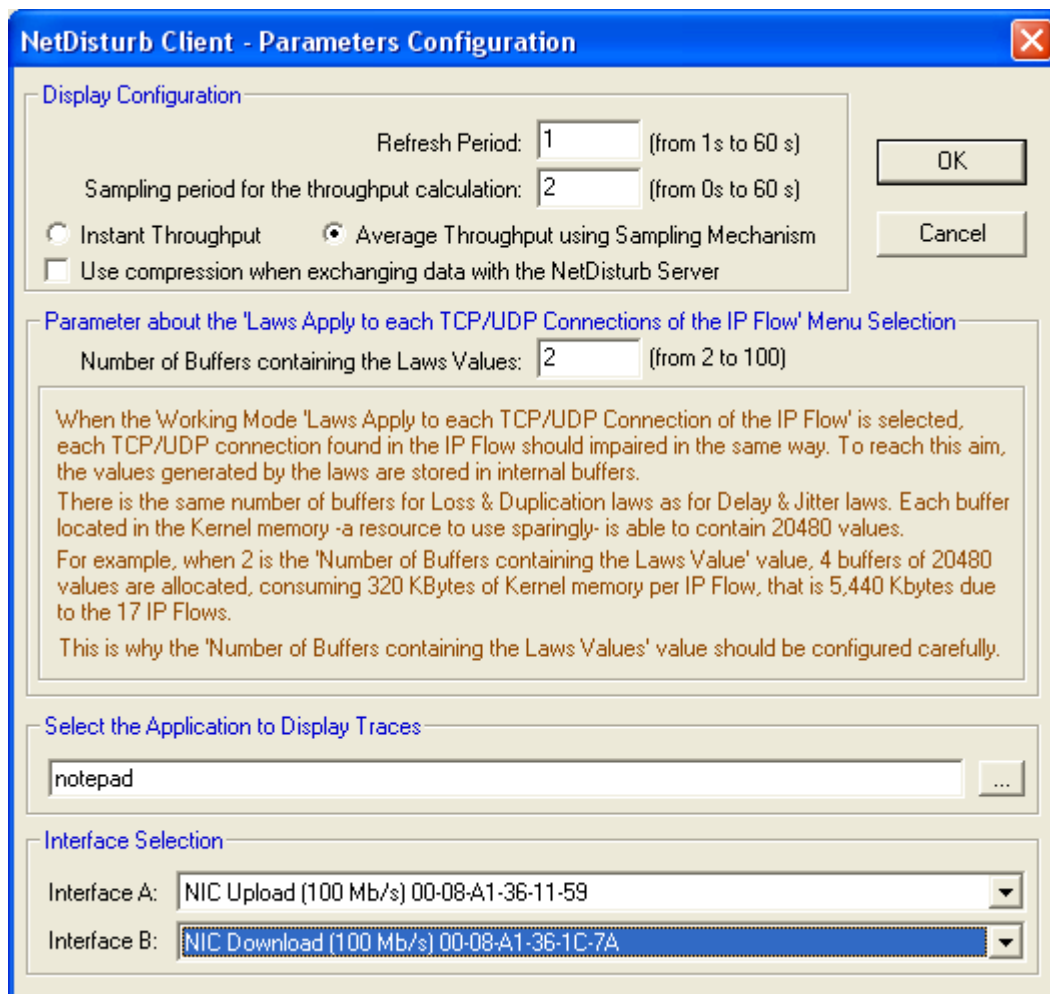
- Display Configuration:** Contains 'Refresh Period' (1) and 'Sampling period for the throughput calculation' (2). It has two radio buttons: 'Instant Throughput' (unselected) and 'Average Throughput using Sampling Mechanism' (selected). There is also a checkbox for 'Use compression when exchanging data with the NetDisturb Server' (unchecked). 'OK' and 'Cancel' buttons are on the right.
- Parameter about the 'Laws Apply to each TCP/UDP Connections of the IP Flow' Menu Selection:** Contains 'Number of Buffers containing the Laws Values' (2). Below this is a text box with detailed information about buffer allocation and memory usage.
- Select the Application to Display Traces:** A text box containing 'notepad' and a browse button (...).
- Interface Selection:** Two dropdown menus for 'Interface A:' and 'Interface B:'.

At the bottom of this window in the "Interface Selection" part, select one NIC for Interface A and another NIC for Interface B, and then validate with "OK".

Note: you must see in the combo-box (Interface A or Interface B) all NICs available and operational. If you don't see any NICs, please do the following steps:

- Verify that your NICs are installed and operational.
- Enable the needed NICs.
- Stop the **NetDisturb** Client.
- Stop the **NetDisturb** Server.
- Reboot your system if necessary.
- Start the **NetDisturb** Server.
- Start the **NetDisturb** Client.

Then you should see your installed NICs in the Interface A and B combo-boxes (see the example below):



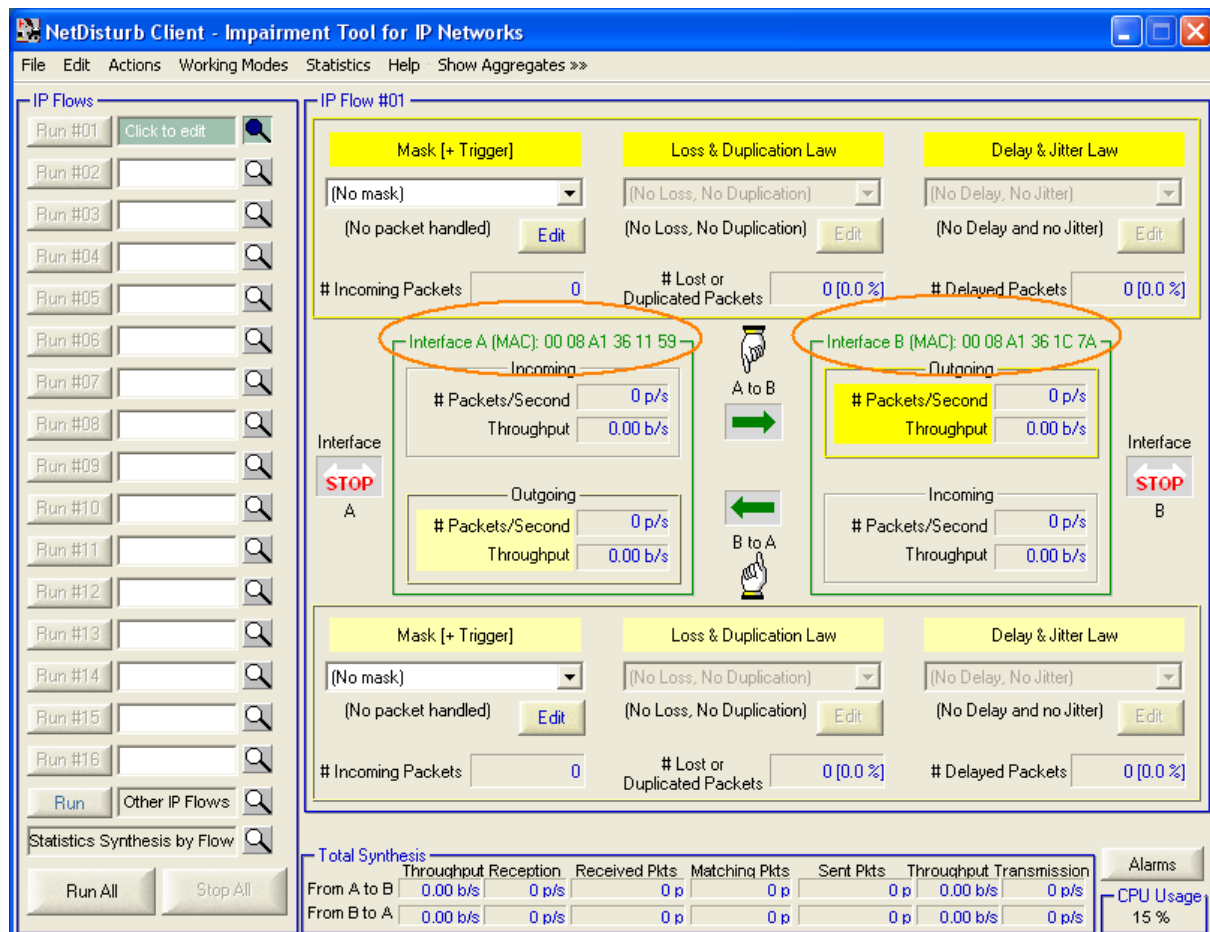
The image shows a Windows-style dialog box titled "NetDisturb Client - Parameters Configuration". It contains several sections for configuring the client's behavior.

- Display Configuration:** Includes a "Refresh Period" set to 1 (from 1s to 60 s), a "Sampling period for the throughput calculation" set to 2 (from 0s to 60 s), radio buttons for "Instant Throughput" and "Average Throughput using Sampling Mechanism" (the latter is selected), and a checkbox for "Use compression when exchanging data with the NetDisturb Server".
- Parameter about the 'Laws Apply to each TCP/UDP Connections of the IP Flow' Menu Selection:** Includes a "Number of Buffers containing the Laws Values" set to 2 (from 2 to 100). Below this is a text box explaining that when this mode is selected, values are stored in internal buffers. It notes that each buffer can contain 20480 values and provides an example: 2 buffers * 20480 values = 40960 values, consuming 320 Kbytes of kernel memory per IP flow (5,440 Kbytes for 17 IP flows).
- Select the Application to Display Traces:** A text field containing "notepad" and a browse button (...).
- Interface Selection:** Two dropdown menus. "Interface A:" is set to "NIC Upload (100 Mb/s) 00-08-A1-36-11-59". "Interface B:" is set to "NIC Download (100 Mb/s) 00-08-A1-36-1C-7A".

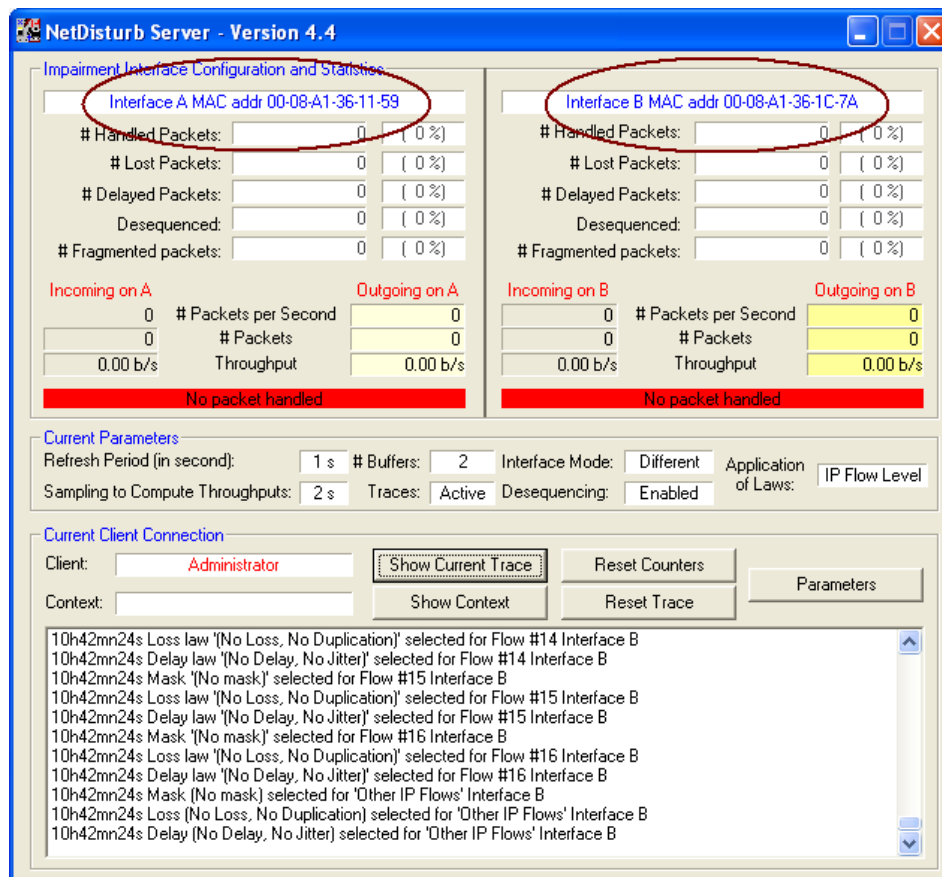
Buttons for "OK" and "Cancel" are located in the top right corner.

As soon as the configuration is done, the **NetDisturb** Server recognizes “Interface A” and “Interface B”.

The MAC Address of the selected interfaces is displayed in the **NetDisturb** Client and **NetDisturb** Server windows:



Graphical user interface for the NetDisturb Client with two Ethernet NICs configured



Graphical user interface for the NetDisturb Server with two Ethernet NICs configured

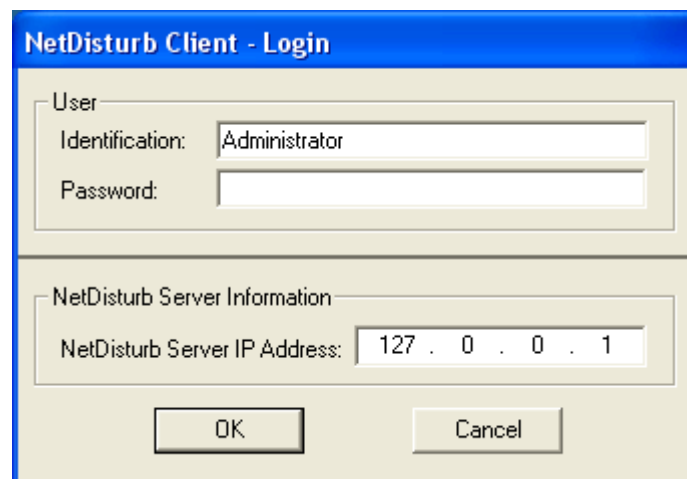
5.2 Description of NetDisturb Client and NetDisturb Server Startup

5.2.1 The NetDisturb Server Startup Modes

Offered functionality level depends on the availability or not of the **NetDisturb** driver. If the **NetDisturb** driver is lacking, a message warns the user. In this case it is possible to continue, however only some functions will not be available - this is called the “restricted mode”.

5.2.2 The NetDisturb Client Startup Options

When starting the **NetDisturb Client**, the User identification and Server parameters window is displayed.

The image shows a Windows-style dialog box titled "NetDisturb Client - Login". It has a blue title bar and a light beige body. The dialog is divided into two main sections. The top section is labeled "User" and contains two input fields: "Identification:" with the text "Administrator" entered, and "Password:" which is empty. The bottom section is labeled "NetDisturb Server Information" and contains one input field: "NetDisturb Server IP Address:" with the text "127 . 0 . 0 . 1" entered. At the bottom of the dialog are two buttons: "OK" and "Cancel".

This parameter window is composed of two sections:

- **User section**

This section allows the user identification. The identification could be either any user name (User mode) or the 'Administrator' (Administrator mode). A password is required only with the Administrator mode.

- ⇒ ADMINISTRATOR mode

To be connected as Administrator, **NetDisturb** Client must provide the corresponding password. With this mode the **NetDisturb** Client functionalities are fully available: **NetDisturb** Client can modify laws, stop or activate the relaying process and change the context.

- ⇒ USER mode

To be connected as User, **NetDisturb** Client provides a different identification than Administrator and a password is not necessary. **NetDisturb** Client functionality is reduced to the use of contexts located on the PC Server. For this mode, the masks and laws can't be defined.

- **Server Information section**

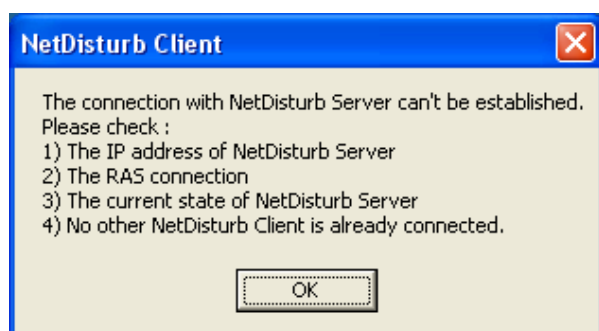
The **NetDisturb** Client needs the following information in order to connect with the **NetDisturb** Server:

1. The path to the remote **NetDisturb** Server folder
This path is composed of two parts:
 - The drive, the virtual drive or the name of the **NetDisturb** Server machine.
 - The directory location of the **NetDisturb** Server where the script subdirectory (containing **NetDisturb.tst**) can be found.
2. The **NetDisturb** Server IP address

In case of connection failure (if one of the parameters is invalid), an error window pops up to specify the connection error. Then the identification window is displayed again.

Error window:

Check:



- 1) The IP address is correct.
- 2) The RAS link is correctly established and data are exchanged between client and server.
- 3) The **NetDisturb** Server is running.
- 4) Another User is not already connected to the **NetDisturb** Server or the **NetDisturb** Client is already running on the Server machine.

5.2.3 Windows XP Service Pack 2



The installation procedure of NetDisturb version 4.4 creates the Registry entry if needed and set the value as explained below.

The **NetDisturb** Client and the **NetDisturb** Server use the RPC (Remote Procedure Call) mechanism to dialog.

Windows XP Service Pack 2 may deactivate the RPC service. To activate it and allow dialog between the **NetDisturb** Client and the **NetDisturb** Server, you need to modify the Registry.

The registry key is:

HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows NT\RPC

The value is:

RestrictRemoteClients REG_DWORD 0x00000000

If the value doesn't exist, you should create it. The result looks like the following figure:

